# HAZARD RANKING SYSTEM (HRS) PACKAGE
# WAPPINGER CREEK
# DOWNSTREAM OF WAPPINGERS FALLS
# WAPPINGER FALLS, NY

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# Supplemental Remedial Investigation Report
# Tidal Portion of Wappinger Creek
# Three Star Anodizing Site OU2
# Wappingers Falls, New York

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Version: FINAL
EA Project No. 14368.40

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# 1. INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) tasked EA Engineering, P.C. and its affiliate EA Science and Technology (EA) to collect sediment samples from Wappinger Creek in the vicinity of the Three Star Anodizing Site (3-14-058), Wappinger Falls, New York (Figure 1-1) for analysis of inorganic constituents of concern.

The Work Assignment was conducted under the NYSDEC State Superfund Standby Contract (Work Assignment No. D004438-40).

The objectives of this Work Assignment were to:

- Collect sediment samples from the tidal portion of Wappinger Creek
- Analyze sediment samples for total inorganic constituents, including mercury and cyanide
- Analyze selected sediment samples for organic methylmercury
- Analyze grain size distribution for selected sediment samples
- Prepare a Supplemental Remedial Investigation Report for Wappinger Creek tidal reach (Three Star Anodizing Site Operating Unit 2 [OU2])
- Prepare a Feasibility Study Report, if necessary, for OU2.

This document constitutes the focused Supplemental Remedial Investigation deliverable for this contract, integrating the findings from two previous studies prepared for NYSDEC, included as appendixes to this Supplemental Remedial Investigation Report:

1. Three Star Anodizing Site, Wappingers Falls, New York Remedial Investigation of Wappingers Creek, NYSDEC Site 314058, Final Report (O'Brien and Gere Engineers, Inc. 2007a) (Appendix A)
2. Three Star Anodizing Site, Wappingers Falls, New York, Biota Sampling Report for Wappinger Creek (EA 2007) (Appendix B).

## 1.1 SITE HISTORY AND CONTAMINANTS

The Three Star Anodizing Site is comprised of an 8.5-acre industrial facility located on the south bank of Wappinger Creek. Several buildings, paved parking areas, and access roadways are present on the site. The site is located within the 100-year flood plain along an oxbow of Wappinger Creek. The creek discharges to the lower Hudson River approximately 1.5 mi downstream from the site.

.
The Three Star Anodizing Site has been the location of industrial activities for over 150 years. Primary past uses of the site included dye operations, manufactured gas plant operations, and metal plating (O'Brien & Gere Engineers, Inc. 2001). A number of other smaller industrial activities also took place at the Three Star Anodizing Site. Dye operations, known as the Dutchess Bleachery, operated at the site between 1832 and 1955. The Dutchess Bleachery and Wappinger Water, Gas, and Electric Companies operated a coal-fired manufactured gas plant that included activities from the late 1800s to approximately 1913. Three Star and later Watson Metals Products Corporation operated a metal plating facility at the site from 1958 to approximately 1995.

Operations in the Market Street Industrial Park located on the north side of Wappinger Creek also included the Dutchess Bleachery, among others. This area also represents a potential source of hazardous waste constituents to the creek. Most of the upland area along the creek downstream of the Market Street Industrial Park consists of residential properties and wooded land.

Several buildings at the Three Star Anodizing Site had floor drains that discharged directly to the creek. Most of the buildings at one time had sanitary facilities that also discharged directly to the creek. The Axton-Cross (bulk chemical sales) building at the Three Star Anodizing Site had floor drains that discharged to the Three Star lagoon adjacent to the building (Dutchess County Department of Health 1971).

Rinse water from plating tanks in the Three Star facility was reportedly discharged to the back of the plant and subsequently flowed to the Three Star lagoon. Paint stripping caustics were discharged to the floor drains of the plant and to the ground behind the facility. In that area, the ground slopes toward the southeast in the direction of a raceway and Three Star lagoon. Page Print Systems occupied one of the buildings at the site (EA 1986) and reportedly discharged water from photographic development rinse sinks.

## 1.2 TIDAL WAPPINGER CREEK (OU2)

The tidal creek (OU2) is the portion of the creek that extends downstream from Wappingers Falls to the confluence of Wappinger Creek and the Hudson River. The tidal creek begins at the hydroelectric facility discharge at the upstream portion of the Market Street Industrial Park. The tidal creek is approximately 2 mi in length. Water levels can typically fluctuate up to 4 feet (ft) in the creek over the tidal cycle of the Hudson River.

In the vicinity of the Market Street Industrial Park, the creek is narrow (approximately 90 ft wide) relative to downstream sections; retaining walls border both sides of the creek in this reach. Two bridges (referred to as the east and west bridges) span the creek connecting the Three Star Anodizing Site to the Market Street Industrial Park. The retaining walls end at the west bridge. Downstream of the retaining walls along this section of the creek, the land on the north side of the tidal creek is undeveloped, containing a steep bank with exposed bedrock. The Market Street Industrial Park has been inundated by flood water at least twice, during floods in 1902 and 1938 (Popper 1991). It appears that the area floods when stage heights exceed

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approximately 13 ft. In this reach, the creek is shallowest on the south side nearest the Three Star Anodizing Site with water depths less than 5.5 ft and deepens to approximately 12 ft along the north bank. The relative narrowness of the creek at this location may cause higher water velocities and bed scouring than in wider sections located downstream. The creek bed is composed primarily of rocks and cobble with little sediment accumulation.

The creek bends toward the south as it passes the manufactured gas plant site associated with the Three Star Anodizing Site. Approximately 1,000 ft downstream of the west bridge, the creek widens to approximately 250 ft. A shoal composed primarily of rock and cobble overlain by silt and sand is located along the inside bend. The water velocity decreases as the creek widens and the cross-sectional area increases, facilitating sediment deposition and accumulation in this area. The shoal created by sediment deposition continues along the eastern bank past an unnamed tributary that drains into the creek approximately 1,500 ft downstream of the site. The proportion of fine sediment (sand and silt) comprising the shoal increases downstream. Dense growth of invasive water chestnut (*Trapa natans*) covers most of the shoal; during the growing season, only the main channel has open water. In this section of the creek, most flow and the open channel run along the west side of the creek.

A shallow embayment is located along the northern shore of the creek approximately 0.75 mi downstream of the site. This embayment is approximately 5.5 acres (approximately 800 ft by 300 ft) comprised of freshwater tidal wetland. Sediment in this embayment is primarily of silt and organic matter and supports aquatic emergent and submerged plant growth throughout. The main currents of the tidal creek bypass the embayment.

Downstream of the embayment, the tidal creek widens to approximately 600-800 ft. Surficial sediment in this section of the creek is primarily silt and sand; deeper sediments contain more rock and cobble. The main flow in this section occurs along the approximate center of the channel with water depths up to approximately 15 ft. Both shores are shallow throughout this section; approximately half of the surface area in this section of the tidal creek has water depths less than 5 ft. An island is located in the western half of the creek; a depositional area is located west of the island. During the growing season, most of the shallow area is chocked with dense stands of water chestnut.

Upstream of the confluence of Wappinger Creek with the Hudson River, a bridge carrying County Route 28 (CR 28) and a railroad bridge constrict the lower section of the creek to approximately 140 ft and 250 ft wide, respectively. The railroad bridge is located approximately at the confluence of the tidal creek and the river, and the CR 28 Bridge is located approximately 1,200 ft upstream of the river. The tidal creek reaches its greatest depth of approximately 25 ft beneath the CR 28 Bridge. The creek widens to approximately 800 ft between bridges and silt and sand overlay rock and cobble throughout this area.

## 1.3 FINDINGS OF REMEDIAL INVESTIGATION (O'BRIEN AND GERE ENGINEERS, INC. 2007a)

The remedial investigation (RI) (Appendix A) prepared by O'Brien and Gere Engineers, Inc. (2007a), provides a detailed description of the physical features of the Three Star Anodizing Site,

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industrial and commercial history, and the associated contaminant sources and pathways. This information is summarized briefly in the following sections.

### 1.3.1 Remedial Investigation Objectives

The RI (O'Brien and Gere 2007a) identified the following objectives of the study:

- Observe current conditions of Wappinger Creek and evaluate potential migration pathways of constituents
- Perform screening level assessment of potential site impacts to fish and wildlife in a Fish and Wildlife Impact Assessment (FWIA) through Step IIC
- Complete a pathway analysis for qualitative evaluation of potential human exposure
- Evaluate surface water in Wappinger Creek for potential impacts from Three Star Anodizing Site activities and other potential sources
- Identify spatial patterns of constituents in sediment
- Evaluate composition of polycyclic aromatic hydrocarbons in sediment compared to Three Star Anodizing Site sources
- Following a thorough delineation of the creek, a feasibility study will be completed, if necessary and appropriate.

The sampling plan for the Wappinger Creek RI included reconnaissance to identify areas of sediment deposition and scour, substrate type, and analysis of surface water and sediment in the tidal creek and at upstream reference locations. Based on this information, the tidal creek was stratified into four areas (Figure 1-2):

1. ***Site Area***—The narrow upper reach adjacent to the upland Three Star Anodizing Site extending approximately 2,700 ft from the foot of Wappingers Falls ending at the shoal area.
2. ***Shoal Area***—The shallow depositional area beginning approximately 1,000 ft downstream from the site and the west bridge and extending approximately 1,500 ft to downstream of an unnamed tributary entering the creek on the east shore.
3. ***Embayment***—A 5.5-acre shallow freshwater tidal wetland embayment off the main creek channel approximately 0.75 mi downstream of the site
4. ***Downstream Area***—The tidal reach downstream of the embayment to the confluence with the Hudson River.

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To evaluate potential wildlife exposures, an FWIA (NYSDEC 1994) was completed that included identification of constituents of potential ecological concern (COPECs) for representative species consisting of mink and great blue heron. To evaluate potential human exposure to constituents in the creek, a qualitative exposure pathway analysis was completed in accordance with NYSDEC (2002) guidance.

### 1.3.2 Source and Pathway Assessment

Constituents in surface water were generally below screening values for low flow. During storm event sampling, several inorganic constituents were detected above screening levels upstream in Wappingers Lake as well as the tidal creek. In general, the concentrations of constituents in the water column upstream of the site were similar to those observed at the site and downstream indicating that their presence is not related to the Three Star Anodizing Site.

Sediment at the background locations and in the tidal creek contained inorganic constituents above screening levels. Background sediment concentrations of inorganic constituents were frequently above lowest effect level (LEL) screening levels, while inorganic constituents often exceeded the higher severe effect level (SEL) screening levels. Background concentrations of 8 of 12 inorganic constituents analyzed exceeded LEL values. The concentrations in the tidal creek sediments were much higher than detected background levels. Highest concentrations were generally detected in deeper (deeper than 6 in.) sediment in the shoal and embayment areas. In decreasing order of magnitude above SEL screening values, the primary inorganic constituents detected in surface sediment (of greater ecological significance) consisted of mercury, lead, zinc, and chromium. Mercury was detected at the highest concentrations above SEL screening values (25 times the SEL screening value) in surface (0-6 in.) and deeper (deeper than 6 in.) sediments.

The following table from the RI summarizes the relative concentrations of inorganic constituents compared to SEL screening values:

| | **Oder of Magnitude above SEL Screening Values** | | | |
|---|---|---|---|---|
| **Area** | **50+** | **20+ to 50** | **10+ to 20** | **1 to 10** |
| Shoal | Mercury | Zinc, Total chromium | Total cyanide | Lead, cadmium, arsenic, copper, antimony, iron |
| Embayment | Mercury | Total chromium | Total cyanide | Zinc, lead, arsenic, copper, cadmium |
| Downstream | | Mercury | | Total chromium, zinc, lead, antimony, cadmium, total cyanide, arsenic/copper, iron/nickel |

### 1.3.3 Fish and Wildlife Impact Assessment Steps I and II

The FWIA evaluated the physical and biological characteristics, potential ecological exposure pathways, and potential risks to selected receptors of Wappinger Creek. The FWIA Step IIC report (O'Brien and Gere Engineers, Inc. 2007b) provides a streamlined screening level assessment incorporating maximum concentrations of constituents detected in surface water

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and sediment to conservatively estimate potential exposure of selected receptors. The report identified two assumed exposure pathways: direct exposure to constituents in the water column and sediment and via the food chain for wildlife foraging in the area. Potential receptors identified included benthic invertebrates, fish, predatory birds, small mammals, songbirds, reptiles, and amphibians. Concentrations of constituents in the water column and sediment were compared to ecologically-based criteria or screening levels (LEL; NYSDEC 1999).

The primary findings of the FWIA were:

- Wappinger Creek provides aquatic and wetland habitats.
- Maximum concentrations of chemical constituents in surface water and sediment were detected above conservative, ecologically-based screening values.
- Benthic macroinvertebrates and water column organisms may be exposed to COPECs in areas where maximum concentrations of constituents occur in sediment.
- Higher trophic level organisms may also be exposed to COPECs by indirect accumulation of constituents via the food chain.
- The exposure concentrations for sediment were generally much higher than those for surface water indicating that sediment constituents were primarily responsible for elevated hazard quotient estimates calculated from the food chain model.
- Sediment COPECs with hazard quotients greater than one included semivolatile orgranic compounds and inorganic constituents. Specifically, semivolatile organic compounds consisted of 2-dimethylphenol, phenol, and polycyclic aromatic hydrocarbons; the inorganic constituents primarily consisted of antimony, chromium, mercury, and zinc.

The range of estimated hazard quotient estimates calculated from the food chain model for Wappinger Creek for selected higher trophic level receptors (mink and great blue heron) associated with inorganic constituents in sediment are summarized in the following table adapted from the FWIA Step IIC Report (O'Brien and Gere Engineers, Inc. 2007b):

| Hazard Quotient | Mink | Great Blue Heron |
|---|---|---|
| 1 to 10 | Chromium, thallium, zinc | Cadmium, chromium, cyanide, zinc |
| 10-100 | Aluminum, antimony, arsenic, cadmium, selenium | Mercury |
| > 100 | Mercury | Antimony |

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### 1.3.4 Qualitative Human Health Risk

An exposure pathway analysis was completed according to state guidance (NYSDEC 2002) which identified potential receptor populations for the tidal creek consisting of recreational users, swimmers, or fish consumers. Exposure to creek sediments and consumption of contaminated fish tissue were the primary exposure pathways for inorganic constituents to human receptors. The fish and invertebrate tissue study (Section 1.4) was designed to verify that fish consumption was a complete pathway.

## 1.4 FINDINGS OF FISH AND INVERTEBRATE TISSUE STUDY (EA 2007)

The FWIA (O'Brien and Gere Engineers, Inc. 2007b) makes the assumption of a complete exposure pathway from direct exposure to sediment inorganic constituents and via accumulation through the food chain to higher trophic level receptors. To confirm these pathways and document the potential food chain exposure, EA (2007) sampled benthic macroinvertebrates and forage and top predator fish to determine tissue concentrations of inorganic COPECs. The tissue study (Appendix B) provided the following findings:

- The benthic macroinvertebrate community was depauperate with few species or individuals. Two small isolated populations of zebra mussel and snail were sampled in the downstream area between the CR 28 Bridge and the embayment.

- Forage community was represented by spottail shiner, tessellated darter, and banded killifish; robust specimens of smallmouth and largemouth bass represented top predators.

- Detected concentrations of COPECs in fish were low and well below triggers for issuance of a consumption advisory.

- Statistical comparisons indicated no significant difference between sampling stations.

- Statistical comparison among species indicated considerable variability among taxon. The invertebrates generally had higher metal tissue concentrations than fish for arsenic, cadmium, copper, lead, and nickel. Forage fish generally had higher concentrations of zinc and bass had higher concentrations of mercury. The invertebrates grouped statistically with similar concentrations of cadmium, nickel, and lead; the two bass species grouped statistically for copper and lead. All the fish species grouped statistically for nickel and the three forage fish species grouped statistically for copper, lead, and zinc.

- Given the high concentrations of COPECs in sediment, the negligible accumulation of COPECs in tissue of aquatic organisms could be related to: lack of a benthic invertebrate forage base, minimal direct exposure of fish to sediments, movement of fish between the Hudson River and tidal creek with relatively short interrupted residence time in the creek, or a change in the inorganic constituent characteristics of the sediment.

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Before developing remedial alternatives for Wappinger Creek sediment, NYSDEC determined that additional sediment sampling should be conducted to provide insight into the apparent disconnect between COPEC concentrations in sediment and tissue. That is, had sediment conditions changed; had contaminated sediment been scoured by high flows, or been buried by relatively clean sediment during the interim period between the 2001-2003 sediment sampling (O'Brien and Gere Engineers, Inc. 2007a) and the 2007 tissue sampling (EA 2007), thus disrupting the assumed exposure pathway? To provide this information, EA performed additional sediment sampling in 2009 which are described in Sections 2 and 3.

## 1.5 SUPPLEMENTAL WAPPINGER CREEK REMEDIAL INVESTIGATION OBJECTIVES

The objectives of the supplemental RI studies conducted by EA under Work Assignment No. D004438-40 include the following:

- Determine if existing concentrations of COPECs are comparable to conditions at the time of the 2001-2003 study
- Evaluate whether the spatial and depth distribution of COPECs changed from that characterized by the RI studies in 2001-2003
- Evaluate validity of exposure pathway assumptions in the RI (2007) FWIA risk study
- Evaluate validity exposure pathway assumptions of qualitative human health (2007) risk evaluation
- Identify remedial action objectives for Wappinger Creek OU2.

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# 2. METHODS – SEDIMENT SAMPLING AND ANALYSIS

## 2.1 STUDY AREAS AND SAMPLE LOCATIONS

### 2.1.1 Sample Collection and Processing

Methods for collection, processing, and analysis of sediment samples were detailed in the project Field Sampling Plan. Sediment samples were collected using two methods: hand coring was utilized for water depths less than 5-6 ft, and gravity coring was used for water depths greater than 5-6 ft. Fifteen approximate sampling locations were allocated to the following areas (Figure 2-1):

1. Site area—one station
2. Shoal area—three stations
3. Embayment—three stations
4. Shoal area adjacent to the embayment—three stations
5. Downstream at the wide transect near the island—three stations
6. Downstream near the CR 28 Bridge—two samples.

The target core length was 2 ft or to refusal whichever was less. The actual station locations were determined in the field to optimize chances of obtaining the target core length. The location of each station was documented in the field using a Trimble ProXR differential Global Positioning System. The ProXRS uses the U.S. Coast Guard Differential Beacon System to obtain differential accuracy of 1-3 meters. Station coordinates were recorded in the field log along with approximate water depth and general observations of site conditions (Appendix C).

The 3-in. core casing was fitted with a clean stainless steel core cutter, retainer, and clean section of cellulose acetate butyrate plastic liner. When sufficient penetration was achieved at a location, the liner containing the sample was removed, capped, labeled, and placed on ice for storage until later processing. In order to provide sufficient sediment material to meet the laboratory volume requirements, two cores were collected at each location and labeled appropriately. The second core was typically taken within a few feet of the first core at each station.

Processing and shipping of samples was completed in compliance with the Quality Assurance Project Plan. Sediment cores were divided into the following depth intervals: 0-6 in., 6-12 in., and 12-24 in. (or refusal). Sediment was removed by cutting the plastic core liner length-wise and removing sediment with a clean, decontaminated stainless-steel spoon. Field characterization of the sediment cores was recorded in a core log (Appendix D). Sediments from each interval were placed in separate stainless-steel bowls, composited, and transferred directly into clean containers (16-oz glass jars) provided by the laboratory for analysis of total Target Analyte List metals including mercury and cyanide. Duplicate field samples were preserved for analysis at a rate of 1 for every 20 samples. Additional sample material was provided to the laboratory for matrix spike/matrix spike duplicate analyses at the rate of 1 per 20 samples.

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Additional subsamples were placed in clean 4-oz glass jars and frozen; a subset of these frozen samples was later selected based on total mercury results for analysis of methylmercury. Samples were listed on standard chain-of-custody forms and shipped on ice to the appropriate analytical laboratory subcontractor.

### 2.1.2 Analysis of Inorganic Constituents and Grain Size

Sediment samples were analyzed for Target Analyte List metals, including cyanide and mercury by Life Science Laboratories, Inc., East Syracuse, New York. One sample from each of the six samplings area was also analyzed for grain size distribution using sieve and hydrometric methods. Analytical methods for inorganic constituents are summarized in the following table:

| Life Science Laboratories, Inc. Analytical Methods | | | |
|---|---|---|---|
| Analyte | Matrix | Method | Sample Container |
| Target Analyte List Metals | Soil/water | SW846 6010B | 16-oz jar |
| Mercury | Soil/water | SW846 M7471A | |
| Cyanide | Soil/water | SW846 9012A | |
| Moisture | Soil | | |
| Grain Size | Soil | D4222 | 16-oz jar |

Analytical results were provided by Life Science Laboratories, Inc. in hard copy and electronic data deliverable format (Appendix E).

### 2.1.3 Analysis of Organic Mercury

Selected samples with elevated total mercury concentrations were analyzed for methylmercury by Brooks Rand Labs, Seattle, Washington. Methods for analysis of methylmercury are summarized in the following table:

| Brooks Rand Labs Analytical Methods | | | |
|---|---|---|---|
| Analyte | Matrix | Method | Sample Container |
| Methylmercury | Sediment | EPA 1630, modified | 4-oz jar |
| Moisture | Sediment | SM 2540G | |

Analytical results were provided by Brooks Rand Labs in hard copy and electronic data deliverable format (Appendix F).

## 2.2 DATA QUALITY REVIEW AND VALIDATION

Environmental Data Services performed a quality assurance review of the analytical procedures, laboratory calibration and quality control, and results (Appendix G) and provided a report summarizing their findings. Environmental Data Services did not recommend any restrictions on use of the data, but did recommend several modifications to the laboratory data qualifiers applied by the laboratories.

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## 2.3 HEALTH AND SAFETY

A site Health and Safety Plan was modified from the Health and Safety Plan prepared for the fish and invertebrate tissue study (Section 1.3). Field sediment sampling and processing was conducted in Level D protection, as appropriate.

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# 3. DISTRIBUTION AND CONCENTRATION OF SEDIMENT CONSTITUENTS OF POTENTIAL ENVIRONMENTAL CONCERN

## 3.1 FIELD WATER QUALITY DATA

Supplemental sediment sampling was performed on 7-8 October 2009. Water temperature, conductivity, salinity, dissolved oxygen, pH, and turbidity were recorded 1 ft below the water surface at each location during sediment sampling (Table 3-1). Water temperature ranged from 14.4 to 17.7 °C and dissolved oxygen ranged from 8.2 to 10.6 milligrams per liter. Conductivity was 0.316-0.486 milli-Siemens/centimeter and salinity was 0.18-0.29 parts per thousand. Turbidity ranged from 2 to 34 nephelometric turbidity unit. Observed pH ranged from 7.56 to 8.22. These conditions are within the typical range that might be expected in a tidal freshwater tributary to the mid-Hudson River during early fall.

## 3.2 PHYSICAL CHARACTERIZATION OF SEDIMENT SAMPLES

The recovered length of sediment cores exceeded 12 in. at the five downstream stations and the four stations in the embayment and mouth of the embayment (WC-1-SED to WC-9-SED). Each of these locations, therefore, yielded three depth strata samples (Appendix D): A, 0-6 in.; B, 6-12 in.; and C, 12+ in. The remaining six stations (WC-10-SED to WC-15-SED) produced only two depth strata (A and B) before refusal.

Grain size was analyzed using standard sieve and hydrometer for one station from each of the 2009 sampling areas to describe the physical characteristics of the sediment for subsequent use in evaluating remediation alternatives. The sediment samples exhibited a clear progression from coarser material upstream in the site area to finer material downstream near the CR 28 Bridge (Table 3-2). Sediment from the site area (WC-15) and the upstream end of the shoal (WC-14) was composed of greater than 63-69 percent gravel; less than 1-2 percent of the material was classified as silt-clay. Sediment from the embayment (WC-7) and the wide downstream shoal (WC-3) had less than 2 percent of the material classified as gravel and 51-54 percent classified as silt-clay. Sediment downstream near the CR 28 Bridge also had less than 3 percent gravel material; the silt-clay component at this location accounted for approximately 70 percent of the sample material.

## 3.3 COMPARISON OF CONSTITUENTS OF POTENTIAL ENVIRONMENTAL CONCERN TO SEDIMENT SCREENING VALUES

### 3.3.1 NYSDEC Sediment Screening Guidelines—Lowest Effect Level and Severe Effect Level

To evaluate the potential for ecological effects associated with sediment inorganic constituents, sediment concentrations were compared with LEL and SEL screening values (Table 3-3) established by NYSDEC (1999). These screening values have not been established as sediment cleanup criteria, but as guidance for site evaluation and to identify areas that could require remediation. Concentrations below the LEL screening value are generally expected to have no

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associated ecological risk; concentrations greater than the SEL screening value have the potential for severe ecological impacts. Between the LEL and SEL, there is a potential for moderate impacts to aquatic resources. For constituents with no established screening values, background sediment concentrations can be used as a benchmark for evaluating sediment impacts associated with a particular site.

### 3.3.2 Background Constituent Concentrations

The RI (O'Brien and Gere Engineers, Inc. 2007a) reported background concentrations (Table 3-3) for inorganic constituents based on sediment samples collected in Wappinger Lake upstream of the site and Wappingers Falls. Lead and zinc were detected in Wappingers Lake sediment at background concentrations that ranged from levels similar to LEL screening values to infrequent detections that were above SEL screening values. In addition, copper, mercury, and nickel were detected at concentrations above LEL screening values in all background samples. Arsenic, cadmium, and chromium were detected at concentrations ranging from below their respective LEL screening values to slightly above them. Total cyanide was detected in 1 of 8 background samples. Iron and manganese are common minerals, and the detection of concentrations above the LEL screening values may be associated with local mineral levels. Silver and thallium were not detected in background samples; antimony and cyanide were detected in only one sample and are listed in Table 3-3 as maximum. Methylmercury was not analyzed by O'Brien and Gere Engineers, Inc. (2007a) in background samples.

### 3.3.3 2009 Sediment Data

#### 3.3.3.1 Inorganic Constituents of Potential Environmental Concern

Based on ecological exposure risk and concentration relative to NYSDEC screening values, antimony, arsenic, cadmium, chromium, lead, mercury, zinc, and cyanide were identified as COPECs in the RI (O'Brien and Gere Engineers, Inc. 2007a). Data from the 2009 sediment study are consistent with those findings (Table 3-4) except that cyanide was generally below detection and no longer appears to be a constituent of concern.

Cyanide was detected in only 4 of 39 samples (Table 3-4); although these 4 samples exceeded the screening value, 3 were less than background. The single sample exceeding sediment background cyanide was a deep sample (12+ in.) at the mouth of the embayment (WC-9-SED-C). The other three samples (WC-5, WC-7, and WC-11) with detected cyanide were mid-depth samples (6-12 in.).

Lead (20), mercury (19), zinc (18), chromium (17), and copper (12) had the most samples that exceeded their respective SEL screening values (Tables 3-4 and 3-5, Figure 3-1). The largest relative (measured concentration divided by the SEL screening value) exceedances were observed for mercury and chromium (Table 3-6). The highest exceedance ratios were generally observed in samples from the embayment and the shallow stations at the wide transect at the island downstream of the embayment. These highest ratios generally occurred for sediment samples deeper than 6 in.; although surface samples (0-6 in.) often exceeded the SEL screening value.

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Sediment mercury ranged from not detected to 81 milligrams per kilogram dry weight. The most samples exceeding the SEL screening value for mercury were collected in the embayment area where concentrations ranged from one sample below the LEL screening value at 0.11 milligrams per kilogram (WC-8-SED-C) to 81 milligrams per kilogram (WC-9-SED-C). Ten of 12 samples exceeded the SEL screening value. The SEL exceedance ratios for mercury in embayment samples ranged from 1.5 to 62.3 (Table 3-6). Methylmercury was analyzed in 11 samples from the embayment with reported concentrations from not detected in one sample (WC-8-SED-B) to 2.31 micrograms per kilograms (WC-6-SED-B).

The NYSDEC screening values apply to total mercury; however, the concentrations of methylmercury were less than the LEL value for total mercury in all tested samples (Table 3-4). Many of the samples downstream in the vicinity of the island at the wide transect also exceeded the SEL screening value. Sediment mercury at station WC-4 in the open water, deeper channel near the upstream end of the island was less than the LEL, but samples from the shallow shoal on the north and south side of the main channel all exceeded the SEL level. The exceedance ratios ranged from 1.2 to 26.2 (Table 3-6). It appears that scour in the main channel where most of the flow is concentrated has prevented deposition of contaminated sediment within the main channel. Similar patterns were observed at WC-10 located on the edge of the main channel near the embayment and WS-12 at the edge of the main channel adjacent to the upstream shoal area. Copper slightly exceeded the LEL screening level at both of these locations and arsenic slightly exceeded the LEL value in WC-12-SED-B; none of the other COPECs exceeded their respective LEL value at either of these locations. Sediment mercury in the downstream area near the CR 28 Bridge was less than the LEL screening value in 5 of 6 samples. The surface sediment sample (WC-2-SED-A) was the only sample from this area that exceeded screening values; mercury (2.6 milligrams per kilogram) in this sample was twice the SEL screening value (Tables 3-4 and 3-6). Mercury in sediment from the shoal area upstream between the site and the embayment was below the LEL screening value in 7 of 10 samples. One sample (WC-11-SED-B) was twice the SEL value; two samples (WC-11-SED-A and WC-14-SED-A) were above the LEL, but less than the SEL value (Table 3-4). Adjacent to the site (WC-15), mercury in the surface sample was nearly twice the SEL and in the 6+in. sample was 4.5 times greater than the LEL level (Table 3-6).

The distribution and frequency of samples that exceeded the LEL and SEL screening levels for chromium, lead, and zinc were similar to that described above for mercury (Figure 3-1) except that the SEL exceedance ratios were typically lower than calculated for mercury (Tables 3-4, 3-5, and 3-6). Copper concentrations throughout the tidal creek more frequently exceeded the LEL value (34 of 39 samples) than observed for mercury chromium, lead, and zinc; however, fewer samples exceeded the SEL value (12 of 39).

Concentrations of antimony, arsenic, and cadmium each exceeded their respective SEL value in four different samples; all of these except WC-9-SED-C were less than twice the SEL value (Table 3-6). All three of these COPECs exceeded the SEL value in sample WC-5-SED-C, on the shoal north of the island downstream of the embayment. Other samples exceeding the SEL value for these three COPECs were collected from the embayment.

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#### 3.3.3.2 Other Inorganic Constituents

Nickel and iron exceeded the LEL screening value in every sample; however, both constituents were within the typical range of background reported by O'Brien and Gere (2007a) (Table 3-5). Silver was below detection except in one sample near the embayment which was below the LEL screening value. Thallium was not detected in any samples. Aluminum is a common inorganic component of mineral soils and was within the range of background in all samples. Barium, beryllium, cobalt, selenium, and vanadium have no established screening values, but were generally within the background range in all samples. The common minerals calcium, magnesium, potassium, and sodium were within the range of background except the 6-12 in. sample adjacent to the site (WC-15-SED-B); sodium and potassium were greater than background in this sample. Another common mineral, manganese, exceeded the LEL screening level in 5 samples, but was within the range of background in all samples.

## 3.4 SPATIAL DISTRIBUTION OF INORGANIC CONSTITUENTS IN SEDIMENT

### 3.4.1 Statistical Comparison of 2001-2003 and 2009 Sediment Data

Using the area designations in the 2001/2003 database (Site, Shoal, Embayment, Downstream; Figure 1-2) the 2009 data (Figure 3-1) were compared to the 2001-2003 data (Figure 3-2) using a t-test. The t-statistic was calculated for each constituent by area and depth (0-6 in., 6-12 in., 12+ in., and combined depths (Table 3-7). No consistent statistical difference was observed for the primary COPECs (mercury, chromium, zinc, and lead) or other secondary COPECs (antimony, arsenic, cadmium, copper or nickel). The mean concentrations across all sampling depths for copper and lead in the shoal were significantly lower in 2009 compared to 2001-2003; copper was significantly higher in the site area. While there were no significant differences by depth strata between years for mercury and zinc, both mercury and zinc were significantly higher in the site area and lower in the shoal in 2009 when averaged across all sample depths. Given that few of the statistical comparisons demonstrated significant differences between the two sampling periods, the two data sets were combined to evaluate spatial and depth distribution of COPECs in tidal Wappinger Creek.

### 3.4.2 Depth and Spatial Distribution of Inorganic Constituents within Tidal Creek Sediments

Analysis of Variance (ANOVA) was used to evaluate the significance of variation of COPECs with depth and area within tidal Wappinger Creek for all 2001-2003 and 2009 samples combined. The statistical analyses were performed for constituents where concentrations were greater than the method detection limit in at least 50 percent of the 2001-2003 and 2009 samples. Also, excluding common nutrients, minerals, and constituents that were within the range of background (calcium, iron, manganese, magnesium, potassium, sodium, barium, beryllium, and cobalt), 8 inorganic constituents were statistically tested: arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc.

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Arsenic, chromium, lead, and mercury demonstrated significant differences with depth; mean concentrations of the shallow 0-6 in. samples were significantly less than deeper samples (Table 3-8). This pattern was reversed for nickel; that is, the highest mean concentration was in the 0-6 in. depth. Although the mean concentrations for cadmium, copper, and zinc were less in the surface sample the differences compared to deeper samples were not statistically significant. Although the 0-6 in. surface sediment may have significantly lower concentrations of some COPECs than deeper sediment, the surface concentrations still frequently exceed both the LEL and SEL sediment criteria particularly in the embayment and downstream shoal near the island. These data do not indicate burial of contaminated sediments by clean material during the period between 2003 and 2006. Sediments in the deeper, open water, main channel of tidal Wappinger Creek have relatively low concentrations of inorganic COPECs compared to sediment in the shallows adjacent to the channel which have dense growth of invasive water chestnut. It appears that accumulation of contaminated sediments in the channel is minimal, whereas, the densely vegetated shallows have served as a depositional area for inorganic COPECs in sediment.

ANOVA grouped areas (site, shoal, embayment, and downstream; Figure 3-3) were comparable based on statistically significant differences among mean concentrations using the t-statistic. For each constituent, this test generally identified two area groupings with considerable overlap among groups; the areas included in each group were not consistent across constituents (Table 3-9). Only one group was identified for arsenic; that is, there was no significant difference in mean concentration associated with location within tidal Wappinger Creek. The mean concentrations of lead formed one group consisting of the site, shoal, and embayment, versus a second group with significantly lower mean concentration in the downstream area. For other constituents, ANOVA typically discriminated areas into high and low mean concentration groups; generally, two areas were common to both the high and low concentration groups and the other two areas distinguishing the two groups. For example, the higher concentration group for mercury consisted of samples from the shoal, embayment, and the site while the lower concentration group was comprised of samples from downstream, the site, and embayment. The highest mean concentration of mercury occurred in the shoal, the lowest downstream, while the embayment and site were intermediate. Similar patterns were identified for other constituents; however, the relative sequence of the areas from highest to lowest concentration varied among constituents (Table 3-9). The embayment had the highest mean concentration (4 of 8 constituents [arsenic, chromium, copper, nickel]) or second highest mean concentration (4 of 8 constituents [cadmium, lead, mercury, and zinc]). The shoal had the highest mean concentration for three constituents (zinc, mercury, and cadmium). The area adjacent to the site was highest for lead. Thus, the embayment and adjacent shoal accounted for the highest mean concentrations of all constituents except lead.

### 3.4.3 Co-Location of Metal Contaminants

It is apparent from review of Tables 3-4 and 3-6 that the COPECs are generally co-located in tidal Wappinger Creek. The most severe sediment impacts occur in the embayment and the shallow shoals adjacent to the embayment and downstream to the vicinity of the island. These

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data indicate that a remedial action objective spatially focused on the primary COPECs (e.g., mercury and chromium) will effectively remediate all of the inorganic COPECs including arsenic, cadmium, lead, and zinc.

## 3.5 METHYLMERCURY COMPONENT OF TOTAL MERCURY

Selected samples collected in the embayment and adjacent shoal were analyzed for methylmercury as well as total mercury to provide information about relative availability and toxicity of sediment mercury to aquatic organisms. Methylmercury is generally more toxic and more readily available for uptake by aquatic organisms than inorganic mercury. In the samples analyzed, methylmercury, as a percent of total mercury, ranged from 0.002 percent to 0.053 percent and averaged approximately 0.018 percent (Table 3-10). Thus, virtually all of the sediment mercury is in the inorganic form and not readily available for uptake by aquatic organisms. This could be a factor contributing to the low concentrations of mercury observed in fish tissue collected from the tidal portion of Wappinger Creek (EA 2007).

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# 4. FINDINGS AND REMEDIAL ACTION OBJECTIVES

The results and findings of the supplemental sediment sampling performed in 2009 generally confirm and reinforce the findings of the RI (O'Brien and Gere Engineers, Inc. 2007a) for the Three Star Anodizing site OU2, tidal Wappinger Creek. The concentration and distribution of inorganic constituents of concern in sediments from the 2009 study are similar to observations from the 2001-2003 sediment sampling, including samples in excess of NYSDEC sediment guidelines for many inorganic constituents (Figures 3-1 and 3-2). The sources of these inorganic contaminants and pathways to aquatic biota and human receptors are unchanged from those identified by O'Brien and Gere Engineers, Inc. (2007a). Statistical comparison of COPECs from the 2001-2003 and the 2009 sediment samples demonstrated no significant changes during the 6-8 intervening years. The COPECs identified by O'Brien and Gere Engineers, Inc. (2007a) are consistent with the results of the supplemental 2009 sediment sampling. Given these conditions, the FWIA and qualitative human health risk findings by O'Brien and Gere Engineers, Inc. (2007b) are considered to still be appropriate and applicable. Thus, concentrations of inorganic constituents in sediments of tidal Wappinger Creek have the potential to adversely affect aquatic biota and recreational users of this reach of the creek. Furthermore, resuspension of Wappinger Creek sediments is a potential source of inorganic constituents to the Hudson River. Sediments in the main channel of the creek are likely more at risk of resuspension than sediments within the embayment which are protected from higher flows in the creek.

The objective of any remedial action undertaken on tidal Wappinger Creek would be to reduce or eliminate the risk to aquatic biota and human users from sediment as a source of inorganic COPECs. A selected remedial action would be designed to eliminate or minimize the pathway of COPECs from sources at the Three Star Anodizing site via creek sediments to target aquatic and human receptors. This could be accomplished by removal (e.g., dredging) of contaminated sediment, capping contaminated sediment in place, physical or chemical stabilization, or a combination of these methods.

Downstream of the site, sediments in the open main channel of the creek have relatively low concentrations of any inorganic COPECs; however, high concentrations of COPECs have been observed in many shallow depositional areas. These shallow depositional areas are characterized by lower water velocities and dense vegetation which appear to have facilitated the stabilization of the deposits of inorganic constituents in these more quiescent areas. While some minor variation in distribution and concentration of inorganic sediment constituents was observed, overall sediment conditions have changed little between 2001 and 2009. The highest concentrations above the SEL sediment guidelines occur throughout the embayment, on the shallows to the north and south side of the channel downstream of the embayment to the island, and upstream adjacent to the Three Star Anodizing Site.

Any remedial action objective evaluated would need to consider rare or state-listed animals and plants, significant natural communities, and other significant habitat that could be affected. The New York Natural Heritage Program (NYNHP 2009) provided information on sensitive species,

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communities, and habitat that could potentially exist in the vicinity of tidal Wappinger Creek (29 December 2009). Included on the list were freshwater tidal marsh and mudflats at the mouth of Wappinger Creek; the entire tidal reach of Wappinger Creek is identified as an anadromous fish concentration area. Although not specifically listed, the embayment consists of freshwater tidal marsh and mud flats with a narrow upland buffer similar to that described by NYNHP at the mouth of the creek. The area is also designated Significant Coastal Fish and Wildlife Habitat that is subject to the Coastal Management Program administered by the New York State Department of State. Evaluation of remedial action options should also consider the extensive growth of invasive water chestnut throughout the shallow portions of most of the tidal creek. Consequently, remedial actions considered would require review by the following state agencies: NYNHP, NYSDEC Region 3 Wildlife Manager, NYSDEC Hudson River Fisheries Unit, and New York State Department of State. In addition, any sediment dredging or capping action would require a Joint Permit Application to NYSDEC and U.S. Army Corps of Engineers.

Based on the integrated results from studies of sediment and aquatic biota tissue from Wappinger Creek conducted between 2001 and 2009, it is appropriate to proceed with a Focused Feasibility Study (FS) for OU2. The following Remedial Action Objectives (RAOs) are proposed for consideration in the FS:

- Eliminate, to the extent practicable, adverse impacts to fish and wildlife resources from contaminated sediment in Wappinger Creek

- Eliminate, to the extent practicable, contaminated Wappinger Creek sediment as a source of contamination to surface water in tidal Wappinger Creek

- Eliminate, to the extent practicable, adverse impact to recreational users of Wappinger Creek from contact with contaminated sediment

- Eliminate, to the extent practicable, contaminated Wappinger Creek sediment as a source of contamination to the Hudson River.

Potential remedial measure proposed for evaluation to address these RAOs for tidal Wappinger Creek with particular emphasis on the embayment and shallow vegetated shoals include:

- No action
- Capping/physical stabilization of sediment in place
- Chemical stabilization of sediment in place
- Dredge sediments and restore freshwater tidal marsh or intertidal habitat.

The no action alternative uses existing conditions as a baseline for comparison and evaluation of beneficial and adverse effects of proposed remedial actions at a given location. Any remedial action evaluated should also consider the status of remediation and removal of sources of inorganic constituents at the Three Star Anodizing site and the status of potential sources

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associated with the Market Street Industrial Park on the opposite side of Wappinger Creek from Three Star Anodizing. If upland soils and groundwater associated with this site are still active sources of inorganic COPECs to Wappinger Creek sediments, then the benefits of proposed remedial actions in OU2 could be negated over time.

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**Figure 1-1. Vicinity Map**

Three Star Anodizing Site, Wappinger Creek, NY

0 1 2 Miles

N W E S

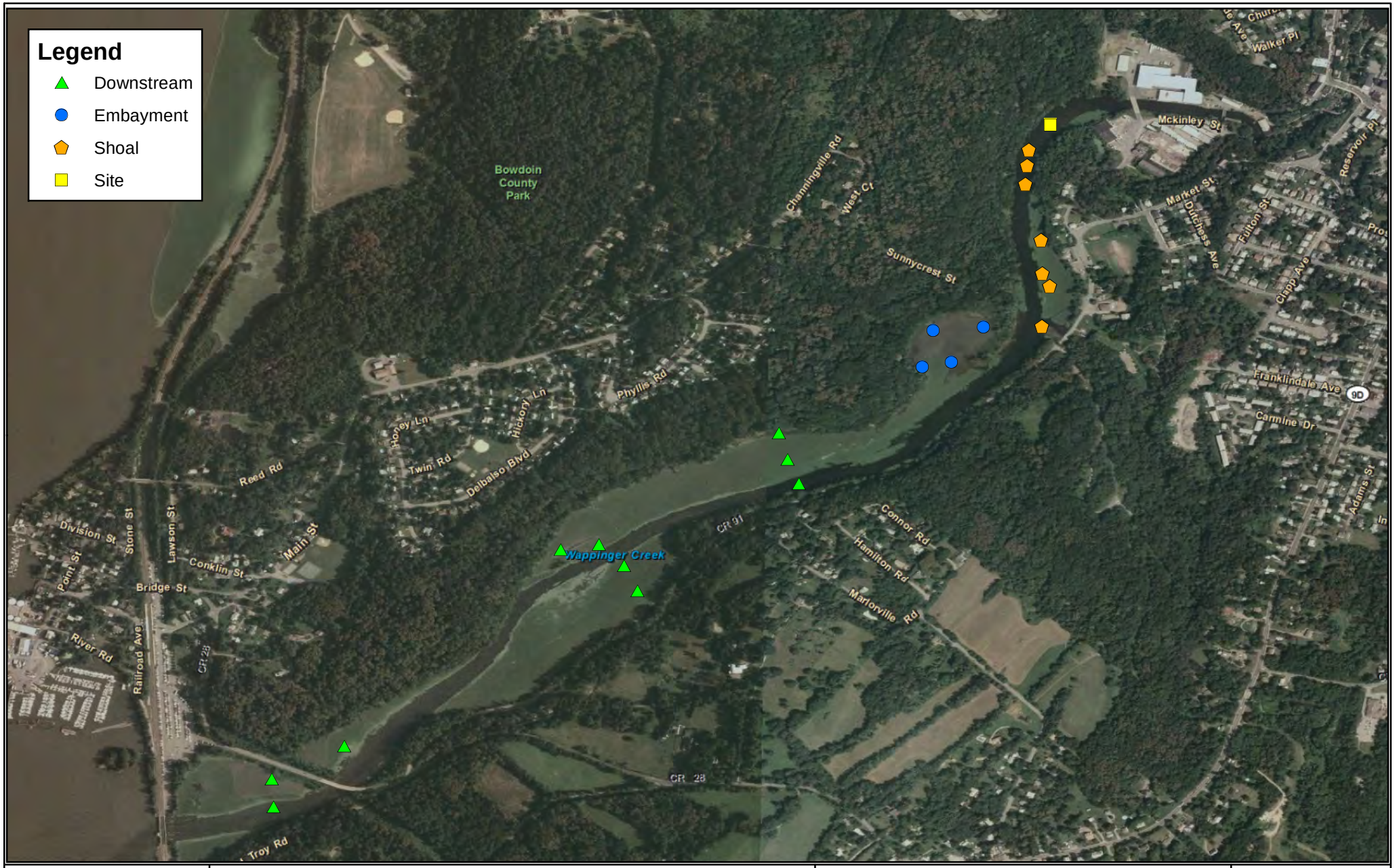


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**Figure 1-2. Selected 2001/03 Sample Locations**

Three Star Anodizing Site, Wappinger Creek, NY

0 0.125 0.25 Miles

N W E S

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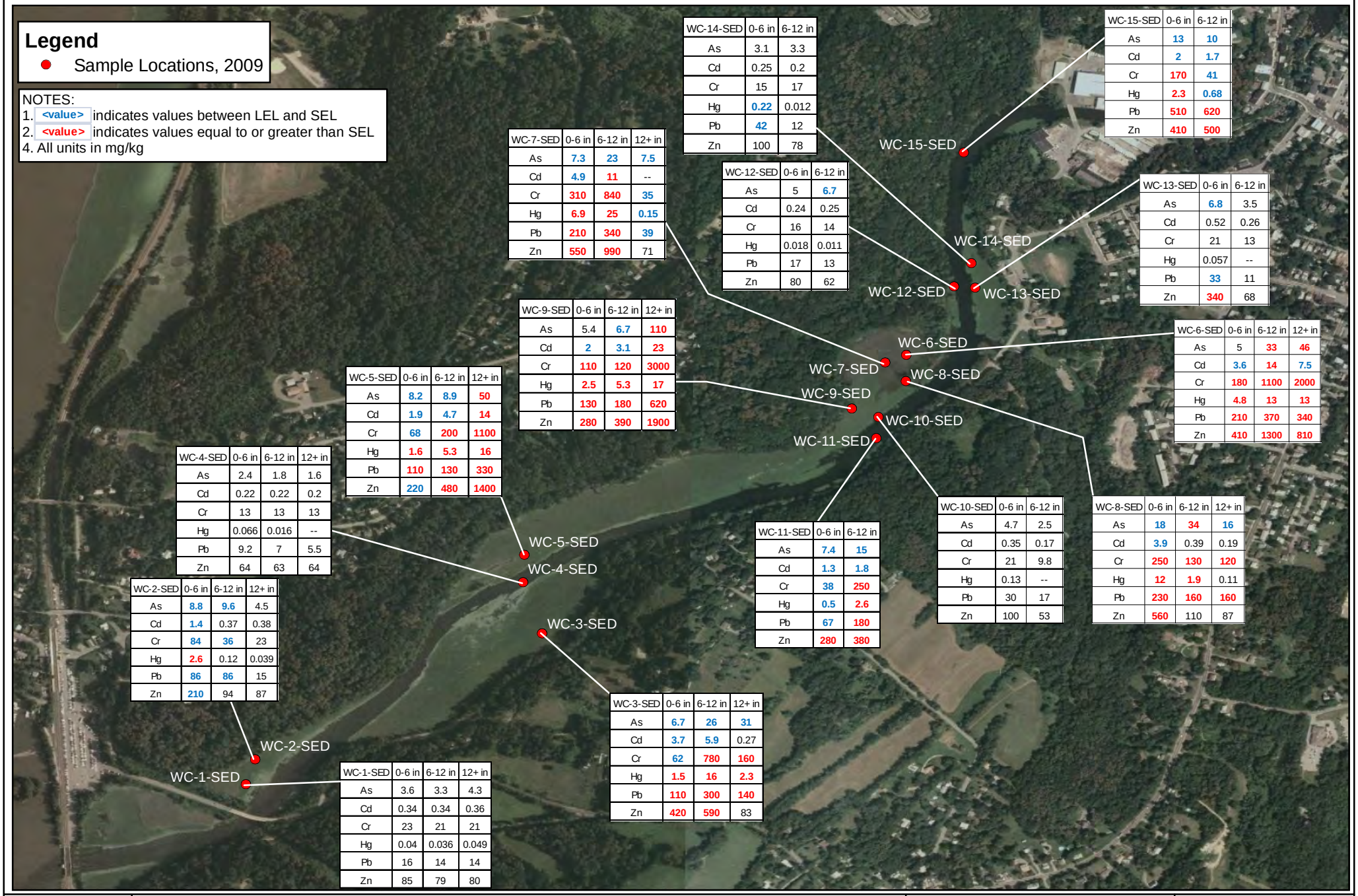
**Figure 2-1. 2009 Sample Locations**

Three Star Anodizing Site, Wappinger Creek, NY

0 0.1 0.2 Miles

N W E S




| WC-15-SED | 0-6 in | 6-12 in |
|---|---|---|
| As | 13 | 10 |
| Cd | 2 | 1.7 |
| Cr | 170 | 41 |
| Hg | 2.3 | 0.68 |
| Pb | 510 | 620 |
| Zn | 410 | 500 |

| WC-14-SED | 0-6 in | 6-12 in |
|---|---|---|
| As | 3.1 | 3.3 |
| Cd | 0.25 | 0.2 |
| Cr | 15 | 17 |
| Hg | 0.22 | 0.012 |
| Pb | 42 | 12 |
| Zn | 100 | 78 |

| WC-13-SED | 0-6 in | 6-12 in |
|---|---|---|
| As | 6.8 | 3.5 |
| Cd | 0.52 | 0.26 |
| Cr | 21 | 13 |
| Hg | 0.057 | -- |
| Pb | 33 | 11 |
| Zn | 340 | 68 |

| WC-12-SED | 0-6 in | 6-12 in |
|---|---|---|
| As | 5 | 6.7 |
| Cd | 0.24 | 0.25 |
| Cr | 16 | 14 |
| Hg | 0.018 | 0.011 |
| Pb | 17 | 13 |
| Zn | 80 | 62 |

| WC-7-SED | 0-6 in | 6-12 in | 12+ in |
|---|---|---|---|
| As | 7.3 | 23 | 7.5 |
| Cd | 4.9 | 11 | -- |
| Cr | 310 | 840 | 35 |
| Hg | 6.9 | 25 | 0.15 |
| Pb | 210 | 340 | 39 |
| Zn | 550 | 990 | 71 |

| WC-6-SED | 0-6 in | 6-12 in | 12+ in |
|---|---|---|---|
| As | 5 | 33 | 46 |
| Cd | 3.6 | 14 | 7.5 |
| Cr | 180 | 1100 | 2000 |
| Hg | 4.8 | 13 | 13 |
| Pb | 210 | 370 | 340 |
| Zn | 410 | 1300 | 810 |

| WC-9-SED | 0-6 in | 6-12 in | 12+ in |
|---|---|---|---|
| As | 5.4 | 6.7 | 110 |
| Cd | 2 | 3.1 | 23 |
| Cr | 110 | 120 | 3000 |
| Hg | 2.5 | 5.3 | 17 |
| Pb | 130 | 180 | 620 |
| Zn | 280 | 390 | 1900 |

| WC-5-SED | 0-6 in | 6-12 in | 12+ in |
|---|---|---|---|
| As | 8.2 | 8.9 | 50 |
| Cd | 1.9 | 4.7 | 14 |
| Cr | 68 | 200 | 1100 |
| Hg | 1.6 | 5.3 | 16 |
| Pb | 110 | 130 | 330 |
| Zn | 220 | 480 | 1400 |

| WC-4-SED | 0-6 in | 6-12 in | 12+ in |
|---|---|---|---|
| As | 2.4 | 1.8 | 1.6 |
| Cd | 0.22 | 0.22 | 0.2 |
| Cr | 13 | 13 | 13 |
| Hg | 0.066 | 0.016 | -- |
| Pb | 9.2 | 7 | 5.5 |
| Zn | 64 | 63 | 64 |

| WC-11-SED | 0-6 in | 6-12 in |
|---|---|---|
| As | 7.4 | 15 |
| Cd | 1.3 | 1.8 |
| Cr | 38 | 250 |
| Hg | 0.5 | 2.6 |
| Pb | 67 | 180 |
| Zn | 280 | 380 |

| WC-10-SED | 0-6 in | 6-12 in |
|---|---|---|
| As | 4.7 | 2.5 |
| Cd | 0.35 | 0.17 |
| Cr | 21 | 9.8 |
| Hg | 0.13 | -- |
| Pb | 30 | 17 |
| Zn | 100 | 53 |

| WC-8-SED | 0-6 in | 6-12 in | 12+ in |
|---|---|---|---|
| As | 18 | 34 | 16 |
| Cd | 3.9 | 0.39 | 0.19 |
| Cr | 250 | 130 | 120 |
| Hg | 12 | 1.9 | 0.11 |
| Pb | 230 | 160 | 160 |
| Zn | 560 | 110 | 87 |

| WC-2-SED | 0-6 in | 6-12 in | 12+ in |
|---|---|---|---|
| As | 8.8 | 9.6 | 4.5 |
| Cd | 1.4 | 0.37 | 0.38 |
| Cr | 84 | 36 | 23 |
| Hg | 2.6 | 0.12 | 0.039 |
| Pb | 86 | 86 | 15 |
| Zn | 210 | 94 | 87 |

| WC-3-SED | 0-6 in | 6-12 in | 12+ in |
|---|---|---|---|
| As | 6.7 | 26 | 31 |
| Cd | 3.7 | 5.9 | 0.27 |
| Cr | 62 | 780 | 160 |
| Hg | 1.5 | 16 | 2.3 |
| Pb | 110 | 300 | 140 |
| Zn | 420 | 590 | 83 |

| WC-1-SED | 0-6 in | 6-12 in | 12+ in |
|---|---|---|---|
| As | 3.6 | 3.3 | 4.3 |
| Cd | 0.34 | 0.34 | 0.36 |
| Cr | 23 | 21 | 21 |
| Hg | 0.04 | 0.036 | 0.049 |
| Pb | 16 | 14 | 14 |
| Zn | 85 | 79 | 80 |

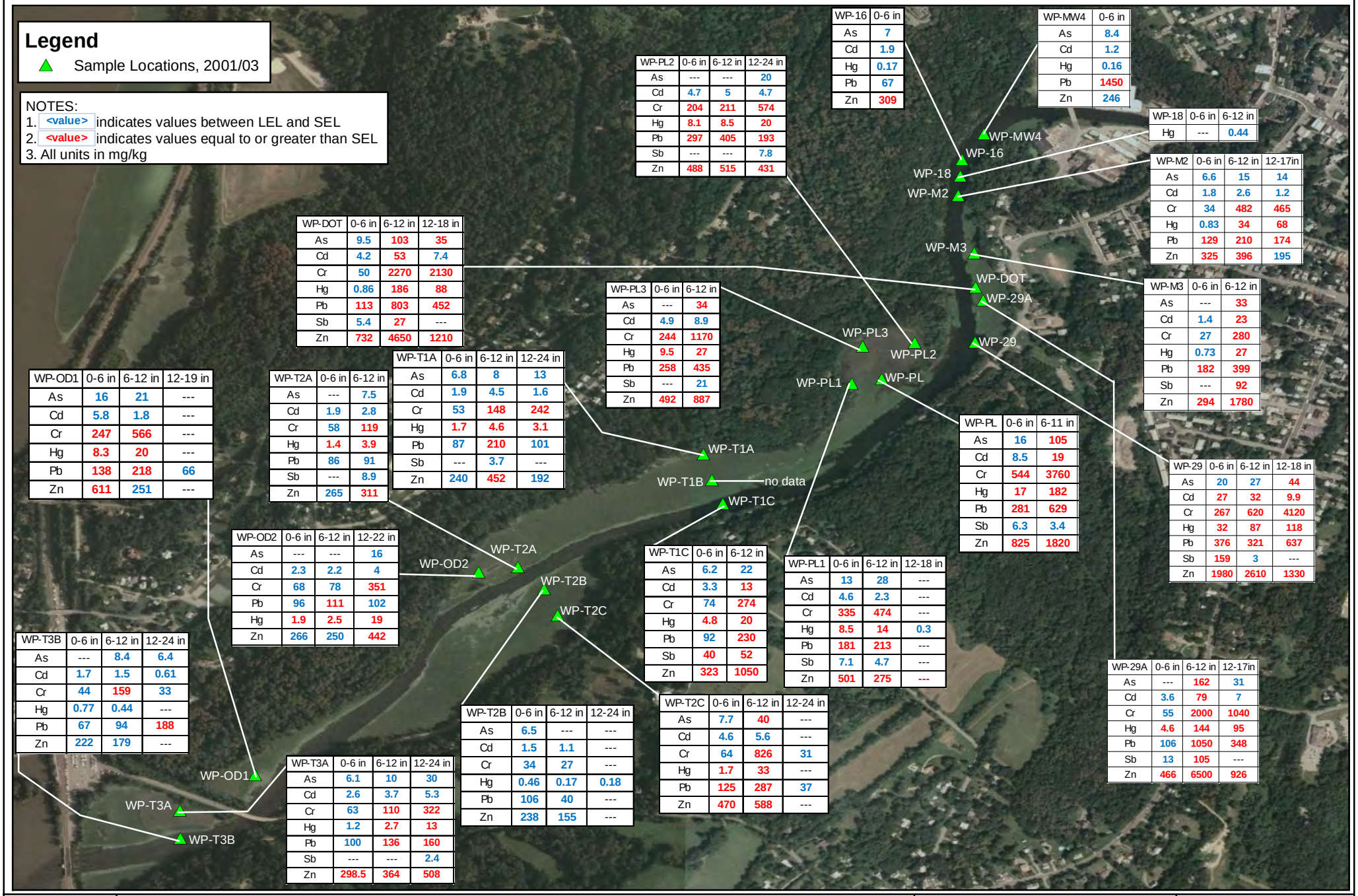
EA Engineering, Science, and Technology, Inc.

**Figure 3-1. Concentrations of Selected Metals in Sediment Samples, 2009**

Three Star Anodizing Site, Wappinger Creek, NY

0 0.125 0.25 Miles

N W E S




| WP-16 | 0-6 in |
|---|---|
| As | 7 |
| Cd | 1.9 |
| Hg | 0.17 |
| Pb | 67 |
| Zn | 309 |

| WP-MW4 | 0-6 in |
|---|---|
| As | 8.4 |
| Cd | 1.2 |
| Hg | 0.16 |
| Pb | 1450 |
| Zn | 246 |

| WP-PL2 | 0-6 in | 6-12 in | 12-24 in |
|---|---|---|---|
| As | --- | --- | 20 |
| Cd | 4.7 | 5 | 4.7 |
| Cr | 204 | 211 | 574 |
| Hg | 8.1 | 8.5 | 20 |
| Pb | 297 | 405 | 193 |
| Sb | --- | --- | 7.8 |
| Zn | 488 | 515 | 431 |

| WP-18 | 0-6 in | 6-12 in |
|---|---|---|
| Hg | --- | 0.44 |

| WP-M2 | 0-6 in | 6-12 in | 12-17in |
|---|---|---|---|
| As | 6.6 | 15 | 14 |
| Cd | 1.8 | 2.6 | 1.2 |
| Cr | 34 | 482 | 465 |
| Hg | 0.83 | 34 | 68 |
| Pb | 129 | 210 | 174 |
| Zn | 325 | 396 | 195 |

| WP-DOT | 0-6 in | 6-12 in | 12-18 in |
|---|---|---|---|
| As | 9.5 | 103 | 35 |
| Cd | 4.2 | 53 | 7.4 |
| Cr | 50 | 2270 | 2130 |
| Hg | 0.86 | 186 | 88 |
| Pb | 113 | 803 | 452 |
| Sb | 5.4 | 27 | --- |
| Zn | 732 | 4650 | 1210 |

| WP-PL3 | 0-6 in | 6-12 in |
|---|---|---|
| As | --- | 34 |
| Cd | 4.9 | 8.9 |
| Cr | 244 | 1170 |
| Hg | 9.5 | 27 |
| Pb | 258 | 435 |
| Sb | --- | 21 |
| Zn | 492 | 887 |

| WP-M3 | 0-6 in | 6-12 in |
|---|---|---|
| As | --- | 33 |
| Cd | 1.4 | 23 |
| Cr | 27 | 280 |
| Hg | 0.73 | 27 |
| Pb | 182 | 399 |
| Sb | --- | 92 |
| Zn | 294 | 1780 |

| WP-OD1 | 0-6 in | 6-12 in | 12-19 in |
|---|---|---|---|
| As | 16 | 21 | --- |
| Cd | 5.8 | 1.8 | --- |
| Cr | 247 | 566 | --- |
| Hg | 8.3 | 20 | --- |
| Pb | 138 | 218 | 66 |
| Zn | 611 | 251 | --- |

| WP-T2A | 0-6 in | 6-12 in |
|---|---|---|
| As | --- | 7.5 |
| Cd | 1.9 | 2.8 |
| Cr | 58 | 119 |
| Hg | 1.4 | 3.9 |
| Pb | 86 | 91 |
| Sb | --- | 8.9 |
| Zn | 265 | 311 |

| WP-T1A | 0-6 in | 6-12 in | 12-24 in |
|---|---|---|---|
| As | 6.8 | 8 | 13 |
| Cd | 1.9 | 4.5 | 1.6 |
| Cr | 53 | 148 | 242 |
| Hg | 1.7 | 4.6 | 3.1 |
| Pb | 87 | 210 | 101 |
| Sb | --- | 3.7 | --- |
| Zn | 240 | 452 | 192 |

| WP-PL | 0-6 in | 6-11 in |
|---|---|---|
| As | 16 | 105 |
| Cd | 8.5 | 19 |
| Cr | 544 | 3760 |
| Hg | 17 | 182 |
| Pb | 281 | 629 |
| Sb | 6.3 | 3.4 |
| Zn | 825 | 1820 |

| WP-29 | 0-6 in | 6-12 in | 12-18 in |
|---|---|---|---|
| As | 20 | 27 | 44 |
| Cd | 27 | 32 | 9.9 |
| Cr | 267 | 620 | 4120 |
| Hg | 32 | 87 | 118 |
| Pb | 376 | 321 | 637 |
| Sb | 159 | 3 | --- |
| Zn | 1980 | 2610 | 1330 |

| WP-OD2 | 0-6 in | 6-12 in | 12-22 in |
|---|---|---|---|
| As | --- | --- | 16 |
| Cd | 2.3 | 2.2 | 4 |
| Cr | 68 | 78 | 351 |
| Pb | 96 | 111 | 102 |
| Hg | 1.9 | 2.5 | 19 |
| Zn | 266 | 250 | 442 |

| WP-T1C | 0-6 in | 6-12 in |
|---|---|---|
| As | 6.2 | 22 |
| Cd | 3.3 | 13 |
| Cr | 74 | 274 |
| Hg | 4.8 | 20 |
| Pb | 92 | 230 |
| Sb | 40 | 52 |
| Zn | 323 | 1050 |

| WP-PL1 | 0-6 in | 6-12 in | 12-18 in |
|---|---|---|---|
| As | 13 | 28 | --- |
| Cd | 4.6 | 2.3 | --- |
| Cr | 335 | 474 | --- |
| Hg | 8.5 | 14 | 0.3 |
| Pb | 181 | 213 | --- |
| Sb | 7.1 | 4.7 | --- |
| Zn | 501 | 275 | --- |

| WP-29A | 0-6 in | 6-12 in | 12-17in |
|---|---|---|---|
| As | --- | 162 | 31 |
| Cd | 3.6 | 79 | 7 |
| Cr | 55 | 2000 | 1040 |
| Hg | 4.6 | 144 | 95 |
| Pb | 106 | 1050 | 348 |
| Sb | 13 | 105 | --- |
| Zn | 466 | 6500 | 926 |

| WP-T3B | 0-6 in | 6-12 in | 12-24 in |
|---|---|---|---|
| As | --- | 8.4 | 6.4 |
| Cd | 1.7 | 1.5 | 0.61 |
| Cr | 44 | 159 | 33 |
| Hg | 0.77 | 0.44 | --- |
| Pb | 67 | 94 | 188 |
| Zn | 222 | 179 | --- |

| WP-T2B | 0-6 in | 6-12 in | 12-24 in |
|---|---|---|---|
| As | 6.5 | --- | --- |
| Cd | 1.5 | 1.1 | --- |
| Cr | 34 | 27 | --- |
| Hg | 0.46 | 0.17 | 0.18 |
| Pb | 106 | 40 | --- |
| Zn | 238 | 155 | --- |

| WP-T2C | 0-6 in | 6-12 in | 12-24 in |
|---|---|---|---|
| As | 7.7 | 40 | --- |
| Cd | 4.6 | 5.6 | --- |
| Cr | 64 | 826 | 31 |
| Hg | 1.7 | 33 | --- |
| Pb | 125 | 287 | 37 |
| Zn | 470 | 588 | --- |

| WP-T3A | 0-6 in | 6-12 in | 12-24 in |
|---|---|---|---|
| As | 6.1 | 10 | 30 |
| Cd | 2.6 | 3.7 | 5.3 |
| Cr | 63 | 110 | 322 |
| Hg | 1.2 | 2.7 | 13 |
| Pb | 100 | 136 | 160 |
| Sb | --- | --- | 2.4 |
| Zn | 298.5 | 364 | 508 |

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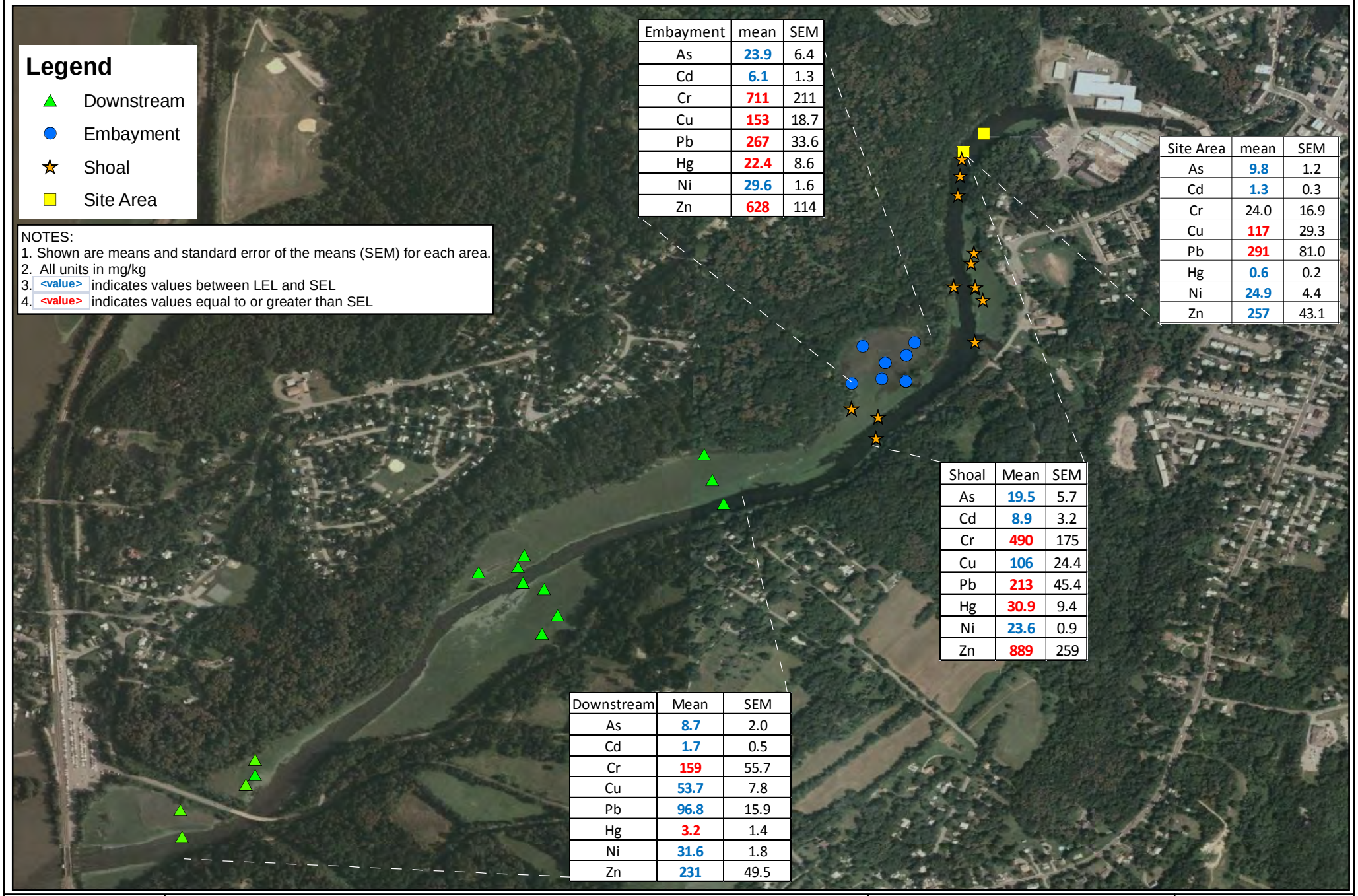
**Figure 3-2. Concentrations of Selected Metals in Sediment Samples, 2001/03**

Three Star Anodizing Site, Wappinger Creek, NY

0 0.125 0.25 Miles

N W E S




| Embayment | mean | SEM |
|---|---|---|
| As | 23.9 | 6.4 |
| Cd | 6.1 | 1.3 |
| Cr | 711 | 211 |
| Cu | 153 | 18.7 |
| Pb | 267 | 33.6 |
| Hg | 22.4 | 8.6 |
| Ni | 29.6 | 1.6 |
| Zn | 628 | 114 |

| Site Area | mean | SEM |
|---|---|---|
| As | 9.8 | 1.2 |
| Cd | 1.3 | 0.3 |
| Cr | 24.0 | 16.9 |
| Cu | 117 | 29.3 |
| Pb | 291 | 81.0 |
| Hg | 0.6 | 0.2 |
| Ni | 24.9 | 4.4 |
| Zn | 257 | 43.1 |

| Shoal | Mean | SEM |
|---|---|---|
| As | 19.5 | 5.7 |
| Cd | 8.9 | 3.2 |
| Cr | 490 | 175 |
| Cu | 106 | 24.4 |
| Pb | 213 | 45.4 |
| Hg | 30.9 | 9.4 |
| Ni | 23.6 | 0.9 |
| Zn | 889 | 259 |

| Downstream | Mean | SEM |
|---|---|---|
| As | 8.7 | 2.0 |
| Cd | 1.7 | 0.5 |
| Cr | 159 | 55.7 |
| Cu | 53.7 | 7.8 |
| Pb | 96.8 | 15.9 |
| Hg | 3.2 | 1.4 |
| Ni | 31.6 | 1.8 |
| Zn | 231 | 49.5 |

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**Figure 3-3. Comparison of Mean Metal Concentrations by Area**

Three Star Anodizing Site, Wappinger Creek, NY

0 0.125 0.25 Miles

N W E S

# TABLE 3-1 FIELD WATER QUALITY DATA RECORDED DURING SEDIMENT COLLECTIONS ON TIDAL WAPPINGER CREEK, OCTOBER 2009

| Station | Date | Time | Temperature (°C) | Conductivity (mS/cm) | Salinity (ppt) | Dissolved Oxygen (mg/L) | pH | Turbidity (NTU) |
|---|---|---|---|---|---|---|---|---|
| WC-1 | 10/7/2009 | 1014 | 16.59 | 0.363 | 0.21 | 8.16 | 7.92 | 22.3 |
| WC-2 | 10/7/2009 | 1035 | 17.7 | 0.316 | 0.18 | 8.29 | 7.83 | 34 |
| WC-3 | 10/7/2009 | 1118 | 16.24 | 0.364 | 0.21 | 9.41 | 7.56 | 19.1 |
| WC-4 | 10/8/2009 | 1035 | 14.26 | 0.437 | 0.27 | 8.24 | 7.8 | 3 |
| WC-5 | 10/8/2009 | 1118 | 14.85 | 0.473 | 0.28 | 8.92 | 7.91 | 3.3 |
| WC-6 | 10/7/2009 | 1601 | 16.07 | 0.413 | 0.24 | 9.92 | 7.91 | 18.8 |
| WC-7 | 10/7/2009 | 1638 | 16.04 | 0.408 | 0.24 | 9.5 | 7.96 | 17.2 |
| WC-8 | 10/8/2009 | 1336 | 14.85 | 0.474 | 0.29 | 9.44 | 7.63 | 2.3 |
| WC-9 | 10/8/2009 | 1405 | 15.3 | 0.483 | 0.29 | 9.72 | 7.92 | 2 |
| WC-10 | 10/8/2009 | 955 | 14.63 | 0.461 | 0.28 | 10.14 | 8.18 | 15.6 |
| WC-11 | 10/8/2009 | 1225 | 14.5 | 0.469 | 0.29 | 9.28 | 7.9 | 2.6 |
| WC-12 | 10/8/2009 | 1525 | 14.7 | 0.486 | 0.29 | 9.97 | 8.01 | 2.6 |
| WC-13 | 10/8/2009 | 913 | 14.95 | 0.46 | 0.28 | 9.6 | 8.22 | 3.4 |
| WC-14 | 10/8/2009 | 846 | 14.45 | 0.453 | 0.28 | 9.56 | 8.04 | 13.7 |
| WC-15 | 10/8/2009 | 814 | 14.67 | 0.456 | 0.28 | 10.65 | 8.16 | 3.9 |

# TABLE 3-2 RESULTS OF SEDIMENT GRAIN SIZE ANALYSIS (STANDARD SIEVE/HYDROMETER) FOR SELECTED SAMPLES FROM WAPPINGER CREEK, OCTOBER 2009

| Metric | Sieve Size – Percent Passing Sieve | | | | | | | | | | | | | Hydrometer | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 38.1 mm | 25.4 mm | 19 mm | 12.7 mm | 9.5 mm | 6.3 mm | 4.8 mm | 2 mm | 0.59 mm | 0.425 mm | 0.25 mm | 0.15 mm | 0.074 mm | 0.01 mm | 0.001 mm |
| English | 1 ½ in. | 1 in. | ¾ in. | ½ in. | 3/8 in. | ¼ in. | #4 | #10 | #30 | #40 | #60 | #100 | #200 | | |
| Sample | Gravel | | | | | | | Sand | | | | | | Silt-Clay | |
| WC-1-SED-AB | | 100 | 98.6 | 97.8 | 97.7 | 97.5 | 97.3 | 95.2 | 88.2 | 84.9 | 79.6 | 74.6 | 69.4 | 47 | 10 |
| WC-3-SED-AB | | | | 100 | 98.5 | 98.2 | 98.1 | 97.1 | 89.6 | 86.3 | 80.8 | 72.7 | 54.2 | 12 | 5 |
| WC-7-SED-AB | | | 100 | 99.8 | 99.5 | 99.3 | 98.9 | 96.9 | 86.7 | 82.2 | 74.7 | 66.3 | 51.4 | 13 | 4 |
| WC-14-SED-AB | 100 | 94.6 | 78.8 | 58.7 | 52.2 | 43.2 | 37.3 | 23.7 | 9 | 5.7 | 3.2 | 2.5 | 1.9 | <1 | <1 |
| WC-15-SED-AB | 100 | 96.8 | 89.3 | 59.3 | 49 | 36.8 | 31.3 | 18.7 | 7.3 | 5.6 | 4.2 | 3.5 | 2.9 | 2 | <1 |

# TABLE 3-3 NYSDEC SEDIMENT SCREENING VALUES AND WAPPINGER CREEK BACKGROUND SEDIMENT CONCENTRATIONS FOR INORGANIC CONSTITUENTS

| Constituent | LEL | SEL | Background | |
|---|---|---|---|---|
| | | | Minimum | Maximum |
| Aluminum (Al) | -- | -- | 11,400 | 19,200 |
| Antimony (Sb) | 2 | 25 | -- | 3.2J |
| Arsenic (As) | 6 | 33 | 4.0BJ | 6.3BL |
| Barium (Ba) | -- | -- | 73J | 120BJ |
| Beryllium (Be) | -- | -- | 0.42J | 0.86BJ |
| Cadmium (Cd) | 0.6 | 9 | 0.16J | 1.4BJ |
| Calcium (Ca) | -- | -- | 5,350J | 18,800J |
| Chromium (Cr) | 26 | 110 | 15J | 27J |
| Cobalt (Co) | -- | -- | 6.5J | 14.0J |
| Copper (Cu) | 16 | 110 | 30J | 90J |
| Iron (Fe) | 2% | 4% | 2.4%J | 3.3%J |
| Lead (Pb) | 31 | 110 | 41J | 187J |
| Magnesium (Mg) | -- | -- | 5,540J | 8,700J |
| Manganese (Mn) | 460 | 1,100 | 460J | 1,000J |
| Mercury (Hg) | 0.15 | 1.3 | 0.21J | 0.57J |
| Nickel (Ni) | 16 | 50 | 22J | 33J |
| Potassium (K) | -- | -- | 852J | 1,740BJ |
| Selenium (Se) | -- | -- | 1.2J | 2.5J |
| Silver (Ag) | 1 | 2.2 | -- | -- |
| Sodium (Na) | -- | -- | 62J | 386BJ |
| Thallium (Tl) | -- | -- | -- | -- |
| Vanadium (Vn) | -- | -- | 18J | 38BJ |
| Zinc (Zn) | 120 | 270 | 132J | 359J |
| Cyanide (CN) | 0.1 | -- | -- | 3.2J |

Yellow indicates background greater than the LEL screening value.
Tan indicates background greater than the SEL screening value.

NOTE: Dashes (--) indicate no data.
SEL = Severe effect level.
LEL = Lowest effect level.

# TABLE 3-4 ANALYTICAL RESULTS FOR TARGET ANALYTE LIST METALS, CYANIDE, TOTAL MERCURY, AND METHYLMERCURY (µg/Kg) FOR SAMPLES COLLECTED FROM TIDAL WAPPINGER CREEK, OCTOBER 2009

| Screening Value | Parameter (mg/Kg) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe (%) | Pb | Mg | Mn | Hg | Hg (E) | MeHg (µg/Kg) | Ni | K | Se | Ag | Na | Tl | Vn | Zn | Zn (E) | CN | Moisture (%) |
| LEL | -- | 2 | 6 | -- | -- | 0.6 | -- | 26 | -- | 16 | 2% | 31 | -- | 460 | 0.15 | 0.15 | -- | 16 | -- | -- | 1 | -- | -- | -- | 120 | 120 | 0.1 | -- |
| SEL | -- | 25 | 33 | -- | -- | 9 | -- | 110 | -- | 110 | 4% | 110 | -- | 1100 | 1.3 | 1.3 | -- | 50 | -- | -- | 2.2 | -- | -- | -- | 270 | 270 | -- | -- |
| Background Min | 11400 | -- | 4 | 73 | 0.42 | 0.16 | 5350 | 15 | 6.5 | 30 | 2.4% | 41 | 5540 | 460 | 0.21 | 0.21 | -- | 22 | 852 | 1.2 | -- | 62 | -- | 18 | 132 | 132 | -- | -- |
| Background Max | 19200 | 3.2 | 6.3 | 120 | 0.86 | 1.4 | 18800 | 27 | 14 | 90 | 3.3% | 187 | 8700 | 1000 | 0.57 | 0.57 | -- | 33 | 1740 | 2.5 | -- | 386 | -- | 38 | 359 | 359 | 3.2 | -- |
| **Sample** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WC-1-SED-A | 16000 | -- | 3.6 | 69 | 0.73 | 0.34 | 3000 | 23 | 12 | 18 | 2.6 | 16 | 6000 | 290 | 0.04 | NA | NA | 27 | 1500 | 0.48 | -- | 160 | -- | 22 | 85 | NA | -- | 45.7 |
| WC-1-SED-B | 14000 | -- | 3.3 | 61 | 0.71 | 0.34 | 3100 | 21 | 11 | 18 | 2.3 | 14 | 5500 | 260 | 0.036 | NA | NA | 25 | 1500 | 0.53 | -- | 190 | -- | 22 | 79 | NA | -- | 50.5 |
| WC-1-SED-C | 14000 | -- | 4.3 | 51 | 0.71 | 0.36 | 3200 | 21 | 13 | 18 | 2.4 | 14 | 5600 | 260 | 0.049 | NA | NA | 26 | 1500 | -- | -- | 200 | -- | 21 | 80 | NA | -- | 50.6 |
| WC-2-SED-A | 14000 | -- | 8.8 | 81 | 0.63 | 1.4 | 6300 | 84 | 16 | 69 | 2.7 | 86 | 6600 | 500 | 2.6 | NA | NA | 30 | 1400 | -- | -- | 150 | -- | 23 | 210 | NA | -- | 72.9 |
| WC-2-SED-B | 18000 | -- | 9.6 | 88 | 0.84 | 0.37 | 3600 | 36 | 14 | 31 | 2.9 | 86 | 6600 | 420 | 0.12 | NA | NA | 29 | 1600 | 0.58 | -- | 150 | -- | 24 | 94 | NA | -- | 51.9 |
| WC-2-SED-C | 15000 | -- | 4.5 | 59 | 0.73 | 0.38 | 3000 | 23 | 13 | 19 | 3.1 | 15 | 6100 | 380 | 0.039 | NA | NA | 29 | 1800 | -- | -- | 160 | -- | 22 | 87 | NA | -- | 54.4 |
| WC-3-SED-A | 12000 | -- | 6.7 | 67 | 0.55 | 3.7 | 6400 | 62 | 18 | 88 | 2.5 | 110 | 6400 | 430 | 1.5 | NA | NA | 38 | 1100 | -- | -- | 150 | -- | 26 | 420 | NA | -- | 69.1 |
| WC-3-SED-B | 12000 | 5.1 | 26 | 63 | 0.55 | 5.9 | 4500 | 780 | 13 | 140 | 2.3 | 300 | 5400 | 320 | 16 | 56 | NA | 27 | 1100 | 0.83 | -- | 130 | -- | 20 | 590 | NA | -- | 51.9 |
| WC-3-SED-C | 15000 | -- | 31 | 65 | 0.59 | 0.27 | 3100 | 160 | 11 | 77 | 2.4 | 140 | 5800 | 310 | 2.3 | NA | NA | 23 | 1100 | 0.64 | -- | 150 | -- | 17 | 83 | NA | -- | 49.1 |
| WC-4-SED-A | 9500 | -- | 2.4 | 24 | 0.26 | 0.22 | 1600 | 13 | 8.9 | 9.4 | 2.2 | 9.2 | 5000 | 250 | 0.066 | NA | NA | 18 | 710 | -- | -- | 51 | -- | 10 | 64 | NA | -- | 22.1 |
| WC-4-SED-B | 11000 | -- | 1.8 | 30 | 0.34 | 0.22 | 1500 | 13 | 9.9 | 9 | 2.4 | 7 | 5800 | 260 | 0.016 | NA | NA | 20 | 900 | 0.4 | -- | 82 | -- | 12 | 63 | NA | -- | 35.2 |
| WC-4-SED-C | 11000 | -- | 1.6 | 28 | -- | 0.2 | 1100 | 13 | 9.9 | 7.9 | 2.5 | 5.5 | 6000 | 260 | -- | NA | NA | 21 | 870 | -- | -- | 91 | -- | 12 | 64 | NA | -- | 28.1 |
| WC-5-SED-A | 13000 | 2.5 | 8.2 | 50 | 0.39 | 1.9 | 1700 | 68 | 11 | 30 | 2.7 | 110 | 6200 | 300 | 1.6 | NA | NA | 23 | 900 | 0.5 | -- | 62 | -- | 14 | 220 | NA | -- | 37.8 |
| WC-5-SED-B | 14000 | 21 | 8.9 | 67 | 0.54 | 4.7 | 2900 | 200 | 11 | 65 | 2.7 | 130 | 5800 | 330 | 5.3 | 6.8 | NA | 23 | 1100 | 0.55 | -- | 85 | -- | 16 | 480 | NA | -- | 42.6 |
| WC-5-SED-C | 15000 | 34 | 50 | 86 | 0.68 | 14 | 4000 | 1100 | 12 | 200 | 2.8 | 330 | 5800 | 410 | 16 | 47 | NA | 25 | 1300 | 1.5 | -- | 110 | -- | 19 | 1300 | 1400 | 0.46 | 53.5 |
| WC-6-SED-A | 15000 | -- | 5 | 76 | 0.63 | 3.6 | 6300 | 180 | 12 | 120 | 2.5 | 210 | 6300 | 350 | 4.8 | NA | 1.19 | 35 | 1400 | 1.4 | -- | 180 | -- | 20 | 410 | NA | -- | 74.2 |
| WC-6-SED-B | 18000 | 35 | 33 | 170 | 0.83 | 14 | 4400 | 1100 | 13 | 230 | 3.1 | 370 | 6000 | 350 | 13 | 20 | 2.31 | 28 | 1400 | 2.5 | -- | 170 | -- | 22 | 1300 | NA | -- | 66.2 |
| WC-6-SED-C | 16000 | 25 | 46 | 100 | 0.68 | 7.5 | 4100 | 2000 | 11 | 200 | 2.5 | 340 | 5400 | 320 | 13 | 9.1 | 0.333 | 24 | 1100 | 1.4 | -- | 140 | -- | 18 | 810 | NA | -- | 57.9 |
| WC-7-SED-A | 14000 | 2 | 7.3 | 71 | 0.61 | 4.9 | 6300 | 310 | 13 | 140 | 2.6 | 210 | 6200 | 390 | 6.9 | NA | 1.55 | 34 | 1200 | 1.5 | -- | 180 | -- | 17 | 550 | NA | -- | 76.2 |
| WC-7-SED-B | 17000 | 34 | 23 | 87 | 0.76 | 11 | 6000 | 840 | 15 | 230 | 3 | 340 | 6800 | 410 | 25 | 52 | 1.29 | 43 | 1400 | 1.7 | -- | 190 | -- | 27 | 990 | NA | 2.9 | 73.9 |

| Screening Value | Parameter (mg/Kg) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe (%) | Pb | Mg | Mn | Hg | Hg (E) | MeHg (µg/Kg) | Ni | K | Se | Ag | Na | Tl | Vn | Zn | Zn (E) | CN | Moisture (%) |
| WC-7-SED-C | 14000 | -- | 7.5 | 84 | 0.62 | -- | 4300 | 35 | 8.8 | 22 | 2.1 | 39 | 4800 | 370 | 0.15 | NA | NA | 21 | 890 | 1.1 | -- | 110 | -- | 15 | 71 | NA | -- | 59.5 |
| WC-8-SED-A | 15000 | 15 | 18 | 91 | 0.57 | 3.9 | 2900 | 250 | 11 | 150 | 2.4 | 230 | 5900 | 300 | 12 | 8.4 | 2.25 | 25 | 950 | 0.93 | -- | 97 | -- | 17 | 560 | NA | -- | 50.1 |
| WC-8-SED-B | 13000 | 0.94 | 34 | 64 | 0.54 | 0.39 | 2300 | 130 | 11 | 81 | 2.2 | 160 | 5600 | 200 | 1.9 | NA | -- | 22 | 820 | 0.49 | -- | 71 | -- | 15 | 110 | NA | -- | 39.5 |
| WC-8-SED-C | 15000 | -- | 16 | 69 | 0.59 | 0.19 | 2100 | 120 | 11 | 46 | 2.4 | 160 | 6200 | 230 | 0.11 | NA | 0.058 | 24 | 840 | 0.67 | -- | 74 | -- | 17 | 87 | NA | -- | 39.1 |
| WC-9-SED-A | 13000 | -- | 5.4 | 73 | 0.57 | 2 | 6200 | 110 | 12 | 69 | 2.5 | 130 | 6600 | 520 | 2.5 | NA | 0.471 | 28 | 1100 | 1.2 | -- | 150 | -- | 20 | 280 | NA | -- | 68.7 |
| WC-9-SED-B | 12000 | 0.86 | 6.7 | 69 | 0.55 | 3.1 | 4800 | 120 | 13 | 130 | 2.6 | 180 | 6000 | 500 | 5.3 | 6.2 | 0.719 | 27 | 810 | 0.63 | 0.46 | 87 | -- | 20 | 390 | NA | -- | 54.6 |
| WC-9-SED-C | 14000 | 4 | 110 | 91 | 0.62 | 23 | 4400 | 3000 | 11 | 350 | 2.8 | 620 | 5500 | 430 | 17 | 81 | 1.63 | 22 | 1100 | 1.3 | -- | 85 | -- | 17 | 1900 | 2100 | 9 | 52.3 |
| WC-10-SED-A | 14000 | -- | 4.7 | 62 | 0.48 | 0.35 | 4000 | 21 | 10 | 22 | 3.1 | 30 | 7700 | 610 | 0.13 | NA | NA | 24 | 910 | -- | -- | 89 | -- | 16 | 100 | NA | -- | 44.7 |
| WC-10-SED-B | 9700 | -- | 2.5 | 23 | 0.33 | 0.17 | 930 | 9.8 | 7.9 | 10 | 2.5 | 17 | 6000 | 180 | -- | NA | NA | 17 | 480 | -- | -- | 30 | -- | 12 | 53 | NA | -- | 13.1 |
| WC-11-SED-A | 11000 | 6.9 | 7.4 | 27 | 0.37 | 1.3 | 5900 | 38 | 10 | 33 | 2.7 | 67 | 6200 | 310 | 0.5 | NA | NA | 23 | 630 | -- | -- | 42 | -- | 14 | 280 | NA | -- | 15.7 |
| WC-11-SED-B | 16000 | 4.3 | 15 | 46 | 0.52 | 1.8 | 2300 | 250 | 14 | 47 | 3.6 | 180 | 8100 | 330 | 2.6 | NA | NA | 28 | 1100 | -- | -- | 73 | -- | 20 | 380 | NA | 0.72 | 44.7 |
| WC-12-SED-A | 13000 | -- | 5 | 46 | 0.54 | 0.24 | 2400 | 16 | 9.1 | 18 | 2.7 | 17 | 6200 | 330 | 0.018 | NA | NA | 23 | 920 | 0.43 | -- | 68 | -- | 14 | 80 | NA | -- | 34 |
| WC-12-SED-B | 12000 | -- | 6.7 | 37 | 0.45 | 0.25 | 1400 | 14 | 11 | 17 | 2.8 | 13 | 5900 | 170 | 0.011 | NA | NA | 23 | 940 | -- | -- | 51 | -- | 15 | 62 | NA | -- | 23.5 |
| WC-13-SED-A | 14000 | -- | 6.8 | 33 | 0.45 | 0.52 | 2300 | 21 | 12 | 16 | 4.1 | 33 | 7700 | 590 | 0.057 | NA | NA | 27 | 760 | -- | -- | 56 | -- | 15 | 340 | NA | -- | 18.4 |
| WC-13-SED-B | 11000 | -- | 3.5 | 27 | 0.4 | 0.26 | 1100 | 13 | 9.8 | 11 | 2.8 | 11 | 6100 | 330 | -- | NA | NA | 21 | 740 | -- | -- | 58 | -- | 12 | 68 | NA | -- | 18.4 |
| WC-14-SED-A | 9100 | -- | 3.1 | 21 | 0.32 | 0.25 | 1700 | 15 | 7.5 | 19 | 2.4 | 42 | 4800 | 250 | 0.22 | NA | NA | 16 | 640 | -- | -- | 50 | -- | 11 | 100 | NA | -- | 21.5 |
| WC-14-SED-B | 12000 | -- | 3.3 | 25 | 0.41 | 0.2 | 1300 | 17 | 10 | 18 | 3 | 12 | 7100 | 290 | 0.012 | NA | NA | 23 | 680 | -- | -- | 44 | -- | 15 | 78 | NA | -- | 13.9 |
| WC-15-SED-A | 9100 | 1.9 | 13 | 38 | 0.39 | 2 | 3800 | 170 | 13 | 240 | 4.6 | 510 | 4400 | 420 | 2.3 | 2.4 | NA | 24 | 640 | 0.94 | -- | 62 | -- | 13 | 410 | NA | -- | 22.5 |
| WC-15-SED-B | 15000 | -- | 10 | 93 | 0.64 | 1.7 | 11000 | 41 | 9.4 | 310 | 3 | 620 | 4500 | 340 | 0.68 | NA | NA | 21 | 2000 | 1.2 | -- | 1700 | -- | 22 | 500 | NA | -- | 35.3 |

Dashes indicate "U" data qualifier--not detected.

E = Result from analysis of diluted sample.
SEL = Severe effect level.
LEL = Lowest effect level.

Yellow indicates result greater than or equal to LEL.

Tan indicates result greater than or equal to SEL.

# TABLE 3-5 NUMBER OF SAMPLES WITH CONSTITUENT CONCENTRATIONS AT SELECTED SCREENING LEVELS AND RELATIVE TO BACKGROUND CONCENTRATIONS FOR WAPPINGER CREEK, OCTOBER 2009

| | NYSDEC Screening Values | | | Background | | |
|---|---|---|---|---|---|---|
| Constituent | <LEL | LEL-SEL | >SEL | <Min | <Max | >Max |
| Aluminum (Al) | -- | -- | -- | 8 | 39 | 0 |
| Antimony (Sb) | 27 | 8 | 4 | 0 | 29 | 10 |
| Arsenic (As) | 16 | 19 | 4 | 9 | 15 | 24 |
| Barium (Ba) | -- | -- | -- | 27 | 38 | 1 |
| Beryllium (Be) | -- | -- | -- | 9 | 39 | 0 |
| Cadmium (Cd) | 20 | 15 | 4 | 0 | 22 | 17 |
| Calcium (Ca) | -- | -- | -- | 31 | 39 | 0 |
| Chromium (Cr) | 15 | 7 | 17 | 7 | 15 | 24 |
| Cobalt (Co) | -- | -- | -- | 0 | 36 | 3 |
| Copper (Cu) | 5 | 22 | 12 | 18 | 27 | 12 |
| Iron (Fe) | 0 | 37 | 2 | 11 | 36 | 3 |
| Lead (Pb) | 13 | 6 | 20 | 15 | 28 | 11 |
| Magnesium (Mg) | -- | -- | -- | 9 | 39 | 0 |
| Manganese (Mn) | 34 | 5 | 0 | 34 | 39 | 0 |
| Mercury (Hg) | 16 | 3 | 19 | 17 | 19 | 20 |
| Nickel (Ni) | 0 | 39 | 0 | 10 | 35 | 4 |
| Potassium (K) | -- | -- | -- | 11 | 37 | 2 |
| Selenium (Se) | -- | -- | -- | 33 | 39 | 0 |
| Silver (Ag) | 39 | 0 | 0 | 38 | 0 | 1 |
| Sodium (Na) | -- | -- | -- | 10 | 38 | 1 |
| Thallium (Tl) | -- | -- | -- | 39 | 0 | 0 |
| Vanadium (Vn) | -- | -- | -- | 23 | 39 | 0 |
| Zinc (Zn) | 19 | 2 | 18 | 19 | 24 | 15 |
| Cyanide (CN) | 35 | 4 | -- | | 38 | 1 |

NOTE: LEL = Lowest effect level.
SEL = Severe effect level.

# TABLE 3-6 RATIO OF THE CONSTITUENT CONCENTRATION TO THE LOWEST EFFECT LEVEL OR SEVERE EFFECT LEVEL SCREENING LEVEL FOR WAPPINGER CREEK, OCTOBER 2009

| Area | Screening Value | Sb | As | Cd | Cr | Cu | Pb | Hg | Zn |
|---|---|---|---|---|---|---|---|---|---|
| | LEL | 2 | 6 | 0.6 | 26 | 16 | 31 | 0.15 | 120 |
| | SEL | 25 | 33 | 9 | 110 | 110 | 110 | 1.3 | 270 |
| | Sample | | | | | | | | |
| Downstream (CR 28 Bridge) | WC-1-SED-A | | | | | 1.1 | | | |
| | WC-1-SED-B | | | | | 1.1 | | | |
| | WC-1-SED-C | | | | | 1.1 | | | |
| | WC-2-SED-A | | 1.5 | 2.3 | 3.2 | 4.3 | 2.8 | 2.0 | 1.8 |
| | WC-2-SED-B | | 1.6 | | 1.4 | 1.9 | 2.8 | | |
| | WC-2-SED-C | | | | | 1.2 | | | |
| Downstream (island transect) | WC-3-SED-A | | 1.1 | 6.2 | 2.4 | 5.5 | 1.0 | 1.2 | 1.6 |
| | WC-3-SED-B | 2.6 | 4.3 | 9.8 | 7.1 | 1.3 | 2.7 | 12.3 | 2.2 |
| | WC-3-SED-C | | 5.2 | | 1.5 | 4.8 | 1.3 | 1.8 | |
| | WC-4-SED-A | | | | | | | | |
| | WC-4-SED-B | | | | | | | | |
| | WC-4-SED-C | | | | | | | | |
| | WC-5-SED-A | 1.3 | 1.4 | 3.2 | 2.6 | 1.9 | 1.0 | 1.2 | 1.8 |
| | WC-5-SED-B | 10.5 | 1.5 | 7.8 | 1.8 | 4.1 | 1.2 | 5.2 | 1.8 |
| | WC-5-SED-C | 1.4 | 1.5 | 1.6 | 10.0 | 1.8 | 3.0 | 36.2 | 5.2 |
| Embayment | WC-6-SED-A | | | 6.0 | 1.6 | 1.1 | 1.9 | 3.7 | 1.5 |
| | WC-6-SED-B | 1.4 | 1.0 | 1.6 | 10.0 | 2.1 | 3.4 | 15.4 | 4.8 |
| | WC-6-SED-C | 1.0 | 1.4 | 12.5 | 18.2 | 1.8 | 3.1 | 7.0 | 3.0 |
| | WC-7-SED-A | 1.0 | 1.2 | 8.2 | 2.8 | 1.3 | 1.9 | 5.3 | 2.0 |
| | WC-7-SED-B | 1.4 | 3.8 | 1.2 | 7.6 | 2.1 | 3.1 | 40.0 | 3.7 |
| | WC-7-SED-C | | 1.3 | | 1.3 | 1.4 | 1.3 | 1.0 | |
| | WC-8-SED-A | 7.5 | 3.0 | 6.5 | 2.3 | 1.4 | 2.1 | 6.5 | 2.1 |
| | WC-8-SED-B | | 1.0 | | 1.2 | 5.1 | 1.5 | 1.5 | |
| | WC-8-SED-C | | 2.7 | | 1.1 | 2.9 | 1.5 | | |
| | WC-9-SED-A | | | 3.3 | 1.0 | 4.3 | 1.2 | 1.9 | 1.0 |
| | WC-9-SED-B | | 1.1 | 5.2 | 1.1 | 1.2 | 1.6 | 4.8 | 1.4 |
| | WC-9-SED-C | 2.0 | | 2.6 | 27.3 | 3.2 | 5.6 | 62.3 | 7.8 |

| Area | Screening Value | Sb | As | Cd | Cr | Cu | Pb | Hg | Zn |
|---|---|---|---|---|---|---|---|---|---|
| | LEL | 2 | 6 | 0.6 | 26 | 16 | 31 | 0.15 | 120 |
| | SEL | 25 | 33 | 9 | 110 | 110 | 110 | 1.3 | 270 |
| | Sample | | | | | | | | |
| Shoal | WC-10-SED-A | | | | | 1.4 | | | |
| | WC-10-SED-B | | | | | | | | |
| | WC-11-SED-A | 3.5 | 1.2 | 2.2 | 1.5 | 2.1 | 2.2 | 3.3 | 1.0 |
| | WC-11-SED-B | 2.2 | 2.5 | 3.0 | 2.3 | 2.9 | 1.6 | 2.0 | 1.4 |
| | WC-12-SED-A | | | | | 1.1 | | | |
| | WC-12-SED-B | | 1.1 | | | 1.1 | | | |
| | WC-13-SED-A | | 1.1 | | | 1.0 | 1.1 | | 1.3 |
| | WC-13-SED-B | | | | | | | | |
| | WC-14-SED-A | | | | | 1.2 | 1.4 | 1.5 | |
| | WC-14-SED-B | | | | | 1.1 | | | |
| Site | WC-15-SED-A | | 2.2 | 3.3 | 1.5 | 2.2 | 4.6 | 1.8 | 1.5 |
| | WC-15-SED-B | | 1.7 | 2.8 | | 2.8 | 5.6 | 4.5 | 1.9 |

Yellow indicates concentration between LEL and SEL screening level.
Tan indicates concentration greater than SEL screening level.

NOTE: LEL = Lowest effect level.
SEL = Severe effect level.

# TABLE 3-7 STATISTICAL COMPARISON OF SEDIMENT INORGANIC CONSTITUENTS FROM 2001-2003 AND 2009 SAMPLING PROGRAMS, WAPPINGER CREEK

| | | | | 2001-2003 Data | | | | 2009 Data | | | | t-Test | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Area | Depth (in.) | Units | n | No. of Detects | Mean | Std. Dev. | n | No. of Detects | Mean | Std. Dev. | t-Statistic | DF | Two-Tailed P-Value | |
| Antimony | Downstream | 0-6 | mg/kg | 11 | 1 | 3.64 | 12.1 | 5 | 1 | 0.5 | 1.12 | 0.57 | 14 | 0.58 | |
| | Downstream | 6-12 | mg/kg | 11 | 3 | 5.87 | 15.5 | 5 | 2 | 5.22 | 9.09 | 0.0864 | 14 | 0.93 | |
| | Downstream | 12 + | mg/kg | 8 | 1 | 0.3 | 0.849 | 5 | 1 | 6.8 | 15.2 | 1.24 | 11 | 0.24 | |
| | Downstream | Composite | mg/kg | 30 | 5 | 3.57 | 11.8 | 15 | 4 | 4.17 | 9.89 | 0.171 | 43 | 0.86 | |
| | Embayment | 0-6 | mg/kg | 4 | 2 | 3.13 | 3.67 | 4 | 2 | 4.25 | 7.23 | 0.277 | 6 | 0.79 | |
| | Embayment | 6-12 | mg/kg | 4 | 3 | 7.28 | 9.36 | 4 | 4 | 17.7 | 19.4 | 0.968 | 6 | 0.37 | |
| | Embayment | 12 + | mg/kg | 2 | 1 | 3.9 | 5.52 | 4 | 2 | 7.25 | 12 | 0.36 | 4 | 0.74 | |
| | Embayment | Composite | mg/kg | 10 | 6 | 4.94 | 6.42 | 12 | 8 | 9.73 | 13.9 | 1 | 20 | 0.33 | |
| | Shoal | 0-6 | mg/kg | 8 | 3 | 22.2 | 55.5 | 5 | 1 | 1.38 | 3.09 | 0.823 | 11 | 0.43 | |
| | Shoal | 6-12 | mg/kg | 7 | 5 | 31.8 | 44.2 | 5 | 1 | 0.86 | 1.92 | 1.54 | 10 | 0.15 | |
| | Shoal | 12 + | mg/kg | 4 | 0 | NA | NA | 0 | | | | NA | NA | NA | |
| | Shoal | Composite | mg/kg | 19 | 8 | 21.1 | 44.6 | 10 | 2 | 1.12 | 2.44 | 1.4 | 27 | 0.17 | |
| | Site area | 0-6 | mg/kg | 8 | 1 | 0.29 | 0.813 | 1 | 1 | 1.9 | | NA | NA | NA | |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 2.3 | | NA | NA | NA | |
| | Site area | Composite | mg/kg | 8 | 1 | 0.29 | 0.813 | 2 | 2 | 2.1 | 0.283 | 2.99 | 8 | 0.02 | * |
| Arsenic | Downstream | 0-6 | mg/kg | 11 | 6 | 4.48 | 5.08 | 5 | 5 | 6.06 | 2.98 | 0.638 | 14 | 0.53 | |
| | Downstream | 6-12 | mg/kg | 11 | 8 | 11.5 | 12.1 | 5 | 5 | 9.92 | 9.61 | 0.252 | 14 | 0.80 | |
| | Downstream | 12 + | mg/kg | 8 | 4 | 8.18 | 10.9 | 5 | 5 | 18.3 | 21.4 | 1.14 | 11 | 0.28 | |
| | Downstream | Composite | mg/kg | 30 | 18 | 8.03 | 9.85 | 15 | 15 | 11.4 | 13.7 | 0.953 | 43 | 0.35 | |
| | Embayment | 0-6 | mg/kg | 4 | 2 | 6.45 | 7.45 | 4 | 4 | 8.95 | 6.11 | 0.519 | 6 | 0.62 | |
| | Embayment | 6-12 | mg/kg | 4 | 3 | 41.8 | 44.7 | 4 | 4 | 24.2 | 12.7 | 0.757 | 6 | 0.48 | |
| | Embayment | 12 + | mg/kg | 2 | 1 | 10 | 14.1 | 4 | 4 | 44.9 | 46.5 | 0.986 | 4 | 0.38 | |
| | Embayment | Composite | mg/kg | 10 | 6 | 21.3 | 31.9 | 12 | 12 | 26 | 29.6 | 0.359 | 20 | 0.72 | |
| | Shoal | 0-6 | mg/kg | 8 | 5 | 7.56 | 7.94 | 5 | 5 | 5.4 | 1.72 | 0.591 | 11 | 0.57 | |
| | Shoal | 6-12 | mg/kg | 7 | 6 | 46.1 | 53 | 5 | 5 | 6.2 | 5.17 | 1.66 | 10 | 0.13 | |
| | Shoal | 12 + | mg/kg | 4 | 4 | 31 | 12.6 | 0 | | | | NA | NA | NA | |
| | Shoal | Composite | mg/kg | 19 | 15 | 26.7 | 36.1 | 10 | 10 | 5.8 | 3.66 | 1.81 | 27 | 0.08 | |
| | Site area | 0-6 | mg/kg | 8 | 8 | 9.41 | 4.13 | 1 | 1 | 13 | | NA | NA | NA | |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 10 | | NA | NA | NA | |
| | Site area | Composite | mg/kg | 8 | 8 | 9.41 | 4.13 | 2 | 2 | 11.5 | 2.12 | 0.673 | 8 | 0.52 | |

| Parameter | Area | Depth (in.) | Units | 2001-2003 Data | | | | 2009 Data | | | | t-Test | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | n | No. of Detects | Mean | Std. Dev. | n | No. of Detects | Mean | Std. Dev. | t-Statistic | DF | Two-Tailed P-Value |
| Cadmium | Downstream | 0-6 | mg/kg | 11 | 10 | 2.56 | 1.57 | 5 | 5 | 1.51 | 1.41 | 1.28 | 14 | 0.22 |
| | Downstream | 6-12 | mg/kg | 11 | 10 | 3.6 | 3.5 | 5 | 5 | 2.31 | 2.77 | 0.725 | 14 | 0.48 |
| | Downstream | 12 + | mg/kg | 8 | 4 | 1.44 | 2.09 | 5 | 5 | 3.04 | 6.13 | 0.694 | 11 | 0.50 |
| | Downstream | Composite | mg/kg | 30 | 24 | 2.64 | 2.62 | 15 | 15 | 2.29 | 3.73 | 0.373 | 43 | 0.71 |
| | Embayment | 0-6 | mg/kg | 4 | 4 | 5.41 | 1.36 | 4 | 4 | 3.6 | 1.2 | 1.99 | 6 | 0.09 |
| | Embayment | 6-12 | mg/kg | 4 | 4 | 8.8 | 7.32 | 4 | 4 | 7.12 | 6.43 | 0.344 | 6 | 0.74 |
| | Embayment | 12 + | mg/kg | 2 | 1 | 2.35 | 3.32 | 4 | 3 | 7.67 | 10.8 | 0.647 | 4 | 0.55 |
| | Embayment | Composite | mg/kg | 10 | 9 | 6.16 | 5.13 | 12 | 11 | 6.13 | 6.86 | 0.00888 | 20 | 0.99 |
| | Shoal | 0-6 | mg/kg | 8 | 7 | 5.19 | 8.91 | 5 | 5 | 0.532 | 0.444 | 1.15 | 11 | 0.28 |
| | Shoal | 6-12 | mg/kg | 7 | 6 | 26.6 | 28.3 | 5 | 5 | 0.536 | 0.708 | 2.03 | 10 | 0.07 |
| | Shoal | 12 + | mg/kg | 4 | 4 | 6.38 | 3.68 | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 17 | 13.3 | 20.2 | 10 | 10 | 0.534 | 0.557 | 1.98 | 27 | 0.06 |
| | Site area | 0-6 | mg/kg | 8 | 6 | 1.19 | 0.854 | 1 | 1 | 2 | | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 1.7 | | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 6 | 1.19 | 0.854 | 2 | 2 | 1.85 | 0.212 | 1.04 | 8 | 0.33 |
| Chromium | Downstream | 0-6 | mg/kg | 11 | 10 | 69.5 | 62.3 | 5 | 5 | 53 | 35.1 | 0.549 | 14 | 0.59 |
| | Downstream | 6-12 | mg/kg | 11 | 10 | 220 | 253 | 5 | 5 | 210 | 328 | 0.0684 | 14 | 0.95 |
| | Downstream | 12 + | mg/kg | 8 | 5 | 122 | 155 | 5 | 5 | 263 | 472 | 0.798 | 11 | 0.44 |
| | Downstream | Composite | mg/kg | 30 | 25 | 139 | 183 | 15 | 15 | 175 | 321 | 0.488 | 43 | 0.63 |
| | Embayment | 0-6 | mg/kg | 4 | 4 | 315 | 122 | 4 | 4 | 213 | 86.6 | 1.38 | 6 | 0.22 |
| | Embayment | 6-12 | mg/kg | 4 | 4 | 1400 | 1620 | 4 | 4 | 548 | 499 | 1.01 | 6 | 0.35 |
| | Embayment | 12 + | mg/kg | 2 | 1 | 287 | 406 | 4 | 4 | 1290 | 1460 | 0.905 | 4 | 0.42 |
| | Embayment | Composite | mg/kg | 10 | 9 | 745 | 1110 | 12 | 12 | 683 | 933 | 0.143 | 20 | 0.89 |
| | Shoal | 0-6 | mg/kg | 8 | 7 | 68.1 | 82.8 | 5 | 5 | 22.2 | 9.26 | 1.22 | 11 | 0.25 |
| | Shoal | 6-12 | mg/kg | 7 | 6 | 784 | 876 | 5 | 5 | 60.8 | 106 | 1.81 | 10 | 0.10 |
| | Shoal | 12 + | mg/kg | 4 | 4 | 1940 | 1610 | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 17 | 726 | 1100 | 10 | 10 | 41.5 | 73.7 | 1.95 | 27 | 0.06 |
| | Site area | 0-6 | mg/kg | 8 | 1 | 3.63 | 10.3 | 1 | 1 | 170 | | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 41 | | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 1 | 3.63 | 10.3 | 2 | 2 | 106 | 91.2 | 3.83 | 8 | 0.01 * |

| Parameter | Area | Depth (in.) | Units | 2001-2003 Data | | | | 2009 Data | | | | t-Test | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | n | No. of Detects | Mean | Std. Dev. | n | No. of Detects | Mean | Std. Dev. | t-Statistic | DF | Two-Tailed P-Value | |
| Copper | Downstream | 0-6 | mg/kg | 11 | 10 | 64.7 | 24.9 | 5 | 5 | 42.9 | 34 | 1.45 | 14 | 0.17 | |
| | Downstream | 6-12 | mg/kg | 11 | 10 | 75.3 | 43.1 | 5 | 5 | 52.6 | 53.3 | 0.909 | 14 | 0.38 | |
| | Downstream | 12 + | mg/kg | 8 | 6 | 31.8 | 28.1 | 5 | 5 | 64.4 | 80.5 | 1.07 | 11 | 0.31 | |
| | Downstream | Composite | mg/kg | 30 | 26 | 59.8 | 36.9 | 15 | 15 | 53.3 | 55.5 | 0.469 | 43 | 0.64 | |
| | Embayment | 0-6 | mg/kg | 4 | 4 | 147 | 27.2 | 4 | 4 | 122 | 36.4 | 1.08 | 6 | 0.32 | |
| | Embayment | 6-12 | mg/kg | 4 | 4 | 217 | 99.5 | 4 | 4 | 168 | 74.6 | 0.796 | 6 | 0.46 | |
| | Embayment | 12 + | mg/kg | 2 | 2 | 68 | 62.2 | 4 | 4 | 155 | 152 | 0.737 | 4 | 0.50 | |
| | Embayment | Composite | mg/kg | 10 | 10 | 159 | 86 | 12 | 12 | 148 | 92.8 | 0.288 | 20 | 0.78 | |
| | Shoal | 0-6 | mg/kg | 8 | 7 | 76.4 | 53.1 | 5 | 5 | 21.6 | 6.73 | 2.26 | 11 | 0.05 | * |
| | Shoal | 6-12 | mg/kg | 7 | 6 | 193 | 176 | 5 | 5 | 20.6 | 15.2 | 2.16 | 10 | 0.06 | |
| | Shoal | 12 + | mg/kg | 4 | 4 | 225 | 173 | 0 | | | | NA | NA | NA | |
| | Shoal | Composite | mg/kg | 19 | 17 | 151 | 144 | 10 | 10 | 21.1 | 11.1 | 2.82 | 27 | 0.01 | * |
| | Site area | 0-6 | mg/kg | 8 | 8 | 77.7 | 41.9 | 1 | 1 | 240 | | NA | NA | NA | |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 310 | | NA | NA | NA | |
| | Site area | Composite | mg/kg | 8 | 8 | 77.7 | 41.9 | 2 | 2 | 275 | 49.5 | 5.81 | 8 | 0.00 | * |
| Iron | Downstream | 0-6 | percent | 11 | 10 | 2.54 | 0.887 | 5 | 5 | 2.58 | 0.259 | 0.0951 | 14 | 0.93 | |
| | Downstream | 6-12 | percent | 11 | 10 | 2.55 | 0.944 | 5 | 5 | 2.52 | 0.268 | 0.079 | 14 | 0.94 | |
| | Downstream | 12 + | percent | 8 | 7 | 2.35 | 0.971 | 5 | 5 | 2.64 | 0.305 | 0.639 | 11 | 0.54 | |
| | Downstream | Composite | percent | 30 | 27 | 2.5 | 0.902 | 15 | 15 | 2.58 | 0.262 | 0.356 | 43 | 0.72 | |
| | Embayment | 0-6 | percent | 4 | 4 | 2.78 | 0.171 | 4 | 4 | 2.53 | 0.0957 | 2.55 | 6 | 0.04 | * |
| | Embayment | 6-12 | percent | 4 | 4 | 2.73 | 0.0957 | 4 | 4 | 2.73 | 0.411 | 2.1E-15 | 6 | 1.00 | |
| | Embayment | 12 + | percent | 2 | 2 | 2.35 | 0.0707 | 4 | 4 | 2.45 | 0.289 | 0.457 | 4 | 0.67 | |
| | Embayment | Composite | percent | 10 | 10 | 2.67 | 0.206 | 12 | 12 | 2.57 | 0.293 | 0.937 | 20 | 0.36 | |
| | Shoal | 0-6 | percent | 8 | 8 | 2.83 | 0.539 | 5 | 5 | 3 | 0.663 | 0.523 | 11 | 0.61 | |
| | Shoal | 6-12 | percent | 7 | 7 | 2.56 | 0.138 | 5 | 5 | 2.94 | 0.41 | 2.29 | 10 | 0.05 | * |
| | Shoal | 12 + | percent | 4 | 4 | 3.18 | 0.695 | 0 | | | | | | | |
| | Shoal | Composite | percent | 19 | 19 | 2.8 | 0.503 | 10 | 10 | 2.97 | 0.521 | 0.842 | 27 | 0.41 | |
| | Site area | 0-6 | percent | 8 | 7 | 3.02 | 1.3 | 1 | 1 | 4.6 | | | | | |
| | Site area | 6-12 | percent | 0 | | | | 1 | 1 | 3 | | | | | |
| | Site area | Composite | percent | 8 | 7 | 3.02 | 1.3 | 2 | 2 | 3.8 | 1.13 | 0.771 | 8 | 0.46 | |

| Parameter | Area | Depth (in.) | Units | 2001-2003 Data | | | | 2009 Data | | | | t-Test | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | n | No. of Detects | Mean | Std. Dev. | n | No. of Detects | Mean | Std. Dev. | t-Statistic | DF | Two-Tailed P-Value |
| Lead | Downstream | 0-6 | mg/kg | 11 | 10 | 90.1 | 35.5 | 5 | 5 | 68.2 | 51.2 | 0.998 | 14 | 0.34 |
| | Downstream | 6-12 | mg/kg | 11 | 10 | 140 | 87.1 | 5 | 5 | 107 | 119 | 0.624 | 14 | 0.54 |
| | Downstream | 12 + | mg/kg | 8 | 6 | 81.8 | 69.5 | 5 | 5 | 101 | 140 | 0.333 | 11 | 0.75 |
| | Downstream | Composite | mg/kg | 30 | 26 | 106 | 70.1 | 15 | 15 | 92.2 | 103 | 0.539 | 43 | 0.59 |
| | Embayment | 0-6 | mg/kg | 4 | 4 | 254 | 51.2 | 4 | 4 | 195 | 44.3 | 1.74 | 6 | 0.13 |
| | Embayment | 6-12 | mg/kg | 4 | 4 | 421 | 170 | 4 | 4 | 263 | 108 | 1.57 | 6 | 0.17 |
| | Embayment | 12 + | mg/kg | 2 | 1 | 96.5 | 136 | 4 | 4 | 290 | 253 | 0.974 | 4 | 0.39 |
| | Embayment | Composite | mg/kg | 10 | 9 | 289 | 171 | 12 | 12 | 249 | 151 | 0.584 | 20 | 0.57 |
| | Shoal | 0-6 | mg/kg | 8 | 7 | 152 | 107 | 5 | 5 | 37.8 | 18.6 | 2.34 | 11 | 0.04 * |
| | Shoal | 6-12 | mg/kg | 7 | 6 | 419 | 340 | 5 | 5 | 46.6 | 74.6 | 2.37 | 10 | 0.04 * |
| | Shoal | 12 + | mg/kg | 4 | 4 | 403 | 194 | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 17 | 303 | 258 | 10 | 10 | 42.2 | 51.5 | 3.13 | 27 | 0.00 * |
| | Site area | 0-6 | mg/kg | 8 | 8 | 222 | 238 | 1 | 1 | 510 | | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 620 | | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 8 | 222 | 238 | 2 | 2 | 565 | 77.8 | 1.93 | 8 | 0.09 |
| Manganese | Downstream | 0-6 | mg/kg | 11 | 6 | 283 | 293 | 5 | 5 | 364 | 124 | 0.587 | 14 | 0.57 |
| | Downstream | 6-12 | mg/kg | 11 | 3 | 132 | 226 | 5 | 5 | 318 | 65.7 | 1.77 | 14 | 0.10 |
| | Downstream | 12 + | mg/kg | 8 | 0 | NA | NA | 5 | 5 | 324 | 68.8 | NA | NA | NA |
| | Downstream | Composite | mg/kg | 30 | 9 | 152 | 246 | 15 | 15 | 335 | 86.2 | 2.79 | 43 | 0.01 * |
| | Embayment | 0-6 | mg/kg | 4 | 0 | NA | NA | 4 | 4 | 393 | 92.9 | NA | NA | NA |
| | Embayment | 6-12 | mg/kg | 4 | 0 | NA | NA | 4 | 4 | 365 | 126 | NA | NA | NA |
| | Embayment | 12 + | mg/kg | 2 | 0 | NA | NA | 4 | 4 | 338 | 84.6 | NA | NA | NA |
| | Embayment | Composite | mg/kg | 10 | 0 | NA | NA | 12 | 12 | 365 | 95.9 | NA | NA | NA |
| | Shoal | 0-6 | mg/kg | 8 | 4 | 560 | 821 | 5 | 5 | 418 | 169 | 0.376 | 11 | 0.71 |
| | Shoal | 6-12 | mg/kg | 7 | 0 | NA | NA | 5 | 5 | 260 | 79.4 | NA | NA | NA |
| | Shoal | 12 + | mg/kg | 4 | 0 | NA | NA | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 4 | 236 | 586 | 10 | 10 | 339 | 150 | 0.543 | 27 | 0.59 |
| | Site area | 0-6 | mg/kg | 8 | 6 | 652 | 575 | 1 | 1 | 420 | | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 340 | | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 6 | 652 | 575 | 2 | 2 | 380 | 56.6 | 0.64 | 8 | 0.54 |

| Parameter | Area | Depth (in.) | Units | 2001-2003 Data | | | | 2009 Data | | | | t-Test | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | n | No. of Detects | Mean | Std. Dev. | n | No. of Detects | Mean | Std. Dev. | t-Statistic | DF | Two-Tailed P-Value | |
| Mercury | Downstream | 0-6 | mg/kg | 11 | 10 | 2.1 | 2.41 | 5 | 4 | 0.921 | 1.32 | 1.01 | 14 | 0.33 | |
| | Downstream | 6-12 | mg/kg | 11 | 10 | 8.38 | 10.9 | 5 | 4 | 11.2 | 25 | 0.325 | 14 | 0.75 | |
| | Downstream | 12 + | mg/kg | 8 | 4 | 4.41 | 7.41 | 5 | 3 | 0.478 | 1.02 | 1.16 | 11 | 0.27 | |
| | Downstream | Composite | mg/kg | 30 | 24 | 5.02 | 7.99 | 15 | 11 | 4.21 | 14.4 | 0.243 | 43 | 0.81 | |
| | Embayment | 0-6 | mg/kg | 4 | 4 | 9.78 | 2.23 | 4 | 4 | 6.7 | 3.98 | 1.35 | 6 | 0.23 | |
| | Embayment | 6-12 | mg/kg | 4 | 4 | 57.9 | 83.1 | 4 | 4 | 20 | 22.7 | 0.879 | 6 | 0.41 | |
| | Embayment | 12 + | mg/kg | 2 | 2 | 10.2 | 13.9 | 4 | 4 | 23.6 | 38.8 | 0.452 | 4 | 0.67 | |
| | Embayment | Composite | mg/kg | 10 | 10 | 29.1 | 54.2 | 12 | 12 | 16.8 | 24.7 | 0.707 | 20 | 0.49 | |
| | Shoal | 0-6 | mg/kg | 8 | 7 | 6.23 | 10.9 | 5 | 5 | 0.185 | 0.192 | 1.22 | 11 | 0.25 | |
| | Shoal | 6-12 | mg/kg | 7 | 7 | 67.7 | 71.6 | 5 | 3 | 0.525 | 1.16 | 2.07 | 10 | 0.07 | |
| | Shoal | 12 + | mg/kg | 4 | 4 | 92.3 | 20.6 | 0 | | | | NA | NA | NA | |
| | Shoal | Composite | mg/kg | 19 | 18 | 47 | 56.4 | 10 | 8 | 0.355 | 0.804 | 2.59 | 27 | 0.02 | * |
| | Site area | 0-6 | mg/kg | 8 | 7 | 0.35 | 0.35 | 1 | 1 | 2.4 | | NA | NA | NA | |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 0.68 | | NA | NA | NA | |
| | Site area | Composite | mg/kg | 8 | 7 | 0.35 | 0.35 | 2 | 2 | 1.54 | 1.22 | 2.78 | 8 | 0.02 | * |
| Nickel | Downstream | 0-6 | mg/kg | 11 | 10 | 32.4 | 12.5 | 5 | 5 | 27.6 | 7.77 | 0.78 | 14 | 0.45 | |
| | Downstream | 6-12 | mg/kg | 11 | 10 | 28 | 11.8 | 5 | 5 | 24.8 | 3.49 | 0.584 | 14 | 0.57 | |
| | Downstream | 12 + | mg/kg | 8 | 7 | 21.5 | 9.12 | 5 | 5 | 24.8 | 3.03 | 0.772 | 11 | 0.46 | |
| | Downstream | Composite | mg/kg | 30 | 27 | 27.9 | 11.9 | 15 | 15 | 25.7 | 5.02 | 0.665 | 43 | 0.51 | |
| | Embayment | 0-6 | mg/kg | 4 | 4 | 40 | 2.58 | 4 | 4 | 30.5 | 4.8 | 3.49 | 6 | 0.01 | * |
| | Embayment | 6-12 | mg/kg | 4 | 4 | 28.3 | 5.74 | 4 | 4 | 30 | 9.06 | 0.326 | 6 | 0.76 | |
| | Embayment | 12 + | mg/kg | 2 | 2 | 22.5 | 2.12 | 4 | 4 | 22.8 | 1.5 | 0.172 | 4 | 0.87 | |
| | Embayment | Composite | mg/kg | 10 | 10 | 31.8 | 8.27 | 12 | 12 | 27.8 | 6.55 | 1.28 | 20 | 0.21 | |
| | Shoal | 0-6 | mg/kg | 8 | 8 | 25.8 | 4.86 | 5 | 5 | 22.6 | 4.04 | 1.21 | 11 | 0.25 | |
| | Shoal | 6-12 | mg/kg | 7 | 7 | 21.5 | 1.98 | 5 | 5 | 22.4 | 3.97 | 0.522 | 10 | 0.61 | |
| | Shoal | 12 + | mg/kg | 4 | 4 | 25.5 | 7.68 | 0 | | | | NA | NA | NA | |
| | Shoal | Composite | mg/kg | 19 | 19 | 24.1 | 4.96 | 10 | 10 | 22.5 | 3.78 | 0.908 | 27 | 0.37 | |
| | Site area | 0-6 | mg/kg | 8 | 7 | 25.4 | 15.8 | 1 | 1 | 24 | | NA | NA | NA | |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 21 | | NA | NA | NA | |
| | Site area | Composite | mg/kg | 8 | 7 | 25.4 | 15.8 | 2 | 2 | 22.5 | 2.12 | 0.251 | 8 | 0.81 | |

| Parameter | Area | Depth (in.) | Units | 2001-2003 Data | | | | 2009 Data | | | | t-Test | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | n | No. of Detects | Mean | Std. Dev. | n | No. of Detects | Mean | Std. Dev. | t-Statistic | DF | Two-Tailed P-Value |
| Selenium | Downstream | 0-6 | mg/kg | 11 | 0 | NA | NA | 5 | 3 | 0.416 | 0.454 | NA | NA | NA |
| | Downstream | 6-12 | mg/kg | 11 | 0 | NA | NA | 5 | 5 | 0.578 | 0.157 | NA | NA | NA |
| | Downstream | 12 + | mg/kg | 8 | 0 | NA | NA | 5 | 2 | 0.428 | 0.66 | NA | NA | NA |
| | Downstream | Composite | mg/kg | 30 | 0 | NA | NA | 15 | 10 | 0.474 | 0.443 | NA | NA | NA |
| | Embayment | 0-6 | mg/kg | 4 | 1 | 0.41 | 0.825 | 4 | 4 | 1.26 | 0.251 | 1.96 | 6 | 0.10 |
| | Embayment | 6-12 | mg/kg | 4 | 1 | 0.88 | 1.75 | 4 | 4 | 1.33 | 0.949 | 0.457 | 6 | 0.66 |
| | Embayment | 12 + | mg/kg | 2 | 0 | NA | NA | 4 | 4 | 1.12 | 0.323 | NA | NA | NA |
| | Embayment | Composite | mg/kg | 10 | 2 | 0.52 | 1.17 | 12 | 12 | 1.24 | 0.548 | 1.9 | 20 | 0.07 |
| | Shoal | 0-6 | mg/kg | 8 | 0 | NA | NA | 5 | 1 | 0.086 | 0.192 | NA | NA | NA |
| | Shoal | 6-12 | mg/kg | 7 | 0 | NA | NA | 5 | 0 | NA | NA | NA | NA | NA |
| | Shoal | 12 + | mg/kg | 4 | 0 | NA | NA | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 0 | NA | NA | 10 | 1 | 0.043 | 0.136 | NA | NA | NA |
| | Site area | 0-6 | mg/kg | 8 | 0 | NA | NA | 1 | 1 | 0.94 | | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 1.2 | | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 0 | NA | NA | 2 | 2 | 1.07 | 0.184 | NA | NA | NA |
| Silver | Downstream | 0-6 | mg/kg | 11 | 0 | NA | NA | 5 | 0 | NA | NA | NA | NA | NA |
| | Downstream | 6-12 | mg/kg | 11 | 0 | NA | NA | 5 | 0 | NA | NA | NA | NA | NA |
| | Downstream | 12 + | mg/kg | 8 | 0 | NA | NA | 5 | 0 | NA | NA | NA | NA | NA |
| | Downstream | Composite | mg/kg | 30 | 0 | NA | NA | 15 | 0 | NA | NA | NA | NA | NA |
| | Embayment | 0-6 | mg/kg | 4 | 1 | 0.29 | 0.575 | 4 | 0 | NA | NA | NA | NA | NA |
| | Embayment | 6-12 | mg/kg | 4 | 0 | NA | NA | 4 | 1 | 0.115 | 0.23 | NA | NA | NA |
| | Embayment | 12 + | mg/kg | 2 | 0 | NA | NA | 4 | 0 | NA | NA | NA | NA | NA |
| | Embayment | Composite | mg/kg | 10 | 1 | 0.12 | 0.364 | 12 | 1 | 0.0383 | 0.133 | 0.681 | 20 | 0.50 |
| | Shoal | 0-6 | mg/kg | 8 | 0 | NA | NA | 5 | 0 | NA | NA | NA | NA | NA |
| | Shoal | 6-12 | mg/kg | 7 | 0 | NA | NA | 5 | 0 | NA | NA | NA | NA | NA |
| | Shoal | 12 + | mg/kg | 4 | 0 | NA | NA | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 0 | NA | NA | 10 | 0 | NA | NA | NA | NA | NA |
| | Site area | 0-6 | mg/kg | 8 | 0 | NA | NA | 1 | 0 | NA | NA | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 0 | NA | NA | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 0 | NA | NA | 2 | 0 | NA | NA | NA | NA | NA |

| Parameter | Area | Depth (in.) | Units | 2001-2003 Data | | | | 2009 Data | | | | t-Test | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | n | No. of Detects | Mean | Std. Dev. | n | No. of Detects | Mean | Std. Dev. | t-Statistic | DF | Two-Tailed P-Value |
| Thallium | Downstream | 0-6 | mg/kg | 11 | 5 | 1.1 | 1.39 | 5 | 0 | NA | NA | NA | NA | NA |
| | Downstream | 6-12 | mg/kg | 11 | 5 | 0.87 | 1.13 | 5 | 0 | NA | NA | NA | NA | NA |
| | Downstream | 12 + | mg/kg | 8 | 5 | 1.05 | 0.929 | 5 | 0 | NA | NA | NA | NA | NA |
| | Downstream | Composite | mg/kg | 30 | 15 | 1 | 1.15 | 15 | 0 | NA | NA | NA | NA | NA |
| | Embayment | 0-6 | mg/kg | 4 | 1 | 0.75 | 1.5 | 4 | 0 | NA | NA | NA | NA | NA |
| | Embayment | 6-12 | mg/kg | 4 | 0 | NA | NA | 4 | 0 | NA | NA | NA | NA | NA |
| | Embayment | 12 + | mg/kg | 2 | 0 | NA | NA | 4 | 0 | NA | NA | NA | NA | NA |
| | Embayment | Composite | mg/kg | 10 | 1 | 0.3 | 0.949 | 12 | 0 | NA | NA | NA | NA | NA |
| | Shoal | 0-6 | mg/kg | 8 | 4 | 0.73 | 0.848 | 5 | 0 | NA | NA | NA | NA | NA |
| | Shoal | 6-12 | mg/kg | 7 | 4 | 0.64 | 0.645 | 5 | 0 | NA | NA | NA | NA | NA |
| | Shoal | 12 + | mg/kg | 4 | 1 | 0.21 | 0.425 | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 9 | 0.59 | 0.7 | 10 | 0 | NA | NA | NA | NA | NA |
| | Site area | 0-6 | mg/kg | 8 | 0 | NA | NA | 1 | 0 | NA | NA | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 0 | NA | NA | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 0 | NA | NA | 2 | 0 | NA | NA | NA | NA | NA |
| Total Cyanide | Downstream | 0-6 | mg/kg | 11 | 2 | 0.41 | 1.17 | 5 | 0 | NA | NA | NA | NA | NA |
| | Downstream | 6-12 | mg/kg | 11 | 7 | 0.76 | 1.26 | 5 | 0 | NA | NA | NA | NA | NA |
| | Downstream | 12 + | mg/kg | 8 | 3 | 0.41 | 0.934 | 5 | 0 | NA | NA | NA | NA | NA |
| | Downstream | Composite | mg/kg | 30 | 12 | 0.54 | 1.12 | 15 | 0 | NA | NA | NA | NA | NA |
| | Embayment | 0-6 | mg/kg | 4 | 3 | 1.3 | 1.61 | 4 | 0 | NA | NA | NA | NA | NA |
| | Embayment | 6-12 | mg/kg | 4 | 3 | 13.4 | 19.7 | 4 | 1 | 0.725 | 1.45 | 1.28 | 6 | 0.25 |
| | Embayment | 12 + | mg/kg | 2 | 2 | 4.33 | 5.2 | 4 | 1 | 2.25 | 4.5 | 0.512 | 4 | 0.64 |
| | Embayment | Composite | mg/kg | 10 | 8 | 6.74 | 13 | 12 | 2 | 0.992 | 2.66 | 1.51 | 20 | 0.15 |
| | Shoal | 0-6 | mg/kg | 8 | 5 | 3.8 | 9.79 | 5 | 0 | NA | NA | NA | NA | NA |
| | Shoal | 6-12 | mg/kg | 7 | 6 | 12.5 | 13.3 | 5 | 0 | NA | NA | NA | NA | NA |
| | Shoal | 12 + | mg/kg | 4 | 4 | 4.18 | 2.32 | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 15 | 7.08 | 10.7 | 10 | 0 | NA | NA | NA | NA | NA |
| | Site area | 0-6 | mg/kg | 8 | 3 | 0.22 | 0.386 | 1 | 0 | NA | NA | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 0 | NA | NA | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 3 | 0.22 | 0.386 | 2 | 0 | NA | NA | NA | NA | NA |

| Parameter | Area | Depth (in.) | Units | 2001-2003 Data | | | | 2009 Data | | | | t-Test | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | n | No. of Detects | Mean | Std. Dev. | n | No. of Detects | Mean | Std. Dev. | t-Statistic | DF | Two-Tailed P-Value |
| Vanadium | Downstream | 0-6 | mg/kg | 11 | 1 | 3.82 | 12.7 | 5 | 5 | 19.2 | 6.87 | 2.52 | 14 | 0.02 * |
| | Downstream | 6-12 | mg/kg | 11 | 1 | 4.64 | 15.4 | 5 | 5 | 18.8 | 4.82 | 1.98 | 14 | 0.07 |
| | Downstream | 12 + | mg/kg | 8 | 0 | NA | NA | 5 | 5 | 18.2 | 3.96 | NA | NA | NA |
| | Downstream | Composite | mg/kg | 30 | 2 | 3.1 | 11.9 | 15 | 15 | 18.7 | 4.98 | 4.87 | 43 | 0.00 * |
| | Embayment | 0-6 | mg/kg | 4 | 0 | NA | NA | 4 | 4 | 18.5 | 1.73 | NA | NA | NA |
| | Embayment | 6-12 | mg/kg | 4 | 0 | NA | NA | 4 | 4 | 21 | 4.97 | NA | NA | NA |
| | Embayment | 12 + | mg/kg | 2 | 0 | NA | NA | 4 | 4 | 16.8 | 1.26 | NA | NA | NA |
| | Embayment | Composite | mg/kg | 10 | 0 | NA | NA | 12 | 12 | 18.8 | 3.36 | NA | NA | NA |
| | Shoal | 0-6 | mg/kg | 8 | 0 | NA | NA | 5 | 5 | 14 | 1.87 | NA | NA | NA |
| | Shoal | 6-12 | mg/kg | 7 | 0 | NA | NA | 5 | 5 | 14.8 | 3.27 | NA | NA | NA |
| | Shoal | 12 + | mg/kg | 4 | 0 | NA | NA | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 0 | NA | NA | 10 | 10 | 14.4 | 2.55 | NA | NA | NA |
| | Site area | 0-6 | mg/kg | 8 | 0 | NA | NA | 1 | 1 | 13 | | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 22 | | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 0 | NA | NA | 2 | 2 | 17.5 | 6.36 | NA | NA | NA |
| Zinc | Downstream | 0-6 | mg/kg | 11 | 10 | 291 | 152 | 5 | 5 | 206 | 143 | 1.06 | 14 | 0.31 |
| | Downstream | 6-12 | mg/kg | 11 | 10 | 359 | 277 | 5 | 5 | 261 | 253 | 0.673 | 14 | 0.51 |
| | Downstream | 12 + | mg/kg | 8 | 3 | 143 | 216 | 5 | 5 | 343 | 591 | 0.886 | 11 | 0.39 |
| | Downstream | Composite | mg/kg | 30 | 23 | 277 | 231 | 15 | 15 | 270 | 357 | 0.0756 | 43 | 0.94 |
| | Embayment | 0-6 | mg/kg | 4 | 4 | 555 | 123 | 4 | 4 | 450 | 132 | 1.16 | 6 | 0.29 |
| | Embayment | 6-12 | mg/kg | 4 | 4 | 874 | 679 | 4 | 4 | 698 | 544 | 0.406 | 6 | 0.70 |
| | Embayment | 12 + | mg/kg | 2 | 1 | 216 | 305 | 4 | 4 | 767 | 953 | 0.759 | 4 | 0.49 |
| | Embayment | Composite | mg/kg | 10 | 9 | 615 | 486 | 12 | 12 | 638 | 595 | 0.0993 | 20 | 0.92 |
| | Shoal | 0-6 | mg/kg | 8 | 7 | 610 | 615 | 5 | 5 | 180 | 121 | 1.52 | 11 | 0.16 |
| | Shoal | 6-12 | mg/kg | 7 | 6 | 2240 | 2310 | 5 | 5 | 128 | 141 | 2.01 | 10 | 0.07 |
| | Shoal | 12 + | mg/kg | 4 | 4 | 915 | 509 | 0 | | | | NA | NA | NA |
| | Shoal | Composite | mg/kg | 19 | 17 | 1280 | 1600 | 10 | 10 | 154 | 127 | 2.19 | 27 | 0.04 * |
| | Site area | 0-6 | mg/kg | 8 | 7 | 208 | 96.7 | 1 | 1 | 410 | | NA | NA | NA |
| | Site area | 6-12 | mg/kg | 0 | | | | 1 | 1 | 500 | | NA | NA | NA |
| | Site area | Composite | mg/kg | 8 | 7 | 208 | 96.7 | 2 | 2 | 455 | 63.6 | 3.35 | 8 | 0.01 * |

* The t-test indicates difference between the 2001-2003 and 2009 means at the 95% significance level.

# TABLE 3-8 GROUPING RESULTS FROM ANOVA FOR MEAN CONSTITUENT CONCENTRATION BY SAMPLE DEPTH 2001/2003 AND 2009 SEDIMENT DATA COMBINED

| Depth | Mean | SEM | t Grouping | |
|---|---|---|---|---|
| **Arsenic** | | | | |
| >12 in. | 23.9 | 4.9 | | b |
| 6-12 in. | 23.4 | 3.9 | | b |
| 0-6 in. | 8.1 | 3.2 | a | |
| **Cadmium** | | | | |
| 6-12 in. | 8.0 | 1.7 | a | |
| >12 in. | 4.4 | 2.2 | a | |
| 0-6 in. | 2.9 | 1.4 | a | |
| **Chromium** | | | | |
| >12 in. | 747 | 150 | | b |
| 6-12 in. | 483 | 119 | | b |
| 0-6 in. | 124 | 98 | a | |
| **Copper** | | | | |
| 6-12 in. | 136 | 16.0 | a | |
| >12 in. | 120 | 20.1 | a | |
| 0-6 in. | 87.9 | 13.1 | a | |
| **Lead** | | | | |
| 6-12 in. | 283 | 30.8 | | b |
| >12 in. | 246 | 38.8 | a | b |
| 0-6 in. | 170 | 25.3 | a | |
| **Mercury** | | | | |
| >12 in. | 26.6 | 7.3 | | b |
| 6-12 in. | 25.6 | 5.8 | | b |
| 0-6 in. | 4.1 | 4.7 | a | |
| **Nickel** | | | | |
| 0-6 in. | 28.8 | 1.3 | a | |
| 6-12 in. | 24.8 | 1.6 | a | b |
| >12 in. | 21.5 | 2.0 | | b |
| **Zinc** | | | | |
| 6-12 in. | 762 | 143 | a | |
| >12 in. | 510 | 180 | a | |
| 0-6 in. | 364 | 117 | a | |

1. Data were screened for frequency of detection; two-way ANOVA results are presented only if number of detects >50% of samples.
2. "t Grouping" letters only apply within a particular constituent.
3. Within each constituent, means are sorted from highest to lowest.
4. SEM = Standard error of mean.

# TABLE 3-9 GROUPING RESULTS FROM ANOVA FOR MEAN CONSTITUENT CONCENTRATION BY SAMPLING AREA 2001-2003 AND 2009 SEDIMENT DATA COMBINED

| Location | Mean | SEM | t Grouping | |
|---|---|---|---|---|
| **Arsenic** | | | | |
| Embayment | 24.3 | 4.6 | a | |
| Shoal | 21.4 | 4.1 | a | |
| Site Area | 18.6 | 7.2 | a | |
| Downstream | 9.5 | 3.2 | a | |
| **Cadmium** | | | | |
| Shoal | 8.8 | 1.8 | a | |
| Embayment | 6.1 | 2.0 | a | b |
| Site Area | 3.0 | 3.2 | a | b |
| Downstream | 2.5 | 1.4 | | b |
| **Chromium** | | | | |
| Embayment | 738 | 139 | | b |
| Shoal | 583 | 124 | a | b |
| Downstream | 171 | 97 | a | |
| **Copper** | | | | |
| Embayment | 154 | 18.6 | | b |
| Site Area | 139 | 29.5 | a | b |
| Shoal | 108 | 16.7 | a | b |
| Downstream | 58.0 | 13.0 | a | |
| **Lead** | | | | |
| Site Area | 342.3 | 57.0 | a | |
| Embayment | 268.5 | 35.9 | a | |
| Shoal | 219.0 | 32.2 | a | |
| Downstream | 102.4 | 25.1 | | b |
| **Mercury** | | | | |
| Shoal | 33.6 | 6.0 | a | |
| Embayment | 23.1 | 6.7 | a | b |
| Site Area | 13.1 | 10.7 | a | b |
| Downstream | 5.3 | 4.7 | | b |
| **Nickel** | | | | |
| Embayment | 29.3 | 1.8 | a | |
| Downstream | 26.9 | 1.3 | a | b |
| Shoal | 22.5 | 1.6 | | b |
| Site Area | 21.5 | 2.9 | a | b |
| **Zinc** | | | | |
| Shoal | 885 | 150 | a | |
| Embayment | 624 | 167 | a | b |
| Site Area | 399 | 265 | a | b |
| Downstream | 272 | 117 | | b |

1. Data were screened for frequency of detection; two-way ANOVA results are presented only if number of detects >50% of samples.
2. '"t Grouping" letters only apply within a particular analyte.
3. Within each analyte, means are sorted from highest to lowest.
4. SEM = Standard error of mean.

TABLE 3-10 METHYLMERCURY AS A PERCENT OF TOTAL MERCURY IN SEDIMENT SAMPLES FROM THE EMBAYMENT AND ADJACENT SHOAL

| Sample ID | Mercury (µg/Kg dry wt) | | Percent Methylmercury |
|---|---|---|---|
| | Methyl | Total | |
| WC-6-SED-A | 1.19 | 4,800 | 0.025% |
| WC-6-SED-B | 2.31 | 20,000 | 0.012% |
| WC-6-SED-C | 0.333 | 9,100 | 0.004% |
| WC-7-SED-A | 1.55 | 6,900 | 0.022% |
| WC-7-SED-B | 1.29 | 52,000 | 0.002% |
| WC-8-SED-A | 2.25 | 8,400 | 0.027% |
| WC-8-SED-C | 0.058 | 111 | 0.052% |
| WC-9-SED-A | 0.471 | 2,500 | 0.019% |
| WC-9-SED-B | 0.719 | 6,200 | 0.012% |
| WC-9-SED-C | 1.63 | 81,000 | 0.002% |

# Appendix A

# O'Brien and Gere Engineers, Inc. (2007)
# Final Remedial Investigation of Wappinger Creek

**FINAL REPORT**

# Three Star Anodizing Site Wappingers Falls, New York Remedial Investigation of Wappingers Creek NYSDEC Site 314058

New York State Department of Environmental Conservation
Albany, New York

November 2007

# FINAL REPORT

Three Star Anodizing Site
Wappingers Falls, New York
Remedial Investigation of Wappingers Creek
NYSDEC Site 314058

***New York State***
***Department of Environmental Conservation***
***Albany, New York***

Douglas M. Crawford, P.E.
Vice President

November 2007

O'BRIEN & GERE
ENGINEERS, INC.

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# 1. Introduction

## 1.1. Site Background

On behalf of the New York State Department of Environmental Conservation (NYSDEC), O'Brien & Gere Engineers, Inc. performed a Remedial Investigation (RI) to evaluate potential environmental contamination associated with the Three Star Anodizing Site (Three Star Site). The Three Star Site is located in the Market Street Industrial Park on the south bank of Wappingers Creek in the village of Wappingers Falls, New York (Figure 1-1). The Three Star Site is a class 2 site (Site No. 314058) on the New York State Registry of Inactive Hazardous Waste Sites. A separate RI report was completed for the Three Star Site (Site RI Report) in 2007 (O'Brien & Gere 2007a). This report presents the results of the RI completed for Wappingers Creek (Creek RI Report).

The Three Star Site consists of an 8.5-acre industrial facility on the south bank of Wappingers Creek (Figure 1-2). Several buildings, and paved parking areas and access roadways are present on the site. The site is located within the 100-year flood plain along an oxbow of Wappingers Creek. The creek discharges to the Hudson River approximately 1.5 miles downstream and it is subjected to tidal influences of the river (NYSDEC 2000). Discharges from the site to the creek occur via surface runoff. In the past, the creek also received industrial waste discharges from the Three Star Site. A former raceway collects runoff from the south portion of the site and drains to a lagoon on the southeast portion of the Three Star Site (Three Star lagoon) and then to the creek (Figure 1-2). A storm water pipe originating in the Village of Wappingers Falls also discharges to the Three Star lagoon.

Historical information for the site was obtained from a number of sources:

- Aerial photographs of the site were obtained from the Dutchess County Soil and Water Conservation District (DCSWCD) for the years 1935, 1946, 1967, 1980, and 1995 (DCSWCD 2000).
- A historic account of activities at the site was provided in *The Birth & Growth of an Old Village, Wappinger Falls 1707-1977* (Popper 1991).
- Memoranda obtained from files of Dutchess County Department of Health provided maps that identified tenants of the site in 1967 and 1971. The memoranda also provided a brief account of activities at the site at that time.
- Sanborn Maps dated 1945 and 1960 also provided some information on past uses of the site.
- A previous Phase I investigation completed in the 1980s provided screening level data of the site (EA 1986).

The Remedial Investigation/Feasibility Study (RI/FS) Work Plan for the site provided a review of these data sources (O'Brien & Gere 2001).

## 1.2. Three Star Site

The Three Star Site has been the location of industrial activities for over 150 years. Primary past uses of the site included dye operations, manufactured gas plant (MGP) operations, and metal plating (O'Brien &

Gere 2001). A number of other smaller industrial activities also took place at the Three Star Site (Section 1.2.4). Dye operations, known as the Dutchess Bleachery, operated at the site between 1832 and 1955 (Section 1.2.1). The Dutchess Bleachery and Wappinger Water, Gas, and Electric Companies operated a coal fired MGP that included activities on the west portion of the subject site from the late 1800s to approximately 1913 (Section 1.2.2). Three Star and later Watson Metals Products Corporation operated a metal plating facility at the site from 1958 to approximately 1995 (Section 1.2.3). This report hereafter refers to Three Star as comprising both of these operations. Information pertaining to the other commercial operations on the Three Star Site, including those conducted since the Three Star operations closed, is presented separately (Section 1.2.4).

In addition, the operations of the buildings in the Market Street Industrial Park located on the north side of the creek included the Dutchess Bleachery among others, this area also represents a potential source of hazardous waste constituents (constituents) to the creek, as discussed in Section 1.3. Other potential source areas are discussed in Section 1.4. Most of the upland area along the creek downstream of the Market Street Industrial Park consists of residential properties and wooded land.

According to information obtained from Dutchess County Department of Health memoranda (DCDH 1967, 1971), several buildings at the Three Star Site had discharges that led to the creek in the past. The buildings on the Three Star Site had floor drains that discharged directly to the creek according to results of tests completed by the Dutchess County Department of Health. Most of the buildings had sanitary facilities that also discharged directly to the creek. In 1971, a survey conducted by Dutchess County Department of Health indicated that the Axton-Cross (bulk chemical sales) building at the Three Star Site had floor drains that discharged to the Three Star lagoon adjacent to the building (DCDH 1971).

Rinse water from plating tanks in the Three Star facility was reportedly discharged to the back of the plant and subsequently flowed to the Three Star lagoon. Paint stripping caustics were discharged to the floor drains of the plant and to the ground behind the facility. In that area, the ground slopes toward the southeast in the direction of the raceway and Three Star lagoon. Page Print Systems, which occupied one of the buildings at the east end of the site (EA 1986), also reportedly discharged rinse water from photographic development rinse sinks. According to a Dutchess County Department of Health memorandum, rinse water was discharged from a pipe to the ground adjacent to the building (DCDH 1971).

From this account of building design and industrial activities it is assumed that previous operations at the site also discharged industrial wastes to the ground, raceway/Three Star lagoon, and Wappingers Creek.

### 1.2.1. Dutchess Bleachery, 1832 to 1958

Dutchess Print Works, also known as the Dutchess Bleachery, operated under several ownerships. The Dutchess Bleachery was the first calico print works in America. The plant was originally located on the north bank of Wappingers Creek and later occupied land that was reportedly filled in on the south side of the creek. By the late 1800s, buildings on the north side of the creek were utilized for the manufacture of acids and chemicals associated with the dye operations and the remainder of the operations were performed in buildings located on the south bank (Popper 1991).

Operations consisted of dyeing and finishing of rough cotton cloth from mills in New England and the south. Aniline dye was also made at the facility during World War I (Popper 1991). Cloth was bleached and dyed at the Bleachery and wastewater was reportedly discharged into a raceway that emptied into Wappingers Creek (EA 1986). Mercuric chloride and arsenic pentoxide may have been used to dye cloth at the facility (NYSDEC 2000).

For powering the facility, the Bleachery used several operations. For a period of time, coal fired steam boilers were used for powering equipment to process cloth (Popper 1991). The MGP also burned coal to produce gas to operate boilers for the facility and the nearby community (Section 1.2.2). After operation of the MGP ceased, boilers were operated by coal until approximately the 1940s when a switch to fuel oil was made (Popper 1991). Several fuel oil tanks were located at the Bleachery (Popper 1991). From historic aerial photographs, it appears that three tanks were located on the north bank of the Bleachery and one tank may have been present as early as 1935 (O'Brien & Gere 2001), suggesting earlier use than the historical account by Popper (1991). Later, a hydroelectric facility was constructed and operated at the upstream portion of the site.

### 1.2.2. Manufactured Gas Plant Operations, circa 1875 to 1913

The main portion of the MGP reportedly operated on the south bank of Wappingers Creek at the subject site (Popper 1991). During operation of the MGP, coal was reportedly barged up the creek from the D&H Canal, and stored in large coal sheds located on the north and south banks of the creek as early as the 1870s (EA 1986, Popper 1991, DCHS 2000). NYSDEC files indicate that approximately 16 acres, beyond the Three Star Site boundary, were filled with coal cinders (NYSDEC 2000). Most of these areas are either paved or developed. In a historical account of the area, Popper (1991) indicated that coal cinders were used to fill behind the retaining wall built on the south bank of the creek at the Three Star Site and an area downstream in the vicinity of Creek Road. Historic maps indicate topographic changes have occurred in those areas as well as the southwest portion of the former Bleachery property on the north bank.

### 1.2.3. Three Star Metal Plating Operations, 1958 to 1995

The Three Star facility (including Watson Metals Products Corporation) anodized aluminum from 1958 to when the facility closed, around 1995. Beginning in 1972, the facility also reconditioned electronic equipment which involved a water rinse of gold components (NYSDEC 2000). Operations also included paint stripping using caustics (DCDH 1971). Three Star plating processes included the use of mild non-etching alkali cleaners, a proprietary mix of sodium dichromate or chromic acid, sulfuric acid with the addition of soda ash to adjust the pH to 5 or 6, and a dying process which required ferric ammonium oxide and synthetic dyes. The paint stripping operation reportedly used chlorinated solvent with fluoride, caustic soda, and kerosene.

The waste from Three Star was reportedly discharged to the Three Star lagoon (DCDH 1967). The sanitary facilities in the Three Star buildings failed a dye test performed in 1971. At that time, wastewater was found to discharge via floor drains to the Three Star lagoon and the creek. Rinse water from plating tanks reportedly discharged to the back of plant, which subsequently drained into the Three Star lagoon (DCDH 1971). The Phase I site investigation was completed in the mid-1980s to evaluate these issues (EA 1986). The Phase I investigation found that the waste stream from the Three Star operations at the site contained sulfuric and phosphoric acids, caustic dyes, soaps, and various trace metals including copper, nickel, chromium, aluminum, and zinc. Processes also included rinsing of gold components. From the mid-1950s to 1980, waste was reportedly discharged to Wappingers Creek at a rate of 20,000 to 60,000 gallons per day (EA 1986).

The Dutchess County Department of Health documented wastewater discharge from Three Star to a drainage raceway and subsequently to Wappingers Creek as early as 1967. The practice of discharging a diluted waste stream directly to the Creek reportedly continued for many years. In 1962, the Three Star lagoon was constructed in the lower portion of the raceway. In 1975, the facility was required to obtain a State Pollution Discharge Elimination System (SPDES) permit to continue discharging via the raceway. In following years (1977 - 1979), NYSDEC documented that Three Star occasionally exceeded SPDES effluent limitations for nickel and copper (NYSDEC 2000). Analyses of Three Star effluent, provided by

the New York State Department of Health (NYSDOH) Division of Laboratories and Research, indicated that metal concentrations were occasionally high with respect to the screening values of the United States Environmental Protection Agency (USEPA) for surface water (NYSDEC 2000).

Subsequently in 1979, NYSDEC issued a consent order that required Three Star to address SPDES excursions (NYSDEC 2000). It is not known how wastewater was handled after that time. However, it appears that the materials were managed on site, since the facility is not connected to the village sewerage system (Kolb 2003). The Village of Wappingers Falls continues to discharge storm drainage via a pipe that drains to the south portion of the Three Star Site. Additional piping that is no longer connected once provided a pathway for the discharge of storm water to the lower portion of the raceway and the Three Star lagoon.

From November 1978 to the summer of 1983, trailers containing powdered raw product in 55-gal drums were stored on site. The powdered product contained in the 55-gal drums included aluminum, oxide, nickel, and cadmium. Reportedly, these materials were from Marathon Battery, formerly of Cold Spring, New York. The trailers were removed under supervision of NYSDEC and the Dutchess County Department of Health in 1983 (NYSDEC 2000).

An inspection of the facility by USEPA in 1993 indicated that it was not in compliance with applicable metal finishing pretreatment standards. The discharge of zinc from the facility was 4.1 mg/l compared to a discharge limit of 2.6 mg/l. A leaking PVC pipe that conveyed wastewater was also identified. The storage of metal waste sludge in concrete holding tanks at the facility was also noted in the report (USEPA 1993).

### 1.2.4. Other Commercial Uses of the Three Star Site

According to historic information, industrial activities at the Three Star Site also included plastic mold injection, felt hat manufacturing, and ammunition production.

Currently, the Three Star Site is one of the properties that compose the Market Street Industrial Park. Realty corporations which lease space to the various tenants reportedly own the majority of the Three Star Site. Several buildings are vacant or used as warehouse space.

Recent tenants of the Market Street Industrial Park consist of the following (O'Brien & Gere 2001):

- Riverview Transmission.
- Axton-Cross Company occupied the building located next to the Three Star lagoon in the 1960s. The company manufactured and distributed chemical products (Popper 1991).
- Fabricare Products occupied the building located next to the Three Star lagoon in the 1970s.
- Cresthill Industries, Inc.
- Lighting and Electronics, Inc.
- Sears mail order was located in one of the main buildings at the site.
- Page Print Systems occupied a building next to the creek, at the east end of the site.

The main current tenant of the Three Star Site consists of a floor tile distributor located in the former Axton-Cross Building. Other tenants include a wood shop in the small building next to the old bridge (East Bridge) and tractor-trailer parking; both located in the Building 12 Area. During RI field activities, an automobile was being restored near Building 17. In May 2004, fire destroyed several buildings (15,16,21,22) on the Three Star Site.

### 1.2.5. Findings from the Three Star Site RI

The findings of the Three Star Site RI are summarized below.

- There is a widespread presence of fill material throughout the site containing inorganic constituents and PAHs. This fill extends to at least 10 ft below grade.

- The two primary sources of contaminated soil that were identified do not appear to be extensive. The former raceway is one source that exhibits inorganic constituents and naphthalene. A dry well area and former drum storage area (dry well area) located south of the Axton-Cross Building is another source which exhibits chlorinated VOCs.

- In addition to the two primary sources identified above, shallow ground water exhibited chlorinated VOCs, PAHs, and inorganic constituents. Although the chemical signatures suggest different sources, no significant concentrations were identified to suggest that a concentrated source area is present.

- Deep ground water also contains inorganic constituents at elevated levels. Although the source of these constituents may be the concentrated material detected in the former raceway, the mechanism for vertical migration of inorganic constituents to deep ground water is not known. Furthermore, transport of inorganic constituents to deep ground water may not be currently active.

- The presence of elevated concentrations of inorganic constituents in deep ground water adjacent to the creek suggests that the creek channel may provide a migration pathway with the potential for ground water to migrate downgradient within the sediment of Wappingers Creek. The volume of ground water seepage to the creek may be small in comparison to creek and river flows reducing the ability to observe these interactions.

- On the MGP portion of the Three Star site, three distinct PAH mixtures were observed in soils:

  A. A PAH composition containing approximately 40% low molecular weight (2-ring) PAHs was observed at MW-4 (14 to 16 ft).

  B. A PAH composition comprising primarily mid-range molecular weight (3 and 4 ring) PAHs was also observed at MW-4 (12 to 14 ft), MW-5, and one of the former gas holders (SB-4-01).

  C. A PAH composition dominated by higher molecular weight (4+ ring) PAHs was observed at two locations: MW-4 (18 to 20 ft), cinders at TP-4.

PAH compositions of mixtures B and C may be “weathered” forms of the PAH composition of mixture A. Over time, the lower molecular weight PAHs may be more readily removed resulting in a shift in composition to the higher molecular weight PAHs that may be more resistant to degradation. The proximal relationship between these three PAH compositions in subsurface soils of MW-4 indicates that the three different PAH compositions can be associated with a single area of the Three Star Site.

## 1.3. Market Street Industrial Park – North Parcel

The portion of the Market Street Industrial Park located on the north bank of the creek opposite the Three Star Site is approximately 5 acres and features old factory buildings, a large storage tank, an abandoned smoke stack, a personal storage building, and paved parking areas (NYSDEC 2000). Similar to the Three Star facility, this facility has been the site of industrial activities for over 150 years. Previous operations on the north bank included Dutchess Bleachery, Hanover Print Works, Olah Associates, Kemp & Beatley, and IBM. What is known about those operations is summarized below.

- During operation of the Dutchess Bleachery, a 1945 Sanborn map identifies one of the buildings on the north side of the creek as the "Chem. Drug Bldg" leading to the inference that textile colors for the Bleachery operations may have been mixed at that location. Another building on the north side of the creek was labeled "Bleach Ho." presumably indicating the location of the bleach house where bleaching operations occurred. As previously cited, the disposal practices of the Dutchess Bleachery were not documented (Section 1.2.1).

- Olah Associates occupied a building on the north side of the creek and reportedly performed plating and stripping operations and discharged rinse water from plating tanks directly to Wappingers Creek.

- Hanover Print Works was located on the north bank of the creek in a building on the west portion of that parcel, according to Dutchess County Department of Heath records. In 1967, Hanover Print Works reportedly discharged approximately 3 quarts of paint per day to a lagoon (north lagoon) located next to the building (DCDH 1967).

The north lagoon covers approximately 0.2 acres on the north parcel of the Market Street Industrial Park. The construction of the north lagoon is not known. In the late 1960s, during operation of Hanover Print Works, the north lagoon reportedly received paint discharges (as discussed above). It is not known when the north lagoon was constructed. It was not visible on historic photographs until 1995 after what appears to have been vegetation removal from around the area. During field activities of the Creek RI, water was observed flowing from a stream into the north lagoon, and from the north lagoon to the tidal creek.

This parcel may have also received fill material containing cinders, as cited previously (Section 1.2.2). Three above ground fuel storage tanks were also present on this parcel during the 1960s. It is not known exactly when the tanks were installed or removed. They are visible on a 1967 aerial photograph, but were not visible on 1946 and 1980 aerial photographs. However, the quality of those photographs prevents conclusive confirmation of the presence or absence of these features.

A realty corporation reportedly now owns the property. According to NYSDEC spill files, a citizen who reported that a 5,000-gal oil tank might be buried on the site logged a complaint in 1999. The citizen complained of oil observed in the creek (O'Brien & Gere 2001).

## 1.4. Other Potential Sources of Constituents to the Tidal Creek

Three additional potential sources of constituents to the tidal creek were identified:

- The village of Wappingers Falls is located upstream (east) of the Market Street Industrial Park including a residential area adjacent to the Three Star Site to the south. The village of Wappingers Falls includes a small business district adjacent to the creek. Wappingers Lake also borders the village. Most of the upland area of the creek located downstream of the Three Star Site consists of residential properties and wooded land.

- A public works garage for the village is located on the east bank of Wappingers Creek, approximately 1,000 ft downstream of the Three Star Site (Figure 1-2).

- The railroad located near the confluence of Wappingers Creek with the Hudson River may contribute constituents associated with the operation of trains or maintenance of the railroad.

- From review of spill files by O'Brien & Gere in 2001, an active leaking underground storage tank (UST) for gasoline was located within one mile of the subject property. It is unknown if this spill has affected Wappingers Creek (O'Brien & Gere 2001).

## 1.5. Physical Features of the Three Star Site

The Three Star Site is located along an oxbow of Wappingers Creek below Wappingers Falls (Figure 1-2). The creek borders the Three Star Site to the north and flows toward the west. A former raceway and residences border the Three Star Site to the south. A steep embankment is located next to the raceway (Figure 1-2).

Stone retaining walls located along the creek bordering the north and south portions of the Market Street Industrial Park are approximately 10 feet (ft) high (Popper 1991). Based on historic information, the site contains fill material from MGP activities that was placed behind the retaining walls (Section 1.2.2). During site excavation in the 1960s for construction of the building formerly occupied by Axton-Cross, coal wastes up to 9 ft deep were reported (EA 1986). The brick remains of two former gas holders are visible on the west portion of the Three Star Site (Figure 1-2). The approximate locations of coal sheds and a boiler house were identified on a sketch of the site dated approximately 1867 (DCHS 2000). According to the historic sketch, the coal shed was located in the vicinity of Building 16 and the boiler house was located in the vicinity of former Building 11 (Figure 1-3).

The raceway located on the Three Star Site was reportedly constructed in the early 1900s by Dutchess Bleachery to allow barge access and hydropower operations (EA 1986). The Dutchess Bleachery and later Three Star also reportedly discharged wastewater to the raceway during their operations at the site (EA 1986). As discussed in Section 1.2.3, according to village records, the facility is not connected to the village sewage system (Kolb 2003). In a 1967 aerial photograph (DCSWCD 2000), what appears to be drainage ditches from buildings were observed due north of the Three Star lagoon and raceway. In the past, the village of Wappingers Falls discharged storm water drainage through the raceway and Three Star lagoon (Section 1.2.3). In the 1986 Phase I Investigation, it was reported that a pipe discharged to a puddle near the south corner of the plating facility, behind Building 17. The standing water in the puddle was sampled and found to contain metals and solvents (EA 1986).

### 1.5.1. Geology and Hydrogeology

Regional reports indicated that, except for a small area, glacial outwash/alluvial sand and gravel deposits that are present along both sides of Wappingers Creek directly underlie the Three Star Site. These deposits average about 2,000 ft in width adjacent to, and south of the Three Star Site, and increase to more than 6,000 ft in width northeast of the Three Star Site. The area of exception is located generally beneath Wappingers Creek in the west portion of the Three Star Site, and is reportedly composed of exposed bedrock and/or less than 3 ft of glacial till overlying bedrock.

Approximately 3,000 ft north-northeast of the Three Star Site, a similar sand and gravel deposit is reportedly 108 ft thick at the Village of Wappingers Falls well field (Well DU-760) located in the vicinity of Route 9D. This sand and gravel deposit is bounded to the east by deposits consisting of at least 3 ft of

glacial till overlying bedrock, and to the west across Wappingers Creek by deposits consisting of less than 3 ft of glacial till and/or exposed bedrock (NYSDEC 2000).

The unconsolidated sand and gravel sediment is underlain by a thrust sheet of bedrock that is predominately composed of autochthonous graywacke and shale of the Ordovician Age Austin Glen Formation. Just west of the site, bedrock consists of limestone and dolostone of the Cambro-Ordovician Age Wappinger Group (NYSDEC 2000).

Based upon the available information, the shallow unconsolidated aquifer of glacial/alluvial origin on either side of Wappingers Creek is designated as the aquifer of concern with regard to the Three Star Site. In general, under natural conditions, the ground water in the aquifer beneath the site will discharge to Wappingers Creek which flows southwest to the Hudson River. The ground water table is approximately equal to the level of the creek. Deep ground water may be expected to migrate along the bedrock located beneath the creek channel before emerging downgradient.

The only wells reportedly completed in the glacial/alluvial aquifer of concern are those of the Wappingers Falls well field located approximately 3,000 ft upgradient and north-northeast of the Three Star Site. There are no known current uses of ground water downgradient of the Three Star Site for private or public water supply (DCDH 2007, Village 2007). The aquifer in the area is bounded to the east and south by a thrust fault, and to the west where the bedrock type changes from graywacke/shale to limestone/dolomite west of Wappingers Creek. Information from wells in the area indicate that the bedrock below the aquifer ranges from 14 ft below grade at Well DU-369 to 40 ft below grade at Well DU-343 (EA 1986).

### 1.5.2. Three Star Lagoon

The Three Star lagoon is reportedly unlined and covers approximately 0.5 acres of the Three Star Site. The Three Star lagoon separates the Main site and MGP site. Village storm water formerly drained to the Three Star lagoon via a pipe located along the former raceway bordering the Three Star Site to the south (Section 1.2.3). The Three Star lagoon reportedly received industrial wastes during operation of Three Star (Section 1.2.3). Prior to that, when the raceway was operational, it may also have received waste from operation of the Dutchess Bleachery and other industrial activities that took place on the Three Star Site (Sections 1.2.1 and 1.2.4). Other industrial wastes may have also drained in the direction of the raceway and Three Star lagoon.

The Three Star lagoon does not discharge to the creek during periods of low flows. However, the bank separating the lagoon from the creek rises only minimally above the creek water level at high tide. It is likely that storm discharges, high tide, or high creek flows cause the lagoon to occasionally fill with creek water and/or drain to the creek.

## 1.6. Physical Description and Hydrodynamics of Wappingers Creek

Wappingers Creek can be divided into the following three distinct areas (Figure 1-2):

- The *upper creek* consists of the portion of Wappingers Creek that is upstream of Wappingers Falls and Wappingers Lake. Discussion of the hydrology of the upper creek is provided in Section 1.6 below.

- *Wappingers Lake* is a water body that receives water from the upper creek and discharges it to the tidal creek via a pipe to a hydrofacility located downstream or over the dam of the lake and Wappingers Falls. Further discussion of Wappingers Lake is provided in Section 1.6.2 below.

- The *tidal creek* is the portion of the creek that extends from downstream of Wappingers Falls to the confluence of Wappingers Creek with the Hudson River. This portion of the stream is so named for the tidal influences it experiences from the lower Hudson River. The tidal creek begins at the hydroelectric facility discharge and the upstream portion of the Market Street Industrial Park. The tidal creek is approximately 2 miles in length and discharges into the Lower Hudson River. Water levels fluctuate approximately 4 ft in the tidal creek during the tidal cycle of the Hudson River. The tidal creek area consists of the section of the creek in the vicinity of the Three Star Site (site area), a shoal area, an embayment and the Downstream section as discussed in Sections 1.6.3 through 1.6.6, respectively below.

The Market Street Industrial Park, including the Three Star Site, is located in the upper portion of the tidal creek below Wappingers Lake and Wappingers Falls (Figure 1-2).

### 1.6.1. Upper Creek

The daily mean flow of the upper creek, which is measured upstream of Wappingers Lake by the United States Geological Survey (USGS), is approximately 84 cfs and ranges from 6.1 to 1,060 cfs based on 71 years of record (USGS 2000). Flood stage occurs at a stage height of approximately 8.0 ft (USGS 2000) which represents a flow of approximately 3,200 cfs. Recorded peak flows for that period are summarized below:

***Peak Flows Recorded for Wappingers Creek***

| *Date* | *Flow (cfs)* | *Stage Height (ft)* |
|---|---|---|
| 1955, August 19 | 18,600 | 19.6 |
| 1938, September 22 | 15,900 | 18.02 |
| 1973, June 30 | 10,400 | 14.12 |
| 1949, January 1 | 7,730 | 12.52 |
| 1955, October 16 | 8,170 | 12.47 |

Note: Discrepancy between flow and stage height readings for the last two entries indicates gauging problems or data adjustments.

Reference: USGS 2000.

Source: O'Brien & Gere Engineers, Inc.

The highest recorded mean daily flow during the past decade occurred on January 20, 1996. On that day, mean daily flow recorded by the USGS was 5,600 cfs (USGS 2000). Flow data for the upper creek is available from the USGS web site (USGS 2000).

### 1.6.2. Wappingers Lake

Lake levels are controlled at the dam. The lake bed contains extensive silt deposits. At the outlet of Wappingers Lake is Wappingers Falls which forms a narrow segment of Wappingers Creek. In that section of the creek, some of the water from the lake is diverted through a pipe to an active hydroelectric facility located on the north bank opposite the upstream portion of the Three Star Site (Figure 1-2). Generally, upper creek flow is similar to the flow downstream of the dam and in the tidal creek. The lake level is maintained to fluctuate between the lake crest and approximately 1½ ft below the dam most of the time. The hydroelectric facility turbines operate between approximately 8 and 320 cfs, maximum. During storm events, creek flow above approximately 320 cfs builds up water behind the dam and may overflow it (Turbish 2002).

### 1.6.3. Site Area

The *site area* consists of an approximately 2,700 lineal ft section of the tidal creek directly adjacent to the Market Street Industrial Park, generally beginning at the foot of Wappingers Falls and ending at the shoal area (Figure 1-2).

In the vicinity of the Market Street Industrial Park, the creek is narrow, approximately 90 ft wide, relative to downstream sections and is bounded on each shore by retaining walls bordering both sides of the creek. Two bridges (referred to as the East and West Bridges) span the tidal creek connecting the Three Star Site to the north parcel of the Market Street Industrial Park. The retaining walls end at the West Bridge. The location of pipes observed along the retaining walls that border the Market Street Industrial Park were recorded in field logs (Appendix A). Downstream of the retaining walls along this section of the creek, the land on the north side of the tidal creek is undeveloped, containing a steep bank with exposed bedrock.

Generally the creek profile is shallowest on the south side of the creek nearest the Three Star Site with water depths less than approximately 5.5 ft. As the creek cross-section progresses to the opposing shore, water depth increases to approximately 12 ft indicating that the majority of creek flow passes along the north portion of the creek. Additionally, the relative narrowness may cause water velocities through this section to be greater than those observed in wider sections in the tidal creek located downstream. The creek bed is composed primarily of rocks and cobble in this portion of the creek; little sediment accumulation was observed.

Following industrial development of the Market Street Industrial Park, the area has been inundated by flood water at least twice. From a historical account and a photograph of the Market Street Industrial Park, approximately 5 ft of water covered the area during the flood of 1902 (Popper 1991). The area was also flooded in 1938 (Popper 1991). From these historic accounts, it is anticipated that flooding of the area would occur when stage heights exceed approximately 13 ft. Therefore, based on information in the preceding table (Section 1.6.1), it is speculated that some flooding of the Market Street Industrial Park may have also occurred in 1955 and 1973.

### 1.6.4. Shoal Area

As the tidal creek passes the MGP Site that is associated with the Three Star Site, it bends toward the south. At approximately 1,000 ft downstream of the West Bridge, the creek widens to approximately 250 ft and meanders. Along the inside bend, is a shoal that consists primarily of rocks and cobbles overlain by silt and sand (Figure 1-2). Downstream of the Three Star Site, the southeast shore contained a sediment deposit in the vicinity of WP16 and downstream. During RI reconnaissance activities (Section 2.1), seepage was observed along the bottom of the creek bank between WP16 and WP25 during an ebb tide.

Compared to the tidal creek in the vicinity of the Market Street Industrial Park, water flow velocity decreases as the tidal creek widens and the cross sectional area increases, facilitating sediment accumulation in low flow velocity areas. The sediment shoal (WP29/WP29A/WP-DOT) continues along the eastern bank past the public works garage (located in the vicinity of WP-DOT) and an unnamed tributary that drains into the creek (WP-CKOUT) located approximately 1500 ft downstream of the site. The shoal area becomes increasingly composed of silt and sand, with fewer observations of pebble and gravel. In this section of the creek, the main flow is located along the opposite shore.

### 1.6.5. Embayment

A shallow embayment (WP-PL) is located along the northern shore of the tidal creek approximately 0.75 mi. downstream of the site following a bend directing the tidal creek generally southwesterly. This

surface water feature measures approximately 240,000 square ft (approximately 800 ft by 300 ft). The bottom of the embayment contains a bed comprising silt and organic matter and the area supports aquatic plant growth throughout. The main flow of the tidal creek bypasses the embayment as the mouth of this water feature runs generally with the west shore of the tidal creek. The embayment experiences minimal water velocity and can generally be described as quiescent.

### 1.6.6. Downstream Section

Downstream of the embayment, the tidal creek widens generally to approximately 600 ft, however widths of up to approximately 800 ft also occur. The bottom materials in this section of the creek are primarily composed of silt and sand, with rock and cobble content increasing with sediment depth. Generally, the main flow in this section of the tidal creek occurs along the approximate centerline and water depths are up to approximately 15 ft. Shallow areas occur along both the northern and the southern shores throughout this section; approximately half of the area in this section of the tidal creek occurs at depths of less than 5 ft. An exception to this occurs along the southern shore approximately 1,000 ft upstream and downstream of the County Route 28 bridge where the profile of the creek quickly deepens. An island is located in the vicinity of the transect WP-T2 in the western half of the creek. A depositional area is located west of the island (WP-OD2).

Upstream of the confluence of the tidal creek with the Lower Hudson River, two bridges create narrows. A bridge carrying County Route 28 (CR 28) and a railroad bridge constrict the lower section of the creek to approximately 140 ft wide and approximately 250 ft wide, respectively. The railroad bridge constriction occurs approximately at the confluence of the tidal creek and the river, and the CR 28 Bridge constriction occurs approximately 1,200 ft upstream of the river. The tidal creek reaches its greatest depth of approximately 25 ft beneath the CR 28 bridge. The tidal creek widens to approximately 800 ft between bridges and silt and sand overlaying rock and cobble continue in this area.

## 1.7. Conceptual Site Model of Wappingers Creek

The conceptual site model of the Wappingers Creek provided below identifies potential sources of constituents and migration pathways that were evaluated during the Site RI (O'Brien & Gere 2007a) and Creek RI.

### 1.7.1. Potential Sources

Several potential sources of constituents to the creek have been identified:

- Background concentrations of inorganic constituents and PAHs can be present from both natural and anthropogenic sources in the watershed. Background concentrations of VOCs, pesticides, PCBs, and inorganic constituents may also occur due to anthropogenic sources. Levels of constituents in Wappingers Lake were used as representative of background levels. In addition, runoff from the village is discharged to the Three Star lagoon and then to Wappingers Creek.

- The Market Street Industrial Park included several operations in the past that could have contributed to the levels of constituents detected in the creek surface water and sediment (Table 1-1). On the south portion of the Market Street Industrial Park, the Three Star Site was found to contain VOCs, SVOCs (primarily PAHs), and inorganic constituents associated with past activities (O'Brien & Gere 2007a). Operations similar to those of the Three Star Site also took place on the north parcel of the Market Street Industrial Park (Section 1.3).

- The public works garage may have been the location of storage and operation vehicles. Activities associated with these uses may have included the storage of fuels or wastes associated with the maintenance of vehicles. These activities may have VOCs and PAHs associated with them.

- The tributary located along the south shore of the tidal creek in the vicinity of the shoal area could also transport constituents present from the watershed to the tidal creek.

- Fill material containing cinders is present on the Three Star Site, and potentially present on the north parcel of the Market Street Industrial Park and under Creek Road in the vicinity of the shoal area. Cinders would be expected to contain PAHs and inorganic constituents

- The railroad located at the downstream terminus of the tidal creek may have PAHs associated with the operation of trains or the railroad ties preserved with creosote.

The properties of the chemicals discharged from the potential sources to the creek and physical attributes of the creek contribute to the fate and transport of the chemicals once exposed to the environment (Table 1-1).

From review of site topography, industrial wastes discharged from Three Star Site buildings to surface soils would primarily drain to the south and west toward the raceway and Three Star lagoon and then to the creek (Figure 1-2). Contamination of surface and subsurface soils, ground water and surface water and sediment of the Three Star lagoon were investigated and reported in the Site RI Report (O'Brien & Gere 2007a). In addition to suspected discharges to the creek, historic records indicate that the site was flooded at least three times since 1900. Flooding can mobilize contaminants from the site to the creek.

The Creek RI evaluated the environmental media in the creek for constituents potentially related to past site activities. Sampling and analysis was completed in the Creek RI to screen for such constituents.

### 1.7.2. Factors Affecting Bioavailability of Constituents in Sediment

Bioavailability controls the potential exposures of chemical constituents in soil and sediment to humans and wildlife (NRC 2001, USEPA 2005). Consistent with recent guidance for management of sediment sites (NRC 2001, USEPA 2005, USN 2002), several mitigating factors ultimately control potential exposures rather than total concentrations of the constituents. A conceptual model of processes within an aquatic system that affect constituent availability is provided in Figure 1-4.

Physiochemical interactions between constituents and sediment particles can reduce the availability of some constituents to cause harm to humans and ecological populations. Aging of the contaminated soil and sediment can accentuate this process (NRC 2001). Several factors participate in this phenomenon:

- Constituents reside as bound form (particulate matter including soil, sediment, and organic matter), released form (dissolved in a liquid or gas phase), or associated with a living organism (NRC 2001). Constituents in released form are generally orders of magnitude lower in concentration than in sediment (Schwarzenbach et al. 1993).

- Transport of constituents in an aquatic system can result from hydrodynamic processes. Physiochemical transformations such as speciation shifts due to oxidation-reduction reactions, hydrolysis, acid-base reactions, and photolysis can also transport constituents (NRC 2001).

- Binding of constituents to solid matrices (*e.g.* sediment) can occur by adsorption onto the solids or natural organic matter, or by change in form as by bonding shifts or precipitation (NRC 2001).

Absorption within the solid matrix can also occur. Sediment types also affect the extent of constituent associations with sediment.

- Compartmentalization can isolate constituents in sediment from receptor populations reducing the potential for exposures. In addition to binding of constituents discussed above, burial can also remove constituents from potential contact with receptor populations. For burial to be effective, the sediment needs to be stable.

The outcome may be sequestration of a constituent over time by the incorporation of the constituent into more stable solid phase materials (NRC 2001). However, the nonsequestered fraction may remain available for uptake by organisms. Actual uptake is driven by duration and rate of exposure.

## 1.8. Wappingers Creek RI objectives

The objectives of the Creek RI are presented below:

- Observe current conditions of the Wappingers Creek and evaluate potential migration pathways of constituents.
- Perform screening level assessment of potential site impacts to fish and wildlife in a FWIA through Step IIC.
- Complete a pathway analysis for qualitative evaluation of potential human exposures.
- Evaluate surface water in Wappingers Creek for potential impacts to water quality due to migration of contaminants via surface runoff or ground water seepage from the Three Star Site.
- Evaluate sediment of Wappingers Creek for potential impacts from Three Star Site activities and other potential sources.
- Identify spatial patterns of constituents in sediment.
- Evaluate composition of PAHs in sediment compared to Three Star Site sources.
- Following a thorough delineation of the Creek, a feasibility study (FS) will be completed, if necessary and appropriate.

The investigation of Wappingers Creek was completed according to State Superfund guidance and the RI/FS Work Plan and Addendum (O'Brien & Gere 2001, 2002).

## 1.9. Approach

Surface water and sediment samples collected for the RI were analyzed for SVOCs including tentatively identifiable compounds (TICs) of the Target Compound List (TCL) and inorganic constituents of the Target Analyte List (TAL). Additional analyses consisted of the following:

- A subset of the samples was analyzed for TCL VOCs, pesticides and polychlorinated biphenyls (PCBs).

- Sediment samples included analysis of hexavalent chromium and total organic carbon (TOC). Amenable cyanide (considered to be the biological available fraction of cyanide) was also analyzed in sediment samples where total cyanide was detected. Three sediment samples were also analyzed for grain size distribution.

- Surface water field analyses included pH, conductivity, temperature, turbidity and salinity. Surface water laboratory analyses also included total suspended solids (TSS), dissolved organic carbon (DOC), hardness, and alkalinity.

O'Brien & Gere Laboratories in Syracuse, New York analyzed the samples, except for samples collected for analysis TOC, sediment and physical parameters, and hexavalent chromium analyses completed in 2001. Columbia Analytical Services (Columbia) in Rochester, New York analyzed sediment samples collected in 2001 for hexavalent chromium. TOC samples were analyzed by Columbia, or Ecology & Environment, Inc. in Lancaster, New York. PW Labs in Syracuse, New York analyzed physical parameters in sediment.

# 2. Methods

The field activities for the Creek RI were conducted from April to July 2001, May 2002, and May 2003 according to the Work Plan and Work Plan addendum (O'Brien & Gere 2001 and 2002, respectively). Field activities consisting of a creek reconnaissance and investigating surface water and sediment are presented separately (Sections 2.1 through 2.3, respectively). A summary of sample quantities collected in Wappingers Creek is presented in Table 2-1. A discussion of data interpretation methods is also presented (Section 2.4) followed by a summary of health and safety procedures that were maintained during field activities (Section 2.5).

## 2.1. Creek Reconnaissance

Creek reconnaissance activities were completed to identify overall creek bed characteristics. Specifically, of interest were the distributions of sediment depositional areas, identification of pipes and tributaries, and observations of bed materials (*e.g.* silt, sand, gravel, rocks, and cobbles). A bathymetric map obtained from NYSDEC was referenced during site reconnaissance activities (Exhibit A). Bathymetry data of the tidal creek bed at the Market Street Industrial Park bridges collected for the Creek RI are presented in Appendix B.

The first reconnaissance of the tidal creek was completed from the site to the downstream embayment on May 8 and 9, 2001. The lower portion of the tidal creek was observed during a second reconnaissance, completed in May 2002, extending from the embayment to the confluence of the tidal creek with the Hudson River, approximately two miles downstream of the Three Star Site.

An initial reconnaissance was conducted during installation of marker stakes along the shore. Then, sediment depths were investigated by probing with a steel rod to observe and evaluate differences in sediment type. In areas where rock and cobble were present as the primary creek bed material, probing was not completed at set intervals. Rather, overall observations were used to judge probing needed to evaluate sediment type. Sediment probing was also observed by the NYSDEC. During RI reconnaissance activities, seepage was observed along the bottom of the creek bank between WP16 and WP25 during an ebb tide. Logs documenting sediment reconnaissance activities are provided in Appendix A.

## 2.2. Surface Water Investigation

Two surface water sampling events were completed for the Creek RI consisting of low flow surface water and storm event sampling. Low flow conditions increase the contact time for surface water and sediment interactions to occur. In particular, in other creek or river systems low flow conditions during summer months have been associated with concentration increases of constituents that correspond to temperature increases within the system. In contrast to low flow events, storm events increase the volume of surface water and the potential for resuspension of sediment with subsequent downstream transport. Sampling of each of these types of events is intended to screen surface water concentrations during these two critical time periods.

The low flow event sampling was completed on July 12, 2001 from 06:10 to 11:40. The tidal portion of the creek was sampled from 08:30 to 11:40. Flows measured at the USGS gaging station located upstream of Wappingers Lake were approximately 50 cfs during the low flow event. Sampling was completed during an ebb tide. Peak tide at Poughkeepsie, located approximately 6 miles upstream on the confluence

of Wappingers Creek with the Hudson River, occurred at approximately 05:55 and low tide occurred at approximately 12:26 on that day.

The storm event sampling was completed on May 14 and 15, 2002. On May 14, 2002, samples were collected from 15:30 to 16:45, with sampling of the tidal portion of the creek from 15:30 to 16:45. Sampling on that day was completed during an approximate high slack tide period. Peak tide at Poughkeepsie on May 14, 2002 occurred at approximately 15:03 and low tide occurred at approximately 21:17. On May 15, 2002, samples were collected from 07:45 to 10:30 with sampling of the tidal portion of the creek from 07:45 to 08:30. Sampling was completed during a flow (incoming) tide. On May 15, 2002, low tide at Poughkeepsie occurred at approximately 02:46 and high tide occurred at approximately 10:07. Flows measured at the USGS gaging station located upstream of Wappingers Lake ranged from approximately 500 to 900 cfs during the storm event. Water was observed flowing over the Wappingers Lake dam during the storm event sampling.

### 2.2.1. Sample Locations

Locations sampled for low flow and storm events are identified in the table below.

***Surface Water Sampling Locations***

| *Sample ID* | *Sampling event* | *Description* | *Purpose* |
|---|---|---|---|
| ***Wappingers Creek*** | | | |
| Rt9D | B | Wappingers Lake | Background |
| WP5-SW | B | East Bridge | upstream boundary of site |
| WP10-SW | B | West Bridge | adjacent to the site |
| WP13-SW | L | Center of creek | Downstream of Three Star lagoon |
| WP18-SW | L | Center of creek | Downstream of MGP site |
| WP35-SW | L | Center of creek | Downstream of the site |
| Rt. 28 Bridge | S | Center of creek | Approximately 1,000 ft upstream of the confluence of the creek with the Hudson River |
| ***Three Star Lagoon*** | | | |
| LG-SW | S | upstream | Evaluate constituents draining into Three Star lagoon. |

Notes:
L = Low flow sample locations;
S = storm event sample locations;
B = samples collected for both sampling events

The background station identified in the Work Plan (O'Brien & Gere 2001) as the Route 9D Bridge was moved to Wappingers Lake. The Route 9D Bridge was abandoned for sampling because the height from bridge to creek and shallow water with swift current at the location complicated collection of representative samples from this location.

Coordinates of sediment sampling locations that were surveyed or recorded using a global positioning system (GPS) are summarized in Appendix C.

### 2.2.2. Sample Collection Procedures

Surface water samples were collected as depth-integrated composites of aliquots collected from the surface, middle, and lower portions of the water column (O'Brien & Gere 2001). The samples were collected using a Kemmerer sampler. Field logs documenting surface water sampling activities are presented in Appendix A.

### 2.2.3. Field Analyses

Water column samples were analyzed in the field for pH, conductivity, dissolved oxygen, salinity, and temperature. Field instrumentation operating procedures were provided in the operations manual for the equipment. Water column field analytical data, consisting of instrument calibration and environmental data, were recorded in field logs (Appendix A).

### 2.2.4. Laboratory Analyses

O'Brien & Gere Laboratories in Syracuse, New York analyzed water column samples for TCL VOCs, SVOCs, pesticides, PCBs, TAL inorganic constituents, TSS, DOC, hardness, and alkalinity. TCL VOC and SVOC analyses included identification of TICs.

## 2.3. Sediment Investigation

The sediment investigation was performed to identify spatial patterns of constituents in the tidal creek that may be associated with the Three Star Site and other potential sources (Section 1.4). Surface sediment samples from 0- to 6-inch interval were collected to represent the zone of highest ecological significance. Sediment samples below 6 inches deep (underlying sediment) were also collected from areas where unconsolidated material was present that allowed collection by manual methods. The underlying sediment samples were collected to represent past deposition that may become accessible to aquatic organisms, if it were disturbed. Background samples from upstream of the Three Star Site were also collected for comparison to support the evaluation of potential site impacts.

The investigation of sediment in Wappingers Lake and Wappingers Creek was completed from May 8 through 10, 2001 and May 12 through 14, 2003. Field logs documenting sediment sampling activities are presented in Appendix A.

### 2.3.1. Sample Locations

Locations where sediment samples were collected are identified on Figure 1-2. Sediment collected from Wappingers Lake provided samples for evaluating background concentrations. Five locations were sampled along the southern portion of the lake. In addition, three sediment cores were collected as cluster core samples from the south portion of the lake near the village park. The cluster core samples were collected from an area approximately 5 ft in diameter.

Sediment from Wappingers Creek was sampled from areas in the vicinity of the site and downstream. Generally, the creek bed in the vicinity of the site, locations WP-01 through WP-18, contained large amounts of rock and cobble along with sediment. Generally, sampling at these locations was completed for surface sediment collected from the 0- to 6-inch interval. Refusal of the sediment sampling device against rocks and cobbles prevented further depth penetration and sediment recovery. Sediment deposits with deeper sediment were located downstream of the site at a shoal located at WP-29 and an embayment located at WP-PL (Figure 1-2). Subsurface sediment samples were collected from those locations.

### 2.3.2. Sample Collection and Processing

Sediment samples were collected and processed according to the work plan (O'Brien & Gere 2001). Samples were collected using a manual push core using polycarbonate tubing, or a soil auger modified with a polycarbonate shield. Sediment cores were processed using a core extrusion device to push the sediment out of the core tube. Surface 0- to 6-inch samples were obtained from each location. At locations where additional sediment was present, additional 6-inch sample intervals were collected. Background samples consisted of 0- to 6-inch surface samples and deeper sediment.

### 2.3.3. Laboratory Analyses

Sediment analyses consisted of TCL VOCs and SVOCs (including TICs), TCL pesticides and PCBs, and TAL inorganic constituents (Table 2-1B). Total cyanide was analyzed with a one-week turn around time. If total cyanide was above the screening value of 0.1 mg/Kg (Eisler 1991), amenable cyanide was also analyzed.

Sediment samples were analyzed by O'Brien & Gere Laboratories in Syracuse, New York, except for samples collected for analysis of hexavalent chromium of samples collected in 2001, and TOC. For samples collected in 2001, hexavalent chromium samples were analyzed by Columbia Analytical Services in Rochester, New York. TOC samples were analyzed by Columbia (2001) and Ecology & Environment (2001 and 2003).

## 2.4. Data Interpretation

Data interpretation completed for the RI consisted of a data quality review which was completed according to the QAPP (Section 2.4.1), interpretation of constituent classes (Section 2.4.2), and comparison of data to screening values for surface water and sediment (Sections 2.4.3 and 2.4.4, respectively). Then, spatial trends observed in the creek were evaluated and a human health pathway analysis was completed (Sections 2.4.5 and 2.4.6, respectively). Analytical data were provided in laboratory reports (O'Brien & Gere Laboratories 2001, 2003; Columbia 2001; Ecology & Environment 2001, 2003).

### 2.4.1. Data Quality Review

Review of the data quality indicated that the RI data is acceptable for the intended uses. Laboratory data quality was evaluated according to New York State requirements for data usability summary reports (DUSR). The data quality review resulted in some of the data being qualified as estimates (J). Consistent with data validation guidance, the qualification of data as estimated does not affect the end uses of the data. Results of the DUSR were incorporated into data summary tables. Copies of the DUSRs completed for the Phase I RI and Phase II RI were presented separately (Potak 2001, 2003).

From review of the DUSRs completed for this RI, the data quality is acceptable for intended uses. Minor laboratory problems resulted in some data being qualified. Data qualified as estimates (J) are acceptable for intended uses. The data quality issues identified are summarized below:

- Acetone and methylene chloride were laboratory contaminants detected in some of the VOC blank samples. Acetone was detected in samples collected in 2001 and 2003 (Potak 2001, 2003). Methylene chloride was detected in samples collected in 2003 (Potak 2003). The presence of laboratory contaminants complicates the interpretation of these compounds.

- Evaluation of hexavalent chromium concentrations is complicated by matrix interferences. For several samples, the recoveries of matrix spike/matrix spike duplicates for hexavalent chromium were lower than expected. However, results of laboratory control spikes indicated that the laboratory analytical performance was within acceptable ranges providing evidence that the soil matrices were responsible for these anomalies. The laboratory noted that low matrix spike/matrix spike duplicate recoveries might be due to reduction of hexavalent chromium in the soil matrix. These interferences result in a high level of uncertainty associated with undetected hexavalent chromium results. Total chromium data provide additional data to evaluate the potential levels of hexavalent chromium in the soil. It is not unusual for evaluation of soil and sediment matrices to be complicated by such factors. Both labs used for analysis of hexavalent chromium samples encountered these problems.

A complete review of data quality is provided in the DUSR (Potak 2001, 2003).

### 2.4.2. Interpretation of Analytical Constituent Classes

Site data was compared to screening values according to provisions of the work plan and addendum (O'Brien & Gere 2001, 2002). Interpretation of data trends was aided by generalization of analytical testing results:

- Interpretation of VOC data included calculation of total VOC and total benzene, toluene, ethylbenzene, and xylene (BTEX) concentrations and the identification of principle components. The presence of BTEX compounds can be associated with hydrocarbon sources. Chlorinated VOCs are another class of VOCs that may be indicative of industrial solvents.

- Interpretation of SVOC data included calculation of total SVOC concentration. SVOCs that are commonly associated with combustion occur as mixtures of PAHs consisting of 16 analytical compounds (Table 2-2). Total and carcinogenic PAH concentrations, and benzo(a)pyrene equivalents (BaP equivalents) were also calculated to evaluate the concentrations of PAHs in site media. The BaP equivalents were calculated according to NYSDOH methods for seven carcinogenic PAHs (Table 2-2).

- Evaluation of inorganic data focused on inorganic constituents that are not common geologic elements. Common geologic elements (consisting of beryllium, calcium, magnesium, potassium, and sodium) occur naturally in wide concentration ranges and other inorganic constituents are more suitable for evaluation of potential site impacts. As such, the common geological elements were generally not evaluated beyond tabulation of results.

Concentrations of SVOCs, in particular PAHs, and inorganic constituents are ubiquitous in the environment and comparison of site data with background data (off site) was used to evaluate potential incremental concentrations due to past site activities.

PCBs and pesticides were analyzed in samples collected during the first phase of the RI and were screened out from further evaluation. PCBs were not detected in sediment and pesticides concentrations were generally consistent with observations of background levels.

### 2.4.3. Screening of Surface Water Data

The RI data were compared to screening values according to media-specific data quality objectives outlined in the QAPP (O'Brien & Gere 2001).

Surface water data were evaluated using screening values provided in the *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Division of Water Technical and Operational Guidance Series 1.1.1* (NYSDEC 1998). Concentrations were compared to screening values for Class C waters consistent with the water quality designation of the creek.

### 2.4.4. Screening of Sediment Data

Sediment data were compared to screening guidance provided in the *Technical Guidance for Screening Contaminated Sediments* (NYSDEC 1999). For organic compounds in sediment, analytical concentrations were normalized to sample TOC concentrations to adjust each constituent concentration in an adaptation of the sediment guidance, as discussed below. This approach assumes that equilibrium partitioning occurs in soil media. More recent USEPA guidance suggests that a weight of evidence approach may be more indicative of sediment quality (USEPA 2005). Concentrations of inorganic constituents in sediment were

compared to reference values for typical background concentrations, as provided in the screening guidance.

Some of the sediment samples collected in 2003 were not analyzed for TOC. To estimate a TOC concentration for those samples, samples collected from other depth intervals at the same sample location were compared to the average TOC of 5 mg/Kg. If the TOC in the comparison sample was 5 mg/Kg or greater, a TOC concentration of 5 mg/Kg was utilized. If the TOC was less than 5 mg/Kg in the comparison sample, a TOC of 1 mg/Kg was utilized.

Evaluation of sediment data was completed as listed below:

- A statistical evaluation of background data completed according to DER-10 guidance (NYSDEC 2002) is presented in Appendix D. Outliers identified by statistical evaluation were not included as maximum value for screening. In such instances the calculated upper confidence level (UCL) was applied.

- The creek is primarily fresh water; however, occasional tidal transport of brackish water from the Hudson River has occurred during low flow periods. Sediment data collected for the Creek RI were evaluated using fresh water screening values.

- For each environmental sample of sediment analyzed for organic compounds, a screening concentration (SC) was calculated as the analytical concentration (C) normalized to organic carbon content (OC) to allow comparison of location specific results with the NYSDEC screening values. The NYSDEC screening values for organic compounds are presented as screening values normalized for a sediment containing 1% TOC. The equation used for the calculation of SC was adapted from the NYSDEC 1999 guidance, as follows:

SC = C/%TOC

where:

SC = screening concentration (µg/gOC)
C = analytical concentration reported by laboratory (mg/Kg)
%TOC = percent total organic carbon (gOC/Kg)

For example:

To calculate the benzo(a)pyrene SC for WP-LK1 (Table 4-2), where the C is 0.2 mg/Kg and the %TOC is 0.102 gOC/Kg, the C was divided by the %TOC:

SC = 0.2 mg/Kg/0.102 gOC/g * 1000 µg/mg * 1kg/1000g
= 2 µg/gOC

This result is reported as the SC in Table 4-2. The result is greater than the NYSDEC screening value of 1.3 µg/gOC for the protection of human health. Consistent with NYSDEC guidance (1999), the SC for organic compounds were calculated for sediments with TOC concentrations in the range of 0.2% to 12%.

- Inorganic data were screened with lowest effect level (LEL) and severe effect level (SEL) screening values as defined by NYSDEC (1999). The order of magnitude above SEL screening values was also calculated to evaluate the contributions of the specific constituents to overall sediment quality.

- In the absence of New York State screening values, alternative ecological screening values were applied as discussed in the Fish and Wildlife Impact Analysis (FWIA).

Results of these interpretive efforts are reported in subsequent sections of this report.

### 2.4.5. Trend Analysis of Sediment Data

Spatial trends were evaluated using box plots constructed using Analyse-it® software. The occurrences of constituents were evaluated using parametric and nonparametric tests for the background and five sections of the tidal creek. Further analysis of spatial trends of inorganic constituent and PAH composition data of sediment were completed as discussed below. For both of these evaluations, surface and subsurface sediment were considered separately.

Inorganic constituents

To evaluate the levels that inorganic constituents exceed NYS screening values, concentration data for each inorganic constituent was divided by the associated screening value to obtain screening value normalized data. This approach allows comparison of the results of each inorganic constituent to identify the particular constituent that exceeds its screening value by the highest amount at a particular location.

PAH composition analysis

The PAH composition of sediment in the creek was evaluated by converting concentration data for individual compounds to weight percent concentration data. This approach allows comparison of the PAH signatures of samples with different total PAH concentrations.

### 2.4.6. Qualitative Exposure Assessment

Interpretation of screening evaluations needs to include recognition that total chemical concentrations do not necessarily represent potential exposures. As discussed in Section 1.7.2, the bioavailability of a constituent is controlled by a number of physiochemical factors.

To further evaluate potential wildlife exposures, a FWIA was completed that included identification of constituents of potential ecological concern (COPEC) for representative species consisting of a mink and great blue heron.

To evaluate potential human exposures to constituents in the creek, a qualitative exposure pathway analysis was completed for the Three Star Site which included Wappingers Creek. The exposure pathway analysis was completed according to NYSDOH guidance (NYSDEC 2002).

## 2.5. Health and Safety

The RI field activities were conducted according to health and safety procedures provided in the site-specific health and safety plan (O'Brien & Gere 2001).

# 3. Surface Water Data

Constituents were generally below screening values for low flow and storm event sampling events. However, during the storm event, some inorganic constituents were detected in the water column. In general, the occurrence of these constituents in the water column upstream of the site at levels consistent with those of downstream suggests that their presence is not related to the Three Star Site. The source of the cyanide detected in the water column in the vicinity of the site is not clear. This section presents a discussion of surface water data for Wappingers Creek consisting of flow and total suspended solids data (Section 3.1), field parameters (Section 3.2), and laboratory results (Section 3.3).

## 3.1. Flow and Total Suspended Solids Data

During the low flow event a flow of approximately 50 cfs was measured by USGS in the upper Wappingers Creek representing the non-tidal portion of the creek (Exhibit B). The sampling of the creek for the RI was completed during an ebb tide, so flow in the tidal portion of the creek may have been slightly higher than that observed by USGS in the upper creek. During the low flow event, TSS was less than 5 mg/L at five of the six locations sampled. At the West Bridge located on the Three Star Site (Site Bridge 2) the TSS was 5 mg/L and less than 5 mg/L in duplicate samples collected from that location. The detection of these levels of TSS is interpreted as similar to results obtained at other locations.

During the storm event, flows ranging from 500 to 900 cfs were measured by USGS in the upper creek and water was observed to be flowing over the dam during the storm event sampling. During the first round of sampling for the storm event, samples were collected during the approximate slack period of the high tide. TSS was 18 mg/L in both samples collected from the tidal creek representing concentrations over the length of the tidal creek from the vicinity of the Three Star Site (Site Bridge-1) to the approximate confluence with the Hudson River downstream at the Route 28 Bridge (Route 28 Bridge-1). At that time the TSS in Wappingers Lake was 13 mg/L and 8 mg/L in duplicate samples collected from that location.

During the second round of sampling for the storm event, samples were collected during a flow tide which tends to decrease or cancel the non-tidal flows from the upper portion of the creek. TSS in the creek was 12 mg/L at the West Bridge (Site Bridge–2) and 20 mg/L in the vicinity of the approximate confluence of the creek with the Hudson River (Rt. 28 Bridge-2). At that time, TSS in Wappingers Lake was 6 mg/L. TSS was not detected in the surface water sample collected from the Three Star lagoon outlet with the concentration reported as less than 5 mg/L.

## 3.2. Field Parameters

Field parameters were within typical ranges with variations associated with tidal and seasonal influences (Table 3-1A,B). For the low flow sampling event completed in July 2001, average readings for conductivity, temperature, dissolved oxygen, and salinity were 0.46 µsem/cm, 23 $C^o$, 6.8 mg/L, 0.0 %, respectively and the median pH was 6.9. For the storm event sampling completed in May 2002, average readings were 0.26 µsem/cm, 12 $C^o$, 10.4 mg/L, 0.0%, respectively, and the median pH was 7.8.

## 3.3. Laboratory Results

For both sampling events, surface water concentrations of analytes tested were generally below screening levels with three exceptions:

- During the low flow event, the sample collected from the West Bridge of the Three Star Site (WP5-SW) contained trace levels of acetone, at 3 µg/L, below the screening value (Table 3-2A). The origin of the acetone in that sample is unclear and it may be due to sample contamination (Section 2.4.1), although anthropogenic sources can not be ruled out. Nonetheless, the detection of acetone at the background station suggests that its presence is not related to the Three Star Site. VOCs were not detected during the storm event sampling (Table 3-2B).

- Inorganics were below screening values during low flow sampling (Table 3-3A). However, during the storm event sampling, aluminum, iron, and silver concentrations were detected above the screening values both in Wappingers Lake (upstream of the Three Star Site) and in the tidal creek (Table 3-3B).

- Cyanide was detected at the West Bridge and Route 28 Bridge sampling locations during the second round of storm event sampling (Table 3-3B). At the West Bridge, cyanide was detected at 20 µg/L. which is approximately four times the screening value for free cyanide of 5 µg/L that is intended to protect fish propagation. In the vicinity of the Route 28 Bridge, cyanide was detected in the water column of the creek at approximately 10 µg/L. Cyanide was not detected during the low flow sampling event or the first round of sampling completed for the storm event (Table 3-3A).

Analytical results are presented in Appendix E. VOC and SVOC TICs identified during sample analyses are presented in laboratory reports (O'Brien & Gere Laboratories, Inc. 2001, 2003).

# 4. Sediment Data

Sediment at the background locations and in the tidal creek contained inorganic constituents above screening levels. In the tidal creek, the concentrations were much higher relative to background levels detected, with the highest concentrations detected in the deeper sediment of the shoal and embayment. In the sediment samples collected from the shoal of the tidal creek, PAHs and dibenzofuran were detected above screening levels. The results of the sediment investigation are presented for background data (Section 4.1) and the tidal creek (Section 4.2), separately.

Detected concentrations in sediment compared to screening values are presented in Tables 4-1 through 4-3. The constituents detected consisted primarily of inorganic constituents (Table 4-3) and PAHs (Table 4-2), although there were also occasional detections of other SVOCs (Table 4-2), and trace levels of VOCs in the vicinity of the Three Star Site (Table 4-1). The sporadic detection of pesticides was consistent with background levels (Appendix E and Table 4-4) and no further evaluation was completed. PCBs were not detected in sediment and were screened out from further evaluation (Appendix E). Tables provided in Appendix E present the complete set of sediment data collected for the RI. The discussion of sediment data below focuses on sediment samples collected from the surface, 0- to 6-inch, interval as the zone of highest ecological significance. TICs of VOCs and SVOCs that were detected are presented in laboratory reports (O'Brien & Gere Laboratories, Inc. 2001, 2003).

## 4.1. Background - Sediment Data

In sediment samples collected from Wappingers Lake, VOCs, pesticides, and PCBs were generally not detected at concentrations above screening values whereas PAHs and inorganic constituents were frequently present above screening values.

- VOCs were generally not detected in sediment samples, except for trace levels that were below screening values and the occasional detection of acetone and methylene chloride above screening levels (Table 4-1). The detection of acetone and methylene chloride may be attributed to the presence of laboratory contaminants (Section 2.4.1).

- Pesticides and PCBs were not detected in surface sediment (Appendix E) and deeper sediment contained sporadic detections with several pesticides above screening values (Table 4-4).

- SVOCs were present as PAHs in sediment (Table 4-2). Two of the six samples contained total PAHs slightly above the Long & Morgan screening value of 4 mg/Kg cited by NYSDEC guidance (NYSDEC 1999). In each of the background samples, individual PAH concentrations were above New York State screening values for the protection of human health (NYSDEC 1999). Benzo(a)pyrene up to 0.5 mg/Kg also slightly exceeded the ecological screening value of 0.44 mg/Kg used for screening in the FWIA (Section 5.1.1).

- Inorganic constituents consisting of zinc and lead were detected in sediment at concentrations that ranged from levels similar to LEL screening values to infrequent detections that were above SEL screening values (Tables 4-3 and 4-5). In addition, in each of the sediment samples analyzed, copper, mercury, and nickel were detected at concentrations above LEL screening values. Arsenic, cadmium, and chromium were detected at concentrations ranging from below their respective LEL screening values to slightly above them. Total cyanide was detected in one of the eight samples collected. However, the biologically available form of cyanide (amenable cyanide) was not detected. Iron and

manganese are common minerals and the detection of concentrations above the LEL screening values may be associated with local minerals (Table 4-5).

- The pH of sediment samples ranged from 7.3 to 8.1.
- TOC in background sediment samples ranged from 3.4 to 10%.

## 4.2. Wappingers Creek – Sediment Data

The presentation of sediment results provided in this section is focused on the evaluation of potential sources as inferred from concentrations of constituents in sediment that exceeded background levels. The results include comparisons to LEL and SEL screening values and background data used to support the evaluation of potential sources. Further discussion of the screening of data for evaluation of potential ecological considerations is provided in Section 5.1.

Sediment data for Wappingers Creek are compared to LEL and SEL screening values in Tables 4-1 through 4-3. In sediments of the tidal creek, PAHs, dibenzofuran, and inorganic constituents were detected above screening values (Table 4-6). Mercury was detected in sediment at the highest levels above screening values. Both surface and deeper sediment of the creek are affected by the presence of these constituents. Generally, the highest concentrations of these constituents were located in the shoal (WP-29, WP-29A, and WP-DOT) and the embayment (WP-PL) in sediment greater than 6 inches deep.

Discussions of sediment data below compare the creek data with screening values for sediment of freshwater systems. Physical description of sediment and results of grain size analyses are presented in Section 4.2.1. Analytical results for VOCs, SVOCs, pesticides, and inorganic constituents are presented in Sections 4.2.2 through 4.2.5, respectively. PCBs were not detected in sediment and results are presented in Appendix E.

### 4.2.1. Physical Parameters, including Grain Size, Total Organic Carbon, and pH Data

Physical descriptions of sediment observed during the creek bed reconnaissance and sediment sampling are presented in Table 4-7. Grain size results for four samples collected from Wappingers Creek are presented in Exhibit C. Grain size measured the sediment sample collected from the embayment (SEDCORE-2) and the two samples collected from the downstream section of the tidal creek (SEDCORE-1, WP-T3A) consisted of primarily sand with approximately 30 to 45% consisting of silt and clay. At the northern portion of the shoal area (SEDCORE-4), the sediment consists of primarily gravel and sand with silt and clay composing less than 20% of the sediment.

TOC data for locations in the tidal creek are presented below:

- In the vicinity of the Site, TOC ranged from 1.2 to 7.7%.
- In the shoal area, TOC ranged from 0.7 to 11%.
- In the embayment, TOC ranged from 5.2 to 12%.
- In the downstream section of the creek, TOC ranged from 1.1 to 8.5%.

The pH of sediment samples collected from the tidal creek ranged from 7.2 to 8.4. In the vicinity of the site, the pH ranged from 8.1 to 8.4. In the shoal area the pH ranged from 7.5 to 8.4 and in the embayment the pH ranged from 7.2 to 7.7.

### 4.2.2. Volatile Organic Compounds

Levels of VOCs detected in the sediment of the tidal creek were consistent with background levels (Table 4-1). However, it is noteworthy that trace levels of additional VOCs, including tetrachloroethene and trichloroethene were detected in the vicinity of the Three Star lagoon outlet (LG-OUT, LG-OUT2) and not elsewhere.

### 4.2.3. Semivolatile Organic Compounds

SVOCs detected in sediments above screening values primarily consisted of PAHs (Table 4-2). Surface sediment and deeper sediment represent the zones of highest ecological significance and potential zone of storage from legacy inputs, respectively. These depth intervals are discussed separately below. As a screening of total PAH concentrations in sediment, the data collected from the creek were compared to the maximum background level of 5.5 mg/Kg detected in the Wappingers Lake. The PAH composition of sediment was also compared to that of sources detected on the Three Star Site.

PAHs in surface sediment

In surface sediment, total PAH concentrations ranged from 0.2 to 214 mg/Kg (Table 4-2 and Figure 4-1). The maximum concentration of total PAHs in surface sediment was detected in the vicinity of the shoal (WP-29). Twenty-three of 30 samples of surface sediment that were collected contained total PAHs above the maximum background level of 5.5 mg/Kg. Individual PAHs were detected above NYS screening values in each of the samples of surface sediment collected.

PAHs in deeper sediment

In deeper sediment, total PAH concentrations ranged from 0.9 to 1,092 mg/Kg (Table 4-2 and Figure 4-1). Similar to surface sediment, the maximum concentration of total PAHs in deeper sediment was also detected in the vicinity of the shoal (WP-DOT, 12 to 18 in.) (Figure 4-1). Eighteen of 21 locations from which deeper sediment samples were collected contained total PAH concentrations above the maximum background level of 5.5 mg/Kg. A frequency distribution of PAH detections above the maximum background level is presented below.

*Frequency distribution of deeper sediment samples with total PAH concentrations above the maximum background level.*

| | ***Concentrations (mg/kg)*** | | |
|---|---|---|---|
| ***Section of creek*** | ***5.5 to*** | ***10 to 35*** | ***35+*** |
| Site area (1) | | | |
| Shoal area (6) | | 1 | 5 |
| Embayment (4) | | 3 | |
| Downstream area (10) | 3 | 5 | 1 |

Note: The number of samples collected from a given area is shown in parentheses, ( ).
Source: O'Brien & Gere Engineers, Inc.

The detections of total PAHs in deeper sediment above background levels occurred downstream of the Three Star Site.

In deeper sediment, NYS screening values were exceeded by approximately three orders of magnitude by benzo(b)fluorathene, benzo(a)pyrene, and chrysene which were detected in the shoal area (WP-M2 [6 to 12 in], WP-DOT [6 to 18 in], WP-29 [6 to 12 in]). Additional individual PAH compounds in the deeper sediment were elevated compared to background levels. The PAH concentrations in sediment from other

areas of the creek were lower compared to the shoal area. However, individual PAH concentrations were above NYS screening values and background levels.

PAH composition

PAH composition data from the creek sediment were compared to PAH materials from the Three Star Site. Figures presented in Appendix F present PAH data normalized in weight percent composition.

The range of PAH mixtures detected in the sediment of the tidal creek was similar to that of PAHs detected on the Three Star Site which were discussed in Section 1.2.5. Deeper sediment collected from the shoal area (WP-29, 12 to 18 in) contained the highest total PAH concentration detected in the creek at 1,092 mg/Kg (Figure 4-1). The PAH composition of that sample was dominated by 3- and 4- ring PAHs and was similar to material from the Three Star Site described as mixture B in Section 1.2.5 (Appendix F). Surface sediments were generally dominated by PAHs with 4+ rings and more closely resembled PAH patterns of the Three Star Site described as mixture A in Section 1.2.5. Further discussion of PAH composition of sediment and potential sources, is presented in Section 6.2.1.

Other SVOCs

In addition to PAHs, 1,2-dichlorobenzene, 1,4-dichlorobenzene, phenol, and dibenzofuran were present in sediment above screening values:

- 1,2-Dichlrobenzene and 1,4-dichlorobenzene were detected in surface sediment of two locations in the shoal area (WP-MW4, WP-29A) at concentrations up to approximately twice their screening values.

- Phenol was detected above its screening value in the deeper sediment of the shoal area (WP-M3, WP-OD3) and downstream section of the tidal creek (WP-T1A, WP-T1C), and surface sediment of one sample collected form the downstream section (WP-T1C). The maximum level was detected at MW-M3 (12 to 17 in), at a level of approximately 20 times the screening value.

- Dibenzofuran was detected in deep sediment of the shoal with a maximum of 30 mg/Kg (WP-29, 12 to 18 in), which is approximately six times the ecological screening value of 5.1 mg/Kg used for the FWIA (Table 4-2). There is no New York State screening value for Dibenzofuran.

Relative to PAHs, the presence of these compounds in the sediment was minor. The levels that these compounds exceeded their respective screening values and the frequency that they were detected were much lower than those of PAHs were.

### 4.2.4. Pesticides

Spurious occurrences of pesticides above screening levels were detected similar in magnitude of those detected in background sediment (Table 4-4). Pesticides were not detected on the Three Star Site at levels detected in sediment of the creek (O'Brien & Gere 2007a).

### 4.2.5. Inorganic Constituents

To highlight the potential contribution of inorganic constituents originating from the Three Star Site and other potential sources downstream of Wappingers Lake (the background location) to the tidal creek, sediment data with concentrations above SEL screening values are presented in Figure 4-1. The results presented below focus on the constituents that were detected above the SEL screening values since background levels frequently exceeded LEL screening values. Surface and subsurface results are presented separately. For both of these sediment depth intervals the inorganic constituents are presented

in decreasing order of magnitude above SEL screening values. Several inorganic constituents were associated with both surface and deeper sediment. A summary of the inorganic results is also presented.

Surface sediment

Surface sediment data represent the most ecologically significant fraction of the sediment in the creek. As discussed in Section 4.1 above, background concentrations of 8 of the 12 inorganic constituents tested have concentrations above LEL screening values (Table 4-5). Inorganic constituents detected in sediment samples collected from the tidal creek are presented in Table 4-8 relative to screening values. In decreasing order of magnitude above SEL screening values, the primary inorganic constituents detected in surface sediment consisted of mercury, lead, zinc, and chromium. The maximum level of mercury detected in the shoal area (WP-29) was approximately 25 times above its SEL screening value.

Subsurface sediment

Several inorganic constituents were found at higher concentrations in subsurface sediment when compared to surface sediment (Table 4-6, Figure 4-1). Most notably, mercury concentrations in subsurface sediment of the shoal area (WP-DOT) and embayment (WP-PL) far exceeded surface sediment concentrations. The maximum concentrations of mercury at both of these two areas were detected in similar depth intervals of approximately 6- to 12-inches, and at similar concentrations of approximately 180 mg/Kg, which is approximately 140 times the SEL of 1.3 mg/Kg. In addition, 24 of the remaining 32 subsurface sediment samples also contained mercury at levels above the SEL screening value.

Several other inorganic constituents were detected in subsurface sediment at concentrations above SEL screening values. The shoal and embayment areas also contained the highest levels of zinc, total chromium, and total cyanide compared to other sections of the creek.

Summary

Constituents detected in surface or deeper sediment of the tidal creek above SEL are summarized in the matrix below in decreasing order of magnitude above SEL screening values:

*Levels of constituents compared to SEL screening values for three sections of the creek (surface and deeper sediment intervals).*

| | ***Order of magnitude above SEL screening values*** | | | |
|---|---|---|---|---|
| ***Section*** | ***50+*** | ***20+ to 50*** | ***10+ to 20*** | ***1 to 10*** |
| Shoal | mercury | zinc<br>total chromium | total cyanide* | lead<br>cadmium<br>arsenic<br>copper<br>antimony<br>iron |
| Embayment | mercury | total chromium | total cyanide* | zinc<br>lead<br>arsenic<br>copper<br>cadmium |
| Downstream | | mercury | | total chromium<br>zinc<br>lead<br>antimony<br>cadmium<br>total cyanide*<br>arsenic/copper<br>iron/nickel |

Notes: For each range, constituents presented in order or magnitude of concentration above SEL screening values. * Indicates that total cyanide concentrations were compared to background levels and may not be directly comparable to other constituents that were compared to SEL screening values.

Further evaluation of inorganic constituents relative to LEL screening values is presented in the discussion of ecological exposure (Section 5.1.1).

# 5. Exposure Assessment

## 5.1. Ecological Exposure Assessment

Comparisons of sediment data to screening values as it relates to the identification of potential sources of Site constituents to the creek was discussed in Section 4.2. Section 5.1.1 presents further discussion of the detection of PAHs and inorganic constituents in the tidal creek relative to LEL screening values. Section 5.1.2 presents the results of the fish and wildlife impact analysis completed for the tidal creek.

### 5.1.1. Comparison of Sediment Data to Screening Values

The occurrence of PAHs and inorganic constituents are presented separately, below.

*Polycyclic aromatic hydrocarbons*

The comparison of sediment data to the total PAH screening value of 4 mg/Kg, presented in Table 4-6, is summarized below:

- Five of eight locations sampled from the 0- to 6-inch depth interval adjacent to the Three Star Site were above the total PAH screening value of 4 mg/Kg. The maximum total PAH concentration detected in this section of the tidal creek was 64 mg/Kg.

- Each of the other 22 locations sampled in the tidal creek downstream of the Site Area had total PAH concentrations above 4 mg/Kg. As presented in Section 4.2, the highest concentrations of total PAHs detected in the sediment were located in the Shoal Area (up to 1092 mg/Kg at WP-29, 12- to 18-inches deep).

*Inorganic constituents*

The frequency of detection above LEL screening values, presented in Table 4-6, is summarized below:

- Arsenic, copper, iron, lead, mercury, and nickel were the inorganic constituents most frequently detected above LEL screening values with 29 of 30 locations sampled exceeding the LEL screening value.
- Cadmium and zinc exceeded their LEL screening values in 27 and 28 of 30 locations sampled, respectively.
- Chromium exceeded the LEL screening value in 22 of 30 locations sampled.
- Arsenic and manganese exceeded their respective LEL screening values in 14 and 16 of 30 locations, respectively.
- Selenium, silver, thallium, and vanadium were infrequently detected above LEL screening values.
- Total cyanide was detected in 23 of 30 locations sampled above the screening value of 0.1 mg/Kg.

### 5.1.2. Fish and Wildlife Impact Assessment

Results of the FWIA through Step IIC, *toxic effects analysis*, are presented in Appendix G. The creek provides aquatic/wetland habitat which was evaluated for the FWIA. The toxic effects analysis presumes that fish and wildlife resources have been identified and that the contamination of resources and complete exposure pathways exist. Performance of the toxic effects analysis requires specific toxicological and ecological information that are outlined in the work plan addendum (O'Brien & Gere 2002) and NYSDEC guidance (NYSDEC 1994). An analysis of toxic effects may look at individual organisms, populations, communities, or ecosystems. The FWIA for Wappingers Creek consisted of evaluation of

potential exposure of mink and great blue heron to maximum concentrations of constituents in surface water and surface sediment (0 to 6 inch interval) of the creek.

Consistent with the results of screening of sediment using New York State guidance values (NYSDEC 1999), results of the FWIA identified PAHs and mercury as the primary COPEC. The FWIA evaluated representative wildlife species consisting of a mink and a great blue heron based on maximum concentrations detected in the creek and the resulting hazard quotients (HQs). In addition to constituents identified by the NYS screening values, the FWIA also identified dibenzofuran, phenol, aluminum, selenium, and thallium as COPEC in sediment. Results for each of these additional constituents are summarized below.

- Dibenzofuran was frequently detected in sediment of the tidal creek at concentrations that were generally below the ecological screening value. Dibenzofuran was present from the vicinity of the Three Star Site to the downstream section. However, in the shoal area, deeper sediment contained dibenzofuran at concentrations up to 30 mg/Kg, approximately six times the ecological screening value. Dibenzofuran was not detected in background samples

- Phenol was detected in one surface sediment sample collected from the downstream section of the creek (WP-T1C) at 0.05 mg/Kg. It was also detected in deeper sediment of three locations at levels up to 0.1 mg/Kg.

- Aluminum was not detected above background levels in the tidal creek, nor was it detected above the ecological screening value. However, the food chain model completed for the FWIA identified it as a COPEC. In general, the levels of aluminum detected in the sediment of the tidal creek do not appear to be associated with the Three Star Site.

- Selenium was detected at one location at a concentration slightly above the maximum background level of 2.5 mg/Kg.

- Thallium was detected in the shoal area, embayment, and downstream sections of the tidal creek with levels up to 3.3 mg/Kg detected. The detection of thallium was accompanied by blank contamination.

The addition of these constituents as COPEC does not change the overall evaluation of the constituents in the tidal creek. These constituents were detected at relatively low concentrations in comparison to other constituents.

The overall hazard quotients presented in the FWIA were generally associated with the concentrations of constituents in the sediment. However, during storm event sampling of the surface water, aluminum, iron, and silver were also identified as COPEC. These constituents were detected in background samples at similar levels to those detected in the tidal creek.

## 5.2. Qualitative Human Health Exposure Assessment

An exposure pathway analysis was completed according to state guidance (NYSDEC 2002). The exposure pathway analysis identified potential receptor populations for the tidal creek consisting of recreational users, swimmers, or fish consumers (Appendix H).

# 6. Discussion

The sediment of the tidal creek contains PAHs and inorganic constituents at levels above those that can be attributed to ubiquitous sources. Mercury and chromium were the most prevalent inorganic constituents found at elevated levels relative to background concentrations. The spatial collocation of several additional inorganic constituents both vertically and horizontally in the sediment bed of the tidal creek suggests that their occurrence is linked. Therefore, the discussion below is focused on the occurrence of PAHs, mercury, and chromium. Additional constituents are also discussed for their spatial relationships with these constituents.

The spatial trends of surface and deeper zones within sediment are considered separately to highlight the potential differences in source dynamics and relative importance with regard to potential exposures (Section 6.1). Surface sediment represents the zone of highest importance with respect to ecological contact, as most aquatic organisms reside in the upper 6 inches of sediment. Surface sediment also is more closely associated with deposition of particulate matter from current sources to the water column. In contrast, deeper sediment tends to be more isolated from ecological contact. The deeper sediment may be more indicative of surface sediment that was buried over time with sediment chemistries representing historic sources to the tidal creek.

Deeper sediment that contains elevated levels of constituents from historic discharges may reflect trends in the overall ecological condition of the tidal creek. Reductions in surface concentrations of constituents appear to have occurred by burial of surface sediment over time. Aged constituents in sediment tend to be less bioavailable both by the isolation of this layer from surface contact and also by processes of sequestration of constituents within the sediment matrix that may occur over time. However, the potential for scouring of deeper sediment during storm events and reintroduction of it to the ecological zone needs to be considered in the assessment of fate and transport. In the tidal creek, deeper sediment contained the highest concentrations of several constituents.

Evaluation of spatial trends in surface and deeper sediment considered both the frequency and magnitude of occurrences above screening values:

- The frequencies of detection in surface sediment above the LEL and SEL screening values are presented in Figures 6-1 and 6-2, respectively. Background levels of several inorganic constituents were frequently above LEL screening values. Therefore, the discussion of frequencies of detection in surface sediment provided below is focused on the comparison to SEL screening values (Figure 6-2). For deeper sediment, the data for the tidal creek were compared to background levels. The sediment depth interval of 6 to 12 inches and sediment depths greater than 12 inches are presented separately, in Figures 6-3 and 6-4, respectively.

- The magnitude of PAH and inorganic constituents in sediment were evaluated separately (Figures 6-5 through 6-7). The associated figures present the median and maximum values for each depth interval considered. The PAH concentrations for the tidal sections of the creek are presented for three sediment depth intervals (Figure 6-5). Inorganic constituents normalized to SEL screening values were used to evaluate the magnitude of their concentrations in sediment (Figures 6-6 and 6-7). The magnitude of surface sediment concentrations of inorganic constituents compared to SEL screening values is presented in Figure 6-6. The same comparison for deeper sediment is presented in Figure 6-7.

Details of these evaluations are presented in the discussion of sediment concentrations in the tidal creek (Section 6.1).

The potential sources of the constituents detected in sediment of the tidal creek were evaluated by identifying activities that could explain their presence, as discussed in Section 6.2. In the qualitative assessment of the potential link between the Three Star Site and the sediment of the tidal creek, the constituents found in media of the Three Star Site were compared with the constituents detected in sediment of the tidal creek. The Three Star Site was implicated as a possible source if constituents were present both on the Three Star Site and in the sediment of the tidal creek and a complete pathway existed. Maximum levels of constituents on the Three Star Site that exceeded those found in the sediment of the tidal creek, provided strong evidence of this potential relationship. However, the data for the Creek RI were not intended to represent statistical sampling and the potential relationship with the other constituents found in both places was also considered.

Erosion of surface soils from the Three Star Site (or elsewhere) with elevated levels of constituents is one possible pathway for contamination of the sediment of the tidal creek. Subsurface materials are less available for transport, but may be indicative of materials that formerly existed on the Three Star Site as surface materials displaced during past site activities. In addition, constituents detected in subsurface materials that are located adjacent to the tidal creek may be indicative of constituents present in bank materials. Scouring of such bank materials could provide a pathway for subsurface materials to enter the Creek. Tidal action could also transport subsurface materials to the tidal creek. Bank materials were not sampled as part of the Creek RI.

Other potential sources consisting of the north parcel of the Market Street Industrial Park, coal materials used for fill, the public works garage, and the railroad are also discussed. Much less is known about these potential sources compared to the Three Star Site. However, the historic uses of the north parcel were similar to those of the Three Star Site. It is anticipated that wastes similar to those of the Three Star Site were generated by activities that took place there.

The quality of the surface water of the tidal creek is discussed as a potential medium for the transport of constituents in Section 6.3. Low flow and storm conditions provide two distinctly different periods to evaluate sources. Low flow periods minimize potential dilution of sources thereby maximizing the potential for observing source inputs. Storm events represent potential periods of scour when materials could be eroded or resuspended in the water column and transported downstream.

## 6.1. Sediment

In general, deeper sediment contained the highest levels of constituents detected. Most of these constituents were associated with two distinct areas of the tidal creek, consisting of the shoal area and embayment. Inorganic constituents were associated with both of these areas while PAHs were primarily associated with the shoal area.

The shoal area and embayment represent the first areas of the tidal portion of the creek where the creek widens downstream of the Market Street Industrial Park. The volume of affected material is primarily associated with the shoal and embayment. Relative widening of the creek increases the volume of the creek basin which decreases water velocities, facilitating deposition of particulate matter. Much of the higher levels of constituents were detected in deeper sediment suggesting that burial of surface sediment from historic inputs has occurred.

### 6.1.1. Site Area

The constituents detected in sediment of the site area were generally within screening values, with a few exceptions. Trace levels of the VOCs tetrachloroethene and trichloroethene detected in the vicinity of the lagoon outlet are noteworthy, as they were not detected elsewhere in the tidal creek (Table 4-1). Lead levels were generally similar to background levels (Appendix I), except in the vicinity of the MGP Site (WP-MW4, Table 4-6) where the highest concentration of lead was detected (Figure 6-6). The frequency of inorganic constituents detected above SEL screening values increased in the site area compared to background (Figure 6-2)

The presence of VOCs in the sediment is indicative of a current source to the tidal creek, as VOCs generally do not remain in sediment over long periods. Seepage of VOCs from subsurface media of the Axton Cross area of the Three Star Site may occur. The lack of VOCs detected in the water column and sediment of other sections of the tidal creek indicates that this is a relatively minor source.

In this section of the tidal creek, the channel is narrow compared to other sections. This results in higher relative flow velocities, which facilitate particle transport in surface water. The creek bed is composed of primarily rocks and cobbles with limited areas of sediment accumulation. Deeper sediment samples were not collected from the creek bed in this section of the creek due to these limitations.

### 6.1.2. Shoal Area

Based on comparison of the magnitude of the concentrations with SEL screening values and the frequency of detections above those values, the primary constituents detected in the surface sediment of the shoal area consist of mercury, zinc, and PAHs (Figures 6-1 through 6-7 and Appendix I). Other inorganic constituents where detected concentrations relative to upstream levels increased consisted of antimony, cadmium, chromium, lead, and cyanide. Six of the constituents - consisting of mercury, zinc, PAHs, antimony, cadmium, and cyanide - were detected in the shoal area at the highest concentrations detected in surface sediment of the tidal creek (Figures 6-5 and 6-6). In addition, deeper sediment contained much higher levels of mercury, chromium, zinc, and PAHs compared to the surface sediment (Figures 6-5 and 6-7, and Appendix I). Based on the magnitude of concentrations above the SEL screening values and the frequency of these occurrences, mercury was the primary constituent in that sediment layer (Figures 6-3, 6-4, and 6-7). Other constituents in deeper sediment included zinc, chromium, lead, and additional inorganic constituents that were present at lower levels (Figure 6-7).

The presence of these levels of PAHs in this area of the creek, but not in other areas of the tidal creek, may reflect differences in the source of these two types of constituents. The PAH signature was similar to that of materials detected on the Three Star Site. However, the PAH signature also might resemble that of other sources. Therefore, the source of the PAHs can not be conclusively identified.

The shoal area is the first area downstream of the Market Street Industrial Park where the creek widens and flow velocities would tend to decrease. The shoal area is located on the southeast side of the tidal creek, away from main flow. It appears to be a depositional area. The presence of the highest concentrations in the deeper sediment suggests that the constituents from historic releases are being buried. The burial and aging of these materials further suggests that bioavailability may be reduced relative to historic levels. There are no known current or past sources of inorganic constituents in the vicinity of the shoal area that would explain the elevated concentrations detected there. It is anticipated that the source of the inorganic constituents detected in the sediment of the shoal area is related to the downstream transport or migration of contaminants from past activities of the Market Street Industrial Park.

### 6.1.3. Embayment

The primary constituent detected in surface sediment of the embayment was mercury (Figure 6-1 through 6-7). Deeper sediment contained higher levels of mercury, as compared to surface sediment (Figures 6-6 and 6-7). In addition, chromium, zinc, lead, and copper were also constituents in surface and deeper sediment, above SEL screening values (Figures 6-6 and 6-7). Deeper sediment also contained cyanide as a constituent (Figure 6-7). Additional inorganic constituents were present at lower levels.

The embayment is located along the north shore of the tidal creek, outside of the main flow. Sediment accumulated in this area is expected to be stable. Extreme flooding could potentially scour the south portion of the embayment that is next to the main flow of the creek. Sediments containing the maximum concentrations of chromium detected there may be vulnerable to scouring during such storm events. Similar to elevated levels of inorganic constituents detected in the shoal area, in the vicinity of the embayment, there is no known past or current source of the elevated levels of constituents detected. It is possible that the source of the inorganic constituents detected in the sediment of the embayment is related to transport or migration of contaminants from past activities of the Market Street Industrial Park.

### 6.1.4. Downstream Section

In general the concentrations of constituents in sediment of the downstream section of the tidal creek were similar to background levels, but with spurious detections in a wider range (Figures 6-1 through 6-7, and Appendix I). Mercury was the primary constituent detected in surface and deeper sediment (Figure 6-6 and 6-7, and Appendix I). Compared to the levels detected in the shoal area and embayment, constituent concentrations in the downstream section of the tidal creek were much lower (Figures 6-6 and 6-7, and Appendix I). Zinc, lead, antimony, and chromium were also constituents and additional inorganic constituents were also present at lower levels (Figures 6-6 and 6-7).

There were no particular patterns to the spatial distribution of elevated levels of constituents in the downstream section of the tidal creek. Elevated levels of antimony and zinc were detected along the south shore downstream of the embayment (WP-TC1, Table 4-6, Figure 1-2). Elevated levels of PAHs and chromium were detected along the south shore approximately midway between the embayment and the Route 28 Bridge (WP-T2C, Table 4-6, Figure 1-2). Elevated levels of mercury, zinc, and chromium were associated with sediment collected from upstream of the Route 28 Bridge (WP-OD1, Table 4-6, Figure 1-2). The presence of elevated levels of constituents in the sediment was associated with areas containing silt and organic matter (Table 4-7). In this section of the tidal creek, no consistent trends were observed in the occurrence of constituents in vertical profiles of the sediment.

## 6.2. Potential Sources

The discussion of potential sources of constituents focuses on those that were identified as primary constituents. Separate sections present discussions of PAHs (Section 6.2.1), mercury (Section 6.2.2), chromium (Section 6.2.3), zinc (Section 6.2.4), and lead (Section 6.2.5). Other constituents are discussed as a group (Section 6.2.6). In general, it appears that cinders may represent the primary potential source for PAHs. The Three Star lagoon appears to be the primary source of inorganic constituents from the Three Star Site. Additional potential sources of PAHs are discussed below (Section 6.2.1). Past activities in the north parcel of the Market Street Industrial Park may also have contributed inorganic constituents and/or PAHs.

### 6.2.1. PAHs

PAHs are ubiquitous in the environment, arising from natural and anthropogenic sources (Appendix F). However, PAH concentrations above background levels were present in the sediment of the tidal creek. Potential sources of PAHs consist of past operation of the MGP facility, contaminants remaining on the

MGP Site, as well as cinders located on site and off site. Mixtures containing PAHs can occur as a tar or soot. Tars typically contain high concentrations of lighter PAH compounds compared to soot. Lighter PAH compounds in tar such as naphthalene may dissolve and associate with water. However, higher molecular weight PAHs predominately associate with particulate matter. Both types of PAH materials are associated with the Three Star Site (Appendix I).

The maximum level of PAHs detected in the sediment of the tidal creek, 1,092 mg/Kg in the shoal area (WP-29, 12 to 18 in), was lower than the maximum levels detected on the MGP Site. Approximately 4,100 mg/Kg of total PAHs were detected in subsurface soil adjacent to the tidal creek (MW-4, 14 to 16 ft, duplicate). The PAH signatures in the surface sediment of the tidal creek contained predominately 4+ ring PAHs comparable to materials of the MGP Site (MW-4 18 to 20 ft; MW-5, 14 to 16 ft) (Appendix I). The deeper sediment of the tidal creek (WP-29, 12 to 18 in) contained predominately 3- and 4-ring PAHs resembling other materials of the MGP Site (MW-4, 12 to 14 ft; MW-5, 12 to 14 ft), including those detected in the former gas holder (SB-4-01). The maximum level of PAHs detected in the sediment of the Three Star lagoon, 88 mg/Kg, was lower than the maximum level detected in the sediment of the tidal creek. It appears that MPG Site materials may explain the levels detected in the creek. Aged materials contain PAHs that may be lower risk to aquatic organisms compared to newer sources (Section 1.7.2).

In addition to PAH sources found on the Three Star Site, storage tanks formerly located on the north property opposite the Three Star Site may have contained materials with PAHs in them. Cinders from MGP operations were reportedly used to fill off-site areas, including the roadway along the creek in the vicinity of the shoal area. The public works garage located adjacent to the creek is a potential source of PAHs from the potential operation, maintenance, and storage of vehicles at the facility. It is not clear which of these potential sources (or which combination of sources) contributed to the elevated PAHs detected in the sediment of the tidal creek.

The railroad bridge near the confluence of Wappingers Creek with the Hudson River also represents a potential source of PAHs. However, elevated levels of PAHs were not detected in the vicinity of the railroad bridge, so potential contributions from this source area were not evident.

### 6.2.2. Mercury

Mercury levels in sediment were of particular interest since they were the highest relative to NYS screening values and frequently occurring throughout the tidal creek. Mercury may have been associated with dyes produced by the Dutchess Bleachery or in the paints used in the manufacturing of felt hats. The maximum of level of mercury, 186 mg/Kg, detected in sediment of the tidal creek (WP-DOT, 6 to 12 in) was higher than levels detected in surface soil of the Three Star Site or the sediment of the Three Star lagoon which represent the readily available sources there. Mercury was detected up to 54 mg/Kg in the Three Star lagoon sediment. The maximum levels in surface soil of the Three Star were detected in the dry well area at 31 mg/Kg. The maximum level of mercury detected in subsurface soil of the former raceway, was 41 mg/Kg. Sediment of the Three Star lagoon and surface soil of the dry well area represent potential sources for the transport or migration of mercury to the tidal creek. Subsurface soil of the former raceway is less readily available.

Mercury above those levels detected in the sediment in the tidal creek were associated with subsurface soil of the MGP Site adjacent to the tidal creek, 249 mg/Kg (MW-4 14 to 16 ft). If concentrations of mercury on the exposed bank of the MGP site are similar to subsurface soils of the MW-4 area, erosion of bank materials could also represent a potential source. The Three Star Site appears to be a source of mercury to the tidal creek.

### 6.2.3. Chromium

Chromium compounds were associated with metal plating operations of the Three Star Site and may have been associated with those to the north parcel, too. It is noteworthy that the most toxic form of chromium, hexavalent chromium, was analyzed but not detected on the Three Star Site or in sediment of the tidal creek.

Chromium levels in the former raceway and Three Star lagoon were above the maximum level of 4,120 mg/Kg detected in the sediment of the tidal creek. On the Three Star Site, the highest levels of chromium were detected in surface sediment of the Three Star lagoon where up to 26,300 mg/Kg was detected. Surface soil of the lower portion of the former raceway contained chromium up to 6,260 mg/Kg and ground water under the former raceway contained 1,730 µg/L. The raceway bed may act as a preferential pathway for the migration of chromium in surface soils and ground water to the lagoon. Therefore, based on the concentrations detected, and the presence of this complete pathway, the Three Star Site is a plausible source of chromium detected in the sediment of the tidal creek.

### 6.2.4. Zinc

Zinc compounds were associated with metal plating operations of the Three Star Site and may have been associated with those to the north parcel, too. Zinc levels up to 6,500 mg/Kg and 1,820 mg/Kg were present in the sediment of the shoal and embayment, respectively. On the Three Star Site, zinc up to 3,710 mg/Kg was present in the Three Star lagoon sediment. In the former raceway, zinc up to 558 mg/Kg represented the highest concentrations detected in surface soil on the Three Star Site. Subsurface soil of the former raceway contained levels similar to those detected in surface soil. Surface soil of the MGP site also contained up to 2,570 mg/Kg on the west portion of the site (SS-MGP-1). Surface soil along the border of the MGP site and the creek contained zinc up to 752 mg/Kg. The Three Star lagoon may be a source of zinc to the tidal creek. However, maximum levels detected in the sediment of the tidal creek were not detected on the Three Star Site.

### 6.2.5. Lead

Local, ubiquitous, background levels of lead were detected at up to 187 mg/Kg above the SEL screening value of 110 mg/Kg. However, lead levels in the tidal creek were occasionally higher. Up to 1,450 mg/Kg was detected in surface sediment of the tidal creek adjacent to the MGP site (WP-MW-4). On the Three Star Site, lead was detected in surface sediment of the Three Star lagoon up to 9,650 mg/Kg. Up to 1,160 mg/Kg was detected in surface soil on the west portion of the MGP site (SS-MGP-1). In the former raceway, lead up to 1,100 mg/Kg (MW-11) was detected in surface soil. Subsurface soil next to the Axton-Cross building and the Three Star lagoon contained lead up to 2,860 mg/Kg (SS-03-02, 10 to 12 ft). The most likely source of lead on the Three Star Site is the sediment of the lagoon which could become resuspended in the water column during storm events and discharge to the tidal creek. It appears that the Three Star Site is one of several sources of lead detected in the sediment of the tidal creek. Lead could also be associated with past activities of the north parcel of the Market Street Industrial Park.

### 6.2.6. Other Constituents

The maximum levels of other constituents detected in the tidal creek compared to maximum levels detected on the Three Star Site are presented in the table below:

***Tidal creek compared with maximum levels on the Three Star Site.***

| ***Parameter*** | ***Tidal creek*** | ***Former raceway*** | ***Three Star lagoon*** | ***Other*** | |
|---|---|---|---|---|---|
| ***Shoal area*** | | | | | |
| Antimony | 159 | 1.6/377 | 362 | | |
| Arsenic | 162 | <22/55 | 141 | MGP site: ss | 41 |
| Cadmium | 79 | 16/2.3 | 122 | MGP site: ss | 55 |
| Copper | 504 | 2140 | 10600 | Axton Cross: sbs | 653 |
| | | | | MGP site: ss | 441 |
| Dibenzofuran | 30 | -- | 0.8 | | |
| 1,2-Dichlorobenzene | 1.4 | -- | 2.3 | Axton Cross: sbs | 2 |
| 1,4-Dichlorobezene | 1.2 | -- | 51 | | |
| ***Embayment*** | | | | | |
| Cyanide | 42 | 94 | 69 | MGP site: ss | 39 |
| ***Downstream section*** | | | | | |
| Phenol | 0.1 | <0.3 | 2 | | |

Notes: ss = surface soil; sbs = subsurface soil; <x = below screening level x; -- = below maximum detected in creek; x/y = ss/sbs.

The Three Star lagoon appears to be a potential source for these constituents detected in the tidal creek, except dibenzofuran. The subsurface soil of the MGP site adjacent to the tidal creek (BMW-1) contained levels above the maximum levels of dibenzofuran detected in the tidal creek. Tidal action may also facilitate erosion of subsurface materials to the tidal creek from areas adjacent to it.

## 6.3. Surface Water

Surface water data did not provide evidence that there is a continuous source to the creek, as low flow sampling indicated that the water column was generally within screening values. However, storm event sampling identified elevated levels of inorganic constituents, apparently related to background sources. A comparison is provided below of surface water concentrations detected in tidal creek compared with those of the lagoon and background:

Comparison of surface water concentrations (µg/L).

| Parameter | Lagoon | Bkgrnd | Site Br | Lagoon Outlet | Rt 28 Br |
|---|---|---|---|---|---|
| ***New York State screening*** | | | | | |
| Aluminum | [190] | [451] | [593] | [143] | [696] |
| Iron | [320] | [610] | [708] | 281 | [895] |
| Silver | [1.6] | [2.2] | [2.1] | [2] | [1.7] |
| Cyanide | 10U | 10U | [20] | 10U | [10] |
| ***Human health screening*** | | | | | |
| Manganese | 59 | 99 | 109 | 95 | 107 |
| Vanadium | 1.8 | 2.2 | 2.0 | 2.0 | 2.3 |

Notes:

Lagoon sampled on 11/18/02 compared to creek storm event data collected on May 14 and 15, 2002.

Bkgrnd = background; Site Br = Site Bridge; Rt 28 Br = Route 28 Bridge.

U = undetected; data with brackets [ ] indicates levels that exceeded screening values, generally for fish propagation.

During the storm event sampling, transport of constituents (aluminum, silver, manganese and vanadium) in surface water apparently from a source(s) upstream of the tidal portion of Wappingers Creek was detected. While most of the constituents appear related to background sources, cyanide and iron were detected in the surface water of the tidal creek, at levels above those of background which may be associated with the ground water levels detected at the Three Star Site.

Higher levels of iron were detected in the water column of the tidal creek adjacent to and downstream of the Three Star Site. Maximum levels of iron detected in lagoon sediment, 4.6%, were similar to maximum levels detected in the creek, 4.3%. Subsurface soil on the Three Star Site contained iron up to 10.4% next to the lagoon (SB-03-02). Ground water of the former raceway (MW-11) and deep ground adjacent to the tidal creek (BMW-3) contained 370 and 680 mg/L of iron, respectively; levels that are approximately 1,000 times those detected in Wappingers Creek. Increases in the levels of iron detected in the water column of the tidal creek may be related to ground water interaction with surface water.

The maximum cyanide levels detected in soil, 94 mg/Kg, detected in the former raceway of the Three Star Site do not appear sufficient to explain increases in surface water detected in the creek. However, the ground water below the former raceway (MW-11) contained 1,280 µg/L suggesting that higher levels of cyanide may be present in the soil there. Surface water levels of cyanide may be influenced by interaction with ground water in the vicinity of the Three Star Site.

Additional mobilization of contaminated soil and/or sediment, or ground water constituents into the water column of the tidal creek may occur during an extreme storm event.

# 7. Summary

The Creek RI was completed by O'Brien & Gere on behalf of the NYSDEC as a part of the RI/FS for the Three Star Site. The Site RI/FS is reported in other documents (O'Brien & Gere 2007a,b) and identified elevated levels of VOCs, PAHs, and inorganic constituents in media of the Three Star Site. The Site RI identified that further investigation was required to evaluate the potential presence of hazardous waste constituents (constituents) in Wappingers Creek. This report presents the results of the Creek RI. A FS for Wappingers Creek will be completed to address the findings of the Creek RI.

The Site RI identified historic operations on the Three Star Site which is located on the south portion of the Market Street Industrial Park on McKinley Street in the village of Wappingers Falls. The area occupied by the Market Street Industrial Park has been the site of industrial/ commercial operations since the 1830s when it was originally developed as a cloth dye manufacturing facility called the Dutchess Bleachery. During the operation of the Dutchess Bleachery, the facility also manufactured ammunition, felt hats, and leather products. A portion of the Three Star Site was used for the operation of a manufactured gas plant (MGP) over the period of the 1830s to approximately 1913. The Three Star Anodizing Company also operated a metal plating facility at the Three Star Site from the late 1950s to 1995.

The Site RI identified three specific areas of the Three Star Site (the former raceway, the Three Star lagoon, and the dry well area) with concentrations of constituents in environmental media in excess of screening levels and those found in other areas of the Three Star Site. These areas of the Three Star Site are associated with past activities that may represent sources of constituents at off-site locations. The former raceway and Three Star lagoon contained elevated levels of inorganic constituents in surface and subsurface soil, and sediment. The Three Star lagoon also contained PAHs in sediment. The dry well area contained VOCs and inorganic constituents. The MGP, located on the west portion of the Three Star Site, contained PAHs. PAHs were also associated with cinder fill material on the Three Star Site. These areas on the Three Star Site were concluded to represent sources for potential transport or migration of constituents to the tidal creek, which was the focus of the Creek RI.

In addition to the Three Star Site, potential sources of constituents to Wappingers Creek consist of past activities within the north parcel of the Market Street Industrial Park, the public works garage located along Creek Road, and the railroad located near the confluence of the tidal creek with the Hudson River. None of these areas were characterized or otherwise included in the Site RI/FS or Creek RI.

Sediment sampling over the length of the tidal creek completed during the Creek RI identified two hotspot areas consisting of a "shoal area" and "embayment." In both of these areas, the highest levels of constituents were detected in the deeper sediment (greater than six inches deep) suggesting that the elevated levels occurred from historic sources to Wappingers Creek. Both areas appear to be depositional areas for sediment accumulation.

The shoal area is located along the southeast shore of the tidal creek, approximately 1,000 ft downstream of the Market Street Industrial Park. It consists of an area of approximately 117,000 $ft^2$, with a sediment volume of approximately 9,000 CY. PAHs up to 214 mg/Kg were detected in surface sediment (0 to 6 in) and up to 1,092 mg/Kg were detected in deeper sediment (> 6 in). Mercury was detected up to 32 mg/Kg in surface sediment and up to 186 mg/Kg in deeper sediment. Chromium was detected up to 267 mg/Kg in surface sediment and up to 4,120 mg/Kg in deeper sediment. Zinc was detected up to 1,980 mg/Kg in

surface sediment and up to 6,500 mg/Kg in deeper sediment. Other inorganic constituents were also present at elevated levels in the shoal area.

The embayment is located along the north shore of the tidal creek, approximately 2,000 ft downstream of the Market Street Industrial Park. It consists of an area of approximately 180,000 $ft^2$, with a sediment volume of approximately 13,200 CY. Analyses of the sediment of the embayment detected mercury up to 17 mg/Kg in surface sediment and up to 182 mg/Kg in deeper sediment. Chromium was also detected up to 544 mg/Kg in surface sediment and up to 3,760 mg/Kg in deeper sediment. The embayment also contained elevated levels of other inorganic constituents in the sediment.

The elevated levels of inorganic constituents in the tidal creek appear to have originated from past activities within the Market Street Industrial Park. In particular, the former raceway on the Three Star Site and the Three Star lagoon contained inorganic constituents from past industrial waste discharges that reportedly occurred there. Therefore, these areas are implicated as potential sources of inorganic constituents to the tidal creek. In addition, the north lagoon on the Market Street Industrial Park reportedly received wastes from past industrial activities, and represents another potential source area. The north parcel of the Market Street Industrial Park contained industrial operations similar to those of the Three Star Site. However, a RI/FS of the north parcel has not been completed to more specifically evaluate potential source areas that may be present there. Surface water sampling completed for the Creek RI did not provide evidence that the Market Street Industrial Park is a current source of constituents to Wappingers Creek, although sediment sampling had identified a minor source of VOCs in the vicinity of the Three Star Site.

There are several potential sources of elevated levels of PAHs detected in the sediment of the shoal area. The PAH signature of the sediment consists of compounds which were consistent with some of the materials detected on the MGP Site. However, these PAH signatures may also be associated with other potential sources such as storage tanks formerly located on the north parcel or fill material (on the Three Star Site or elsewhere) containing PAHs. Activities at the public works garage may also have PAHs associated with them and represent a potential source to the creek.

Screening level exposure assessments were completed to evaluate potential ecological and human health exposures associated with constituents detected in Wappingers Creek. The ecological exposure assessment identified PAHs, mercury, chromium and other inorganic constituents as constituents of potential concern (COPC). The ecological screening considered the great blue heron and mink as potential upper trophic level ecological receptors. The human health exposure assessment identified recreational users and swimmers of the creek, and consumers of fish from the creek as potential human populations that may be exposed to constituents in the tidal creek. These findings will be carried into a FS for the creek.

The following is a summary of activities, observations, and conclusions of the Creek RI:

- Current conditions of the creek indicate that surface water quality is generally within water quality screening values and sediment contains elevated levels of contaminants consisting primarily of PAHs and inorganic constituents. During storm events, contaminants may enter the water column reducing water quality. However, the Creek RI did not identify contaminants in the creek during storm events that were specifically associated with the Three Star Site.

- Potential migration pathways were identified consisting of industrial facilities and site media. The Three Star lagoon, and the Three Star Site in the vicinity of it, appear to be a current, albeit relatively weak, source of constituents to the creek. The presence of trace levels of chlorinated VOCs and elevated levels of lead found in surface sediment at the outlet of the Three Star lagoon provide

evidence that this is a source area. Based on past uses, the north lagoon is also a potential source of constituents to the tidal creek, but analytical data has not been collected to evaluate this.

- Throughout the tidal creek and at background locations, PAHs and inorganic constituents were detected in sediment samples at concentrations above ecological screening values intended to measure lowest effect levels (LELs).

- A screening level assessment of potential impacts to fish and wildlife of the creek was completed through Step II C (NYSDEC 1994) indicating the potential for impacts to ecological receptors represented by a mink and great blue heron.

- A pathway analysis for qualitative evaluation of human exposures was completed that identified potential human populations that may utilize the creek consisting of recreational users, swimmers, and fish consumers.

- Surface water in Wappingers Creek was evaluated and potential impacts to water quality due to migration of contaminants via surface water or ground water seepage from the site were identified.

- Sediment of Wappingers Creek provided evidence of impacts from nearby activities. The constituents associated with past activities at the Three Star Site are consistent with the highest levels of constituents found in the creek. However, historical activities that took place on the north parcel of the Market Street Industrial Park were similar to those that took place at the Three Star Site and potential impacts resulting from that parcel are not known. Among uncertainties associated with potential current sources to the creek from the north parcel is the condition of the north lagoon. It reportedly received paint wastes during the 1970s. The Public Works garage and the railroad located along the creek are additional potential sources that were identified, but potential contributions from these sources could not be distinguished from other sources.

- Spatial patterns indicate that most of the highest concentrations of constituents are buried in deeper sediment suggesting that they originated from past releases. The shoal and embayment contain accumulations of constituents likely associated with past industrial releases from the Market Street Industrial Park.

- The composition of PAHs in sediment was comparable to materials found on the Three Star Site. The PAH composition of other potential sources such as fill material along Creek Road or contaminants associated with the Public Works garage has not been characterized.

- The impacts of the Three Star Site to the tidal creek have been delineated to allow a FS of the Creek to be completed. However, before a Creek FS is completed uncertainties associated with other potential sources to the creek (*e.g.* the north parcel of the Market Street Industrial Park) should be addressed. Control of potential upland sources is the first step toward improving conditions in the creek.

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Table 1-1. Potential constituent sources and characteristics

| Constituent type | Potential source types | Characteristics | Potential local sources |
|---|---|---|---|
| Volatile organic compounds (VOCs) | Solvents, hydrocarbon fuels | VOCs generally dissipate to the air when exposed to the surface environment. However, VOCs discharged as liquids may migrate into ground water where they can be retained over a long period of time and act as a source of VOCs to other media. If sufficient quantities are present, free phase VOCs may be trapped in soil. | Ubiquitous sources such as storm runoff containing contaminants from motor vehicles such as BTEX compounds.<br><br>Three Star Site: VOCs were used in solvents and petroleum products. Chlorinated VOCs and BTEX compounds have been identified in Site media.<br><br>Market Street Industrial Park, north site: Chlorinated VOCs and/or BTEX compounds were likely used in solvents and petroleum products associated with past dye manufacturing operations and metal plating operations. Pipes located along creek provide potential pathway to creek. Former discharge of paint to lagoon was reported. Former storage of fuels may have leaked or spilled BTEX compounds.<br><br>Department of Public Works garage where storage and maintenance of vehicles may have occurred along with leaks or spills. |
| Semivolatile organic compounds (SVOCs) | MGP site uses as PAHs, ubiquitous sources of combustion, hydrocarbon fuels | SVOCs tend to accumulate in sediment and soils when exposed to the environment. SVOCs are often present as groups of aromatic compounds called polycyclic aromatic hydrocarbons (PAHs). Exposure of PAHs to the environment may alter the composition of the PAHs in solid matrices, soil and sediment, over time. Losses of lighter compounds to water and air commonly occurs resulting in a PAH composition enriched in higher weighted compounds. | Ubiquitous sources such as vehicles and fires.<br><br>Three Star Site, PAHs are present from tar residues of former MGP operations, and coal wastes from coal burning including cinders. The residuals remainging from the May 2004 fire at the site would be expected to contain PAHs.<br><br>Market Street Industrial Park, north site may contain fill material from former MGP Site. Former fuel storage tanks may have leaked or spilled.<br><br>Cinders from former MGP Site may have been used as fill material at off-site locations including along Creek Road in the vicinity of the shoal area.<br><br>Railroad near confluence of tidal creek and Hudson River |

Table 1-1. Potential constituent sources and characteristics

| Constituent type | Potential source types | Characteristics | Potential local sources |
|---|---|---|---|
| Elemental inorganic constituents | Metal plating operations, vehicle brakes, local geology, mining, foundries and smelters, combustion byproducts, coal. | Metals can be present in the environment as either ionic (dissolved) compounds or solids. In the dissolved form, metals are readily transported in surface water or ground water. As a solid, metals tend to be retained in sediment or soils. | Ubiquitous sources of inorganic constituents observed in background samples.<br><br>Three Star Site includes former metal plating operations. Metals ***(e.g.*** chromium and zinc) were reportedly discharged in process water from plating operations mixed with acid to dissolve the metals. However, on contact with environmental media, the acid solution would tend to neutralize and precipitate metals. Therefore, metals may be retained in soils or sediment. Metals may also be present due to past use of pigments in industrial processes at the site.<br><br>Former photographic processes may be associated with silver. Past activities of the Three Star site and the north parcel included photographic printing.<br><br>Dye manufacturing of the Dutchess Bleachery and former felt manufacturing on the Three Star site may be associated with mercury used in paint pigments.<br><br>Market Street Industrial Park, north site. Former dye manufacturing, printing, and metal plating operations were similar to those of the Three Star Anodizing Site. Paints reportedly discharged to the north lagoon likely contained inorganic constituents as pigments. |

Table 1-1. Potential constituent sources and characteristics

| Constituent type | Potential source types | Characteristics | Potential local sources |
|---|---|---|---|
| Cyanide | Metal finishing and chemical industries, plastic and dye manufacturing, MGP, road salt, pesticides and herbicides | Cyanide is found in a number of sources. Cyanide can be in a form that does not pose a risk to living organisms or in its bioavailable form, measured as amenable cyanide, it can be toxic to organisms. Insoluble cyanide compounds are the most likely forms to be found in the environment. Insoluble cyanide compounds may adsorb to soil and sediment and generally have the potential to bioconcentrate. Insoluble forms do not biodegrade. | Ubiquitous levels were observed in background samples from sources such as road salt, pesticides and herbicides.<br><br>Three Star site former metal finishing, plastic and dye manufacturing operations.<br><br>Three Star Site former MGP operations.<br><br>Market Street Industrial Park, north site.<br><br>Fill materials containing MGP wastes may contain cyanide. |

New York State Department of Environmental Conservation
Three Star Anodizing Site - Creek RI
Wappingers Falls, New York

Table 2-1A. Wappinger Creek - surface water sample quantities analyzed for the Creek RI

| Description | Analysis | NYSDEC Analytical Method | Environ. ***Locations*** | ***Samples*** |
|---|---|---|---|---|
| Surface Water | Event 1-summer low flow | | | |
| | Volatile organic compounds | 95-1+10 | 6 | 6 |
| | Semivolatile organic compounds | 95-2+20 | 6 | 6 |
| | Pesticides | 95-3 | 6 | 6 |
| | PCBs | 95-3 | 6 | 6 |
| | Metals | 200.7 CLP-M | 6 | 6 |
| | Mercury | 245 CLP-M | 6 | 6 |
| | Cyanide | 335.2 CLP-M | 6 | 6 |
| | Total suspended solids | 160.2 | 6 | 6 |
| | Hardness | 130.2 | 6 | 6 |
| | Alkalinity | 310.1 | 6 | 6 |
| | Dissolved organic carbon | 415.1 | 6 | 6 |
| Surface water | Event 2-storm flow event | | | |
| | Volatile organic compounds | 95-1+10 | 3/1 | 7 |
| | Semivolatile organic compounds | 95-2+20 | 3/1 | 7 |
| | TAL metals | 200.7 CLP-M | 3/1 | 7 |
| | Mercury | 245 CLP-M | 3/1 | 7 |
| | Cyanide | 335.2 CLP-M | 3/1 | 7 |
| | Total suspended solids | 160.2 | 3/1 | 7 |
| | Hardness | 130.2 | 3/1 | 7 |
| | Alkalinity | 310.1 | 3/1 | 7 |
| | Dissolved organic carbon | 415.1 | 3/1 | 7 |

Notes:
3/1 = Three locations in the tidal creek (two rounds); one location at the Three Star lagoon outlet (one round).

Table 2-1B. Wappinger Creek - sediment sample quantities analyzed for the Creek RI

| Description | Analysis | | Analytical Method | | Environ. ***Locations*** | ***Samples*** |
|---|---|---|---|---|---|---|
| Sediment Background (Wappingers Lake) | Volatile organic compounds | | NYSDEC | 95-1+10 | 3 | 9 |
| | Semivolatile organic compounds | | NYSDEC | 95-2+20 | 8 | 14 |
| | Pesticides | | NYSDEC | 95-3 | 3 | 9 |
| | PCBs | | NYSDEC | 95-3 | 3 | 9 |
| | TAL Metals | | NYSDEC | 200.7 CLP-M | 8 | 14 |
| | Hexavalent chromium | S | NYSDEC | 7196A | 8 | 14 |
| | Mercury | | NYSDEC | 245 CLP-M | 8 | 14 |
| | Cyanide | | NYSDEC | 335.2 CLP-M | 8 | 14 |
| | Amenable cyanide | * | NYSDEC | 9010B/9014 | 1 | 1 |
| | Percent solids | | ASTM | D2540-6 | 8 | 14 |
| | Total organic carbon | S | USEPA | Lloyd Kahn | 8 | 14 |
| Sediment - cores tidal creek | Volatile organic compounds | | NYSDEC | 95-1+10 | 11 | 15 |
| | Semivolatile organic compounds | | NYSDEC | 95-2+20 | 30 | 62 |
| | Pesticides | | NYSDEC | 95-3 | 9 | 12 |
| | PCBs | | NYSDEC | 95-3 | 9 | 12 |
| | TAL Metals | | NYSDEC | 200.7 CLP-M | 30 | 62 |
| | Hexavalent chromium | S | NYSDEC | 7196A | 30 | 62 |
| | Mercury | | NYSDEC | 245 CLP-M | 30 | 62 |
| | Cyanide | | NYSDEC | 335.2 CLP-M | 30 | 62 |
| | Amenable cyanide | * | NYSDEC | 9010B/9014 | 12 | 19 |
| | Percent solids | | ASTM | D2540-6 | 30 | 62 |
| | Total organic carbon | S | USEPA | Lloyd Kahn | 24 | 49 |
| | Particle size analysis | | ASTM | ASTM-D422/ ASTM-D1140 | 3 | 3 |
| SUMMARY | Volatile organic compounds | | NYSDEC | 95-1+10 | 14 | 24 |
| | Semi-volatile organic compounds | | NYSDEC | 95-2+20 | 38 | 76 |
| | Pesticides | | NYSDEC | 95-3 | 12 | 21 |
| | PCBs | | NYSDEC | 95-3 | 12 | 21 |
| | TAL Metals | | NYSDEC | 200.7 CLP-M | 38 | 76 |
| | Hexavalent chromium | S | NYSDEC | 7196A | 38 | 76 |
| | Mercury | | NYSDEC | 245 CLP-M | 38 | 76 |
| | Cyanide | | NYSDEC | 335.2 CLP-M | 38 | 76 |
| | Amenable cyanide | * | NYSDEC | 9010B/9014 | 13 | 20 |
| | Percent solids | | ASTM | D2540-6 | 38 | 76 |
| | Total organic carbon | S | USEPA | Lloyd Kahn | 32 | 63 |
| | Particle size analysis | | ASTM | ASTM-D422/ ASTM-D1140 | 3 | 3 |

Notes:

Samples analyzed by O'Brien & Gere Laboratories, Inc., except as noted by "S" indicating subcontracted analysis.
* Amendable cyanide analyses performed based on results of total cyanide analyses.

Table 2-2
Three Star Anodizing Site
Wappingers Falls, New York
Component evaluation of PAH data

| | Compound | Carcinogenic | BaP Equivalent |
|---|---|---|---|
| 1 | Acenaphythene | --- | --- |
| 2 | Acenaphythylene | --- | --- |
| 3 | Anthracene | --- | --- |
| 4 | Benzo(a)anthracene | X | 0.1 |
| 5 | Benzo(a)pyrene | X | 1 |
| 6 | Benzo(b)fluoroanthene | X | 0.1 |
| 7 | Benzo(ghi)perlyene | --- | --- |
| 8 | Benzo(k)fluoranthene | X | 0.01 |
| 9 | Chrysene | X | 0.01 |
| 10 | Dibenzo(a,h)anthracene | X | 1 |
| 11 | Fluoranthene | --- | --- |
| 12 | Fluroene | --- | --- |
| 13 | Indeno(1,2,3-cd)pyrene | X | 0.1 |
| 14 | Naphthalene | --- | --- |
| 15 | Phenanthrene | --- | --- |
| 16 | Pyrene | --- | --- |

Notes:
BaP equivalents provided by NYSDOH.

Table 3-1A. Low flow surface water sampling - results of July 12, 2001 field analyses

| Sample location | | | | pH | Cond. (usem/cm) | Water Temp. (C deg.) | | DO (mg/l) | Salinity (%) |
|---|---|---|---|---|---|---|---|---|---|
| Wappingers Lake | | --- | --- | 6.1 | 0.47 | 23 | --- | 7.0 | 0.0 |
| Upstream Site Br. | WP5-SW | --- | --- | 7.1 | 0.45 | 23 | --- | 7.4 | 0.0 |
| Site Bridge | WP10-SW | --- | --- | 7.1 | 0.45 | 23 | --- | 6.8 | 0.0 |
| Dwnstrm lagoon | WP13-SW | --- | --- | 7.1 | 0.46 | 24 | --- | 7.0 | 0.0 |
| Dwnstrm MGP Site | WP18-SW | --- | --- | 6.7 | 0.47 | 23 | --- | 6.4 | 0.0 |
| Dwnstrm pool | WP35-SW | --- | --- | 6.0 | 0.46 | 23 | --- | 6.4 | 0.0 |
| ***Average*** | | --- | --- | --- | 0.46 | 23 | --- | 6.8 | 0.0 |
| ***Median*** | | --- | --- | 6.9 | 0.46 | 23 | --- | 6.9 | 0.0 |

Table 3-1B. Storm event surface water sampling - results of May 14 and 15, 2002 field analyses

| Sample location | | Time | Water depth | pH | Cond. (usem/cm) | Water Temp. (C deg.) | Turbidity (NTU) | DO (mg/l) | Salinity (%) |
|---|---|---|---|---|---|---|---|---|---|
| ***Round 1- May 14, 2002*** | | | | | | | | | |
| Wappingers Lake | --- | 1800 | 10.5 ft | 7.7 | 0.24 | 12 | 21 | 11.3 | 0.0 |
| Site Bridge | --- | 1530 | 10.5 ft | 7.8 | 0.25 | 13 | 24 | 11.1 | 0.0 |
| Route 28 Bridge | --- | 1645 | 20 ft | 7.8 | 0.27 | 12 | 26 | 8.5 | 0.0 |
| ***Round 2 - May 15, 2002*** | | | | | | | | | |
| Wappingers Lake | --- | 1030 | 9 ft | 7.8 | 0.25 | 12 | 122 | 10.7 | 0.0 |
| Site Bridge | --- | 745 | 8.5 ft | 7.6 | 0.24 | 12 | 44 | 10.8 | 0.0 |
| Route 28 Bridge | --- | 830 | 17.5 ft | 7.8 | 0.25 | 12 | 37 | 10.1 | 0.0 |
| Lagoon outlet | --- | 930 | 3 in | 7.6 | 0.31 | 13 | 6 | 10.5 | 0.0 |
| ***Average*** | | --- | --- | --- | 0.26 | 12 | 40 | 10.4 | 0.0 |
| ***Median*** | | --- | --- | 7.8 | 0.25 | 12 | 37 | 10.8 | 0.0 |

Note:
Data presented for the lake and creek are the averages of three readings obtained from the upper, middle and lower depth intervals.
Data presented for the lagoon are single readings.

# Table 3-2A
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Low Flow July 2001
## Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS Data

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | | Surface Water Screening Values | Wappingers Lake Route 9D 07/12/2001 | Site Bridge 1 WP5-SW 07/12/2001 | Site Bridge 2 WP10-SW 07/12/2001 | Site Bridge 2 DUP WP10-SW 07/12/2001 | WP13-SW 07/12/2001 | WP18-SW 07/12/2001 |
|---|---|---|---|---|---|---|---|---|
| Volatile Organic Compounds | | | | | | | | |
| Acetone | (ug/L) | 50 G H(WS) | --- | 3 J | --- | --- | --- | --- |
| Semi-Volatile Organic Compounds (None Detected) | | | | | | | | |
| Total suspended solids (mg/L) | (mg/L) | NS | 7 | 5 U | 5 | 5 U | 5 U | 5 U |

NOTES: U - not detected, J - estimated value, NS = no screening value, --- - no data, G - guidance value, H(WS) - health water source.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2.
[ ] - exceeds Surface Water screening value. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1.

# Table 3-2A
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Low Flow July 2001
## Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS Data

| Compound | | Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units | Surface Water Screening Values | WP35-SW<br><br>07/12/2001 |
|---|---|---|---|---|
| Volatile Organic Compounds | | | | |
| Acetone | (ug/L) | | 50 G H(WS) | --- |
| Semi-Volatile Organic Compounds (None Detected) | | | | |
| Total suspended solids (mg/L) | (mg/L) | | NS | 5 U |

NOTES: U - not detected, J - estimated value, NS = no screening value, --- - no data, G - guidance value, H(WS) - health water source.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2.
[ ] - exceeds Surface Water screening value. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1.

# Table 3-2B

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Storm Event, May 2002
## Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS data

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | | Surface Water Screening Values | Wappingers Lake<br>WPLKSW-1<br>05/14/2002 | Wappingers Lake DUP<br>WPLKSW-1 DUP<br>05/14/2002 | Wappingers Lake<br>WPLKSW-2<br>05/15/2002 | Site Bridge-1<br>05/14/2002 | Site Bridge-2<br>05/15/2002 | Lagoon (outlet)<br>05/15/2002 |
|---|---|---|---|---|---|---|---|---|
| Volatile Organic Compounds (None Detected) | | | | | | | | |
| Semi-Volatile Organic Compounds (None Detected) | | | | | | | | |
| Total suspended solids (mg/L) | (mg/L) | NS | 13 | 8 | 6 | 18 | 12 | 5 U |

NOTES: U - not detected. NS - no screening value.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2. Water quality screening value obtained from NYSDEC (1998) TOGS 1.1.1.
There were no volatile or semivolatile organic compounds detected in these samples.



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# Table 3-2B

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Storm Event, May 2002
## Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS data

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | | Surface Water Screening Values | Rt. 28 Bridge -1<br><br>05/14/2002 | Rt. 28 Bridge -2<br><br>05/15/2002 |
|---|---|---|---|---|
| Volatile Organic Compounds (None Detected) | | | | |
| Semi-Volatile Organic Compounds (None Detected) | | | | |
| Total suspended solids (mg/L) | (mg/L) | NS | 18 | 20 |

NOTES: U - not detected. NS - no screening value.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2. Water quality screening value obtained from NYSDEC (1998) TOGS 1.1.1.
There were no volatile or semivolatile organic compounds detected in these samples.

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# Table 3-3A

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Low Flow, July 2001
## Inorganic Data Compared to Screening Values Including TSS and Hardness Data

| Sample ID / Location Cross Reference / Sample Date / Units / Compound | Surface Water Screening Values ug/L | Wappingers Lake Route 9D 07/12/2001 ug/L | Hardness A(C) | Site Bridge 1 WP5-SW 07/12/2001 ug/L | Hardness A(C) | Site Bridge 2 WP10-SW 07/12/2001 ug/L | Hardness A(C) | WP13-SW 07/12/2001 ug/L | Hardness A(C) | WP18-SW 07/12/2001 ug/L | Hardness A(C) | WP35-SW 07/12/2001 ug/L | Hardness A(C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 100 i-A(C) | 82 J | | 34 J | | 74 J | | 28 J | | 38 J | | 18 J | |
| Antimony | 3 H(WS) | 1.4 U | | 1.4 U | | 1.4 U | | 1.4 U | | 1.4 U | | 1.4 U | |
| Arsenic | 50/150 H(WS)/d-A(C) | 1.6 U | | 1.6 U | | 1.6 U | | 1.6 U | | 1.6 U | | 1.6 U | |
| Barium | 1000 H(WS) | 16 J | | 15 J | | 16 J | | 15 J | | 17 J | | 16 J | |
| Beryllium | 3 gd-H(WS)/A(C) | 0.08 U | 1100 | 0.08 U | 1100 | 0.08 U | 1100 | 0.08 U | 1100 | 0.08 U | 1100 | 0.08 U | 1100 |
| Cadmium | 5/h H(WS)/A(C) | 0.2 U | 3.0 | 0.2 U | 3.3 | 0.2 U | 3.2 | 0.2 U | 3.2 | 0.2 U | 3.0 | 0.2 U | 3.2 |
| Calcium | NS | 44800 | | 44500 | | 45100 | | 47500 | | 49600 | | 46500 | |
| Chromium | 11 dhx-A(C) | 1.8 J | 109 | 1.0 J | 120 | 1.7 J | 114 | 1.3 J | 114 | 1.9 J | 109 | 1.7 J | 114 |
| Cobalt | 5 A(C) | 0.9 U | | 0.9 U | | 0.9 U | | 0.9 U | | 0.9 U | | 0.9 U | |
| Copper | 200/h H(WS)/A(C) | 1.9 J | 13 | 1.4 J | 15 | 1.4 J | 14 | 1.0 J | 14 | 1.4 J | 13 | 1.3 J | 14 |
| Iron | 300 A(C) | 278 | | 207 | | 284 | | 173 | | 198 | | 152 | |
| Lead | 50/h H(WS)/A(C) | 0.7 U | 6.3 | 0.7 U | 7.1 | 0.7 U | 6.7 | 0.7 U | 6.7 | 0.7 U | 6.3 | 0.7 U | 6.7 |
| Magnesium | 35000 H(WS) | 12500 | | 12300 | | 12400 | | 13000 | | 13600 | | 12700 | |
| Manganese | 300 E | 102 | | 106 | | 134 | | 97 | | 100 | | 95 | |
| Mercury | 0.0007/0.77 d-H(FC)/A(C) | 0.2 U | | 0.2 U | | 0.2 U | | 0.2 U | | 0.2 U | | 0.2 U | |
| Nickel | 100h H(WS)/A(C) | 0.8 J | 77 | 0.7 U | 86 | 0.7 U | 81 | 0.7 U | 81 | 0.7 U | 77 | 1.0 J | 81 |
| Potassium | NS | 1010 J | | 1010 J | | 1030 J | | 1090 J | | 1150 J | | 1070 J | |
| Selenium | 4.6 d-A(C) | 1.8 U | | 1.8 U | | 1.8 U | | 1.8 U | | 1.8 U | | 1.8 U | |
| Silver | 0.1 i-A(C) | 0.7 U | | 0.7 U | | 0.7 U | | 0.7 U | | 0.7 U | | 0.7 U | |
| Sodium | NS | 28800 | | 28400 | | 28800 | | 30000 | | 31200 | | 29600 | |
| Thallium | 0.5/8 gd-H(WS)/A(C) | 3.6 U | | 3.6 U | | 3.6 U | | 3.6 U | | 3.6 U | | 3.6 U | |
| Vanadium | 14 A(C) | 0.4 U | | 0.4 U | | 0.4 U | | 0.4 U | | 0.4 U | | 0.4 U | |
| Zinc | 66 d-A(C) | 1.3 J | 123 | 2.1 J | 136 | 4.8 J | 130 | 4.7 J | 130 | 5.0 J | 123 | 1.1 J | 130 |
| Cyanide, total | 5.2 f-A(C) | 10.0 U | | 10.0 U | | 10.0 U | | 10.0 U | | 10.0 U | | 10.0 U | |
| Total suspended solids (mg/L) | NS | 7 | | 5 U | | 5 | | 5 U | | 5 U | | 5 U | |
| Hardness (mg/L) | NS | 160 | | 180 | | 170 | | 170 | | 160 | | 170 | |

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.



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# Table 3-3B
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Storm Event, May 2002
## Inorganic Data Compared to Screening Values Including TSS and Hardness Data

| Sample ID / Location Cross Reference / Sample Date / Units / Compound | Surface Water Screening Values ug/L | Wappingers Lake WPLKSW-1 05/14/2002 ug/L | Hardness A(C) | Wappingers Lake WPLKSW-2 05/15/2002 ug/L | Hardness A(C) | Site Bridge-1 05/14/2002 ug/L | Hardness A(C) | Site Bridge-2 05/15/2002 ug/L | Hardness A(C) | Lagoon (outlet) 05/15/2002 ug/L | Hardness A(C) | Rt 28 Bridge -1 05/14/2002 ug/L | Hardness A(C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 100 i-A(C) | [451 ] | | [256 ] | | [593 ] | | [412 ] | | [143 J] | | [696 ] | |
| Antimony | 3 H(WS) | 2.0 U | | 2.0 U | | 2.0 U | | 2.0 U | | 2.0 U | | 2.0 U | |
| Arsenic | 50/150 H(WS)/d-A(C) | 3.3 U | | 3.3 U | | 3.3 U | | 3.3 U | | 3.3 U | | 3.3 U | |
| Barium | 1000 H(WS) | 17 J | | 13 J | | 19 J | | 15 J | | 18 J | | 19 J | |
| Beryllium | 3 gd-H(WS)/A(C) | 0.1 U | 1100 | 0.1 U | 1100 | 0.1 U | 1100 | 0.1 U | 1100 | 0.1 U | 1100 | 0.1 J | 1100 |
| Cadmium | 5/h H(WS)/A(C) | 0.4 U | 2.3 | 0.4 U | 2.3 | 0.4 U | 2.1 | 0.4 U | 2.1 | 0.4 U | 2.3 | 0.4 U | 2.3 |
| Calcium | NS | 30100 | | 30600 | | 30700 | | 30300 | | 35300 | | 30800 | |
| Chromium | 11 dhx-A(C) | 1.2 U | 80 | 1.2 U | 80 | 1.2 U | 74 | 1.2 U | 74 | 1.2 U | 80 | 1.2 U | 80 |
| Cobalt | 5 A(C) | 1.3 U | | 1.3 U | | 1.3 U | | 1.3 U | | 1.3 U | | 1.3 U | |
| Copper | 200/h H(WS)/A(C) | 2.3 J | 10 | 3.4 J | 10 | 1.8 U | 9.0 | 2.1 J | 9.0 | 2.4 J | 10 | 2.1 J | 10 |
| Iron | 300 A(C) | [610 ] | | [386 ] | | [708 ] | | [581 ] | | 281 | | [834 ] | |
| Lead | 50/h H(WS)/A(C) | 0.8 J | 4.2 | 0.8 U | 4.2 | 0.9 J | 3.8 | 1.1 J | 3.8 | 1.7 J | 4.2 | 0.9 J | 4.2 |
| Magnesium | 35000 H(WS) | 7120 | | 7130 | | 7250 | | 7130 | | 8540 | | 7570 | |
| Manganese | 300 E | 99 | | 69 | | 109 | | 88 | | 95 | | 107 | |
| Mercury | 0.0007/0.77 d-H(FC)/A(C) | 0.1 U | | 0.1 U | | 0.1 U | | 0.1 U | | 0.1 U | | 0.1 U | |
| Nickel | 100h H(WS)/A(C) | 1.8 U | 56 | 1.8 U | 56 | 1.8 U | 52 | 1.8 U | 52 | 1.8 U | 56 | 1.8 U | 56 |
| Potassium | NS | 1350 J | | 1320 J | | 1390 J | | 1260 J | | 1410 J | | 1360 J | |
| Selenium | 4.6 d-A(C) | 2.9 U | | 2.9 U | | 2.9 U | | 2.9 U | | 2.9 U | | 2.9 U | |
| Silver | 0.1 i-A(C) | [2.2 J] | | [1.8 J] | | [1.7 J] | | [2.1 J] | | [2.0 J] | | 1.5 U | |
| Sodium | NS | 21200 J | | 20800 J | | 22400 J | | 20700 J | | 25700 J | | 24600 J | |
| Thallium | 0.5/8 gd-H(WS)/A(C) | 3.7 U | | 3.7 U | | 3.7 U | | 3.7 U | | 3.7 U | | 3.7 U | |
| Vanadium | 14 A(C) | 2.2 J | | 1.6 J | | 2.0 J | | 2.0 J | | 2.0 J | | 1.8 J | |
| Zinc | 66 d-A(C) | 4.8 J | 90 | 6.8 J | 90 | 7.4 J | 83 | 6.4 J | 83 | 6.5 J | 90 | 7.0 J | 90 |
| Cyanide, total | 5.2 f-A(C) | 10.0 U | | 10.0 U | | 10.0 U | | [20 ] | | 10.0 U | | 10.0 U | |
| Total suspended solids (mg/L) | NS | 13 | | 6 | | 18 | | 12 | | 5 U | | 18 | |
| Hardness (mg/L) | NS | 110 | | 110 | | 100 | | 100 | | 110 | | 110 | |

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.



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O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3B
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Storm Event, May 2002
## Inorganic Data Compared to Screening Values Including TSS and Hardness Data

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Units<br>Compound | Surface Water Screening Values<br>ug/L | Rt. 28 Bridge -2<br>05/15/2002<br>ug/L | Hardness A(C) | | Hardness A(C) | | Hardness A(C) | | Hardness A(C) | | Hardness A(C) | | Hardness A(C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 100 i-A(C) | [676 ] | | | | | | | | | | | |
| Antimony | 3 H(WS) | 2.0 U | | | | | | | | | | | |
| Arsenic | 50/150 H(WS)/d-A(C) | 3.3 U | | | | | | | | | | | |
| Barium | 1000 H(WS) | 17 J | | | | | | | | | | | |
| Beryllium | 3 gd-H(WS)/A(C) | 0.1 J | 1100 | | | | | | | | | | |
| Cadmium | 5/h H(WS)/A(C) | 0.4 U | 2.4 | | | | | | | | | | |
| Calcium | NS | 31100 | | | | | | | | | | | |
| Chromium | 11 dhx-A(C) | 1.2 U | 86 | | | | | | | | | | |
| Cobalt | 5 A(C) | 1.3 U | | | | | | | | | | | |
| Copper | 200/h H(WS)/A(C) | 2.8 J | 10 | | | | | | | | | | |
| Iron | 300 A(C) | [895 ] | | | | | | | | | | | |
| Lead | 50/h H(WS)/A(C) | 2.0 J | 4.6 | | | | | | | | | | |
| Magnesium | 35000 H(WS) | 7290 | | | | | | | | | | | |
| Manganese | 300 E | 107 | | | | | | | | | | | |
| Mercury | 0.0007/0.77 d-H(FC)/A(C) | 0.1 U | | | | | | | | | | | |
| Nickel | 100h H(WS)/A(C) | 1.8 U | 61 | | | | | | | | | | |
| Potassium | NS | 1370 J | | | | | | | | | | | |
| Selenium | 4.6 d-A(C) | 2.9 U | | | | | | | | | | | |
| Silver | 0.1 i-A(C) | [1.7 J] | | | | | | | | | | | |
| Sodium | NS | 21700 J | | | | | | | | | | | |
| Thallium | 0.5/8 gd-H(WS)/A(C) | 3.7 U | | | | | | | | | | | |
| Vanadium | 14 A(C) | 2.3 J | | | | | | | | | | | |
| Zinc | 66 d-A(C) | 8.6 J | 96 | | | | | | | | | | |
| Cyanide, total | 5.2 f-A(C) | [10.0 ] | | | | | | | | | | | |
| Total suspended solids (mg/L) | NS | 20 | | | | | | | | | | | |
| Hardness (mg/L) | NS | 120 | | | | | | | | | | | |

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.



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File Number: 10653.27258

# Table 4-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | WP-LK01-A 05/10/2001 0 - 6 in. C mg/Kg | SC ug/gOC | WP-LK01-A 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC | WP-LK01-A 05/10/2001 19 - 25 in. C mg/Kg | SC ug/gOC | WP-LK01-B 05/10/2001 0 - 6 in. C mg/Kg | SC ug/gOC | WP-LK01-B 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Butanone (MEK) | NS | 0.02 J | 0.2 | 0.02 J | 0.3 | 0.03 J | 0.8 | 0.01 J | 0.2 | 0.03 J | 0.5 |
| Acetone | 0.03 (W) | --- | --- | --- | --- | 0.07 J | [2] | --- | --- | --- | --- |
| Carbon disulfide | NS | 0.005 J | 0.05 | --- | --- | --- | --- | --- | --- | 0.009 J | 0.1 |
| Chloromethane | NS | --- | --- | --- | --- | --- | --- | --- | --- | 0.01 J | 0.2 |
| Methylene chloride | 0.09 (W) | --- | --- | --- | --- | 0.01 J | [0.3] | --- | --- | --- | --- |
| Tetrachloroethene | 0.8 (H) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | 49 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | 2.0 (H) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene (total) | 92 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | 0.6 (W) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | 0.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total BTEX | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total Chlorinated VOCs | NS | --- | --- | --- | --- | 0.01 | 0.3 | --- | --- | --- | --- |
| Total VOCs | NS | 0.02 | 0.2 | 0.02 | 0.4 | 0.1 | 3 | 0.01 | 0.1 | 0.05 | 0.8 |
| Total organic carbon (mg/Kg) | NA | 99100 | --- | 47000 | --- | 33800 | --- | 66800 | --- | 62000 | --- |
| % TOC | NA | 10 | --- | 4.7 | --- | 3.4 | --- | 6.7 | --- | 6.2 | --- |
| Percent solids (%) | NA | 22 | --- | 35 | --- | 46 | --- | 25 | --- | 32 | --- |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location.
When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999).
Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID | NYS Sediment Values | WP-LK01-B DUP | | WP-LK01-B | | WP-LK01-C | | WP-LK01-C | | WP-LK01-C | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Date | | 05/10/2001 6 - 12 in. | | 05/10/2001 25 - 31 in. | | 05/10/2001 0 - 6 in. | | 05/10/2001 6 - 12 in. | | 05/10/2001 26 - 32 in. | |
| Compound | ug/g OC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 2-Butanone (MEK) | NS | 0.04 J | 0.7 | 0.02 J | 0.3 | 0.02 J | 0.3 | 0.04 J | 0.6 | 0.03 J | 0.6 |
| Acetone | 0.03 (W) | --- | --- | --- | --- | --- | --- | 0.1 J | [2] | 0.1 J | [2] |
| Carbon disulfide | NS | 0.006 J | 0.1 | 0.004 J | 0.07 | --- | --- | --- | --- | --- | --- |
| Chloromethane | NS | --- | --- | 0.002 J | 0.04 | 0.004 J | 0.07 | --- | --- | --- | --- |
| Methylene chloride | 0.09 (W) | 0.006 J | [0.1] | --- | --- | --- | --- | 0.003 J | 0.05 | --- | --- |
| Tetrachloroethene | 0.8 (H) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | 49 | --- | --- | --- | --- | 0.004 J | 0.07 | --- | --- | --- | --- |
| Trichloroethene | 2.0 (H) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene (total) | 92 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | 0.6 (W) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | 0.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total BTEX | NS | --- | --- | --- | --- | 0.004 | 0.07 | --- | --- | --- | --- |
| Total Chlorinated VOCs | NS | 0.006 | 0.1 | --- | --- | --- | --- | 0.003 | 0.05 | --- | --- |
| Total VOCs | NS | 0.05 | 0.9 | 0.02 | 0.4 | 0.02 | 0.3 | 0.1 | 2 | 0.1 | 3 |
| Total organic carbon (mg/Kg) | NA | 55200 | --- | 54700 | --- | 58700 | --- | 55500 | --- | 38800 | --- |
| % TOC | NA | 5.5 | --- | 5.5 | --- | 5.9 | --- | 5.6 | --- | 3.9 | --- |
| Percent solids (%) | NA | 34 | --- | 48 | --- | 29 | --- | 36 | --- | 50 | --- |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999). Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID | NYS Sediment Values | LG-OUT | | WP-LGOUT2 | | WP-16 | | WP-18 | | WP-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Date | | 05/09/2001 0 - 6 in. | | 05/13/2003 0 - 6 in. | | 05/09/2001 0 - 6 in. | | 05/09/2001 0 - 6 in. | | 05/09/2001 6 - 12 in. | |
| Compound | ug/g OC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 2-Butanone (MEK) | NS | --- | --- | --- | --- | --- | --- | 0.008 J | 0.3 | 0.007 J | 0.3 |
| Acetone | 0.03 (W) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon disulfide | NS | --- | --- | --- | --- | --- | --- | 0.005 J | 0.2 | 0.002 J | 0.08 |
| Chloromethane | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene chloride | 0.09 (W) | --- | --- | --- | --- | 0.002 J | [0.2] | 0.004 J | [0.2] | --- | --- |
| Tetrachloroethene | 0.8 (H) | 0.02 | 0.4 | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | 49 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | 2.0 (H) | 0.02 | 0.4 | 0.001 J | 0.08 | --- | --- | --- | --- | --- | --- |
| Xylene (total) | 92 | 0.002 J | 0.04 | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | 0.6 (W) | 0.003 J | 0.05 | 0.002 J | 0.2 | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | 0.6 | 0.002 J | 0.04 | 0.001 J | 0.08 | --- | --- | --- | --- | --- | --- |
| Total BTEX | NS | 0.002 | 0.04 | --- | --- | --- | --- | --- | --- | --- | --- |
| Total Chlorinated VOCs | NS | 0.05 | 0.9 | 0.004 | 0.3 | 0.002 | 0.2 | 0.004 | 0.2 | --- | --- |
| Total VOCs | NS | 0.05 | 0.9 | 0.004 | 0.3 | 0.002 | 0.2 | 0.02 | 0.9 | 0.009 | 0.4 |
| Total organic carbon (mg/Kg) | NA | 56000 | --- | 12400 J | --- | 8770 | --- | 23400 | --- | 24400 | --- |
| % TOC | NA | 5.6 | --- | 1.2 J | --- | 0.9 | --- | 2.3 | --- | 2.4 | --- |
| Percent solids (%) | NA | 77 | --- | 75 | --- | 79 | --- | 68 | --- | 64 | --- |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999). Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

# Table 4-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID | NYS Sediment Values | WP-29 | | WP-29 | | WP-29 | | WP-PL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Date | | 05/09/2001 0 - 6 in. | | 05/09/2001 6 - 12 in. | | 05/09/2001 12 - 18 in. | | 05/08/2001 6 - 11 in. | | | |
| Compound | ug/g OC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 2-Butanone (MEK) | NS | 0.008 J | 0.4 | 0.03 J | 5 | 0.08 J | 0.7 | 0.03 J | 0.3 | | |
| Acetone | 0.03 (W) | --- | --- | 0.09 J | [12] | --- | --- | 0.06 J | [0.7] | | |
| Carbon disulfide | NS | --- | --- | 0.003 J | 0.4 | 0.01 J | 0.1 | --- | --- | | |
| Chloromethane | NS | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Methylene chloride | 0.09 (W) | --- | --- | 0.02 | [2] | --- | --- | --- | --- | | |
| Tetrachloroethene | 0.8 (H) | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Toluene | 49 | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Trichloroethene | 2.0 (H) | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Xylene (total) | 92 | --- | --- | --- | --- | --- | --- | --- | --- | | |
| cis-1,2-Dichloroethene | 0.6 (W) | --- | --- | --- | --- | --- | --- | --- | --- | | |
| trans-1,2-Dichloroethene | 0.6 | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Total BTEX | NS | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Total Chlorinated VOCs | NS | --- | --- | 0.02 | 3 | --- | --- | --- | --- | | |
| Total VOCs | NS | 0.008 | 0.4 | 0.1 | 14 | 0.09 | 0.9 | 0.09 | 1 | | |
| Total organic carbon (mg/Kg) | NA | 21700 | --- | 7330 | --- | 105000 | --- | --- | --- | | |
| % TOC | NA | 2.2 | --- | 0.7 | --- | 11 | --- | --- | --- | | |
| Percent solids (%) | NA | 56 | --- | 62 | --- | 58 | --- | --- | --- | | |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%, when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999). Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-LK1 05/12/2003 0 - 6 in. C mg/Kg | WP-LK1 SC ug/gOC | WP-LK2 05/12/2003 0 - 6 in. C mg/Kg | WP-LK2 SC ug/gOC | WP-LK3 05/12/2003 0 - 6 in. C mg/Kg | WP-LK3 SC ug/gOC | WP-LK4 05/12/2003 0 - 6 in. C mg/Kg | WP-LK4 SC ug/gOC | WP-LK5 05/12/2003 0 - 6 in. C mg/Kg | WP-LK5 SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | 12 | --- | --- | --- | --- | --- | 0.3 J | 4 | 0.2 J | 5 | 0.3 J | 7 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.2 J | [2] | --- | --- | 0.3 J | [4] | 0.2 J | [5] | 0.4 J | [8] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.4 J | [4] | 0.4 J | [4] | 0.5 J | [9] | 0.4 J | [9] | 0.6 J | [13] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | --- | --- | --- | --- | 0.2 J | 4 | 0.2 J | 5 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 J | [5] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.3 J | [3] | 0.3 J | [3] | 0.4 J | [6] | 0.3 J | [7] | 0.4 J | [10] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 0.4 J | 4 | 0.5 J | 5 | 0.6 J | 9 | 0.5 J | 11 | 0.7 J | 14 |
| Fluorene | 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | --- | --- | --- | --- | 0.2 J | [4] | 0.2 J | [5] |
| Naphthalene | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | --- | --- | --- | --- | --- | --- | 0.2 J | 4 | 0.2 J | 5 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 0.4 J | 4 | 0.5 J | 5 | 0.6 J | 10 | 0.5 J | 11 | 0.8 J | 17 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 102000 J | --- | 91600 J | --- | 63300 J | --- | 42100 J | --- | 46100 J | --- |
| % TOC | NA | --- | 10 J | --- | 9.2 J | --- | 6.3 J | --- | 4.2 J | --- | 4.6 J | --- |
| Percent solids (%) | NA | --- | 18 | --- | 12 | --- | 14 | --- | 25 | --- | 36 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 1.7 | --- | 1.7 | --- | 2.6 | --- | 2.5 | --- | [4.1] | --- |
| Total Carcinogenic PAHs | NS | NS | 0.9 | --- | 0.7 | --- | 1.5 | --- | 1.2 | --- | 2.2 | --- |
| Total SVOCs | NS | --- | 1.7 | --- | 1.7 | --- | 2.6 | --- | 2.5 | --- | 4.1 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.3 | [3] | 0.04 | 0.4 | 0.4 | [6] | 0.3 | [7] | 0.5 | [11] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-LK01-A 05/10/2001 0 - 6 in. C mg/Kg | SC ug/gOC | WP-LK01-A 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC | WP-LK01-A 05/10/2001 19 - 25 in. C mg/Kg | SC ug/gOC | WP-LK01-B 05/10/2001 0 - 6 in. C mg/Kg | SC ug/gOC | WP-LK01-B 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | 12 | --- | 0.4 J | 4 | 0.2 J | 4 | 0.1 J | 4 | 0.4 J | 6 | 0.3 J | 4 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {0.5 J} | [5] | 0.2 J | [4] | 0.1 J | [3] | {0.5 J} | [7] | 0.3 J | [4] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 1.0 J | [10] | 0.4 J | [9] | 0.2 J | [6] | 0.8 J | [12] | 0.5 J | [9] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | --- | --- | --- | --- | 0.2 J | 2 | --- | --- |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.3 J | [3] | --- | --- | 0.08 J | [2] | 0.3 J | [5] | 0.2 J | [3] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.6 J | [6] | 0.3 J | [6] | 0.2 J | [5] | 0.6 J | [9] | 0.3 J | [5] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 1.0 J | 10 | 0.4 J | 9 | 0.2 J | 7 | 0.9 J | 13 | 0.5 J | 9 |
| Fluorene | 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | --- | --- | --- | --- | 0.3 J | [4] | --- | --- |
| Naphthalene | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 0.4 J | 4 | 0.2 J | 5 | 0.1 J | 4 | 0.5 J | 7 | 0.3 J | 4 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 1.3 J | 13 | 0.6 J | 13 | 0.3 J | 10 | 1.2 J | 18 | 0.8 J | 13 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 1.1 J | 11 | 0.5 J | 11 | 0.3 J | 9 | 0.6 J | 8 | 0.4 J | 6 |
| Total organic carbon (mg/Kg) | NA | --- | 99100 | --- | 47000 | --- | 33800 | --- | 66800 | --- | 62000 | --- |
| % TOC | NA | --- | 10 | --- | 4.7 | --- | 3.4 | --- | 6.7 | --- | 6.2 | --- |
| Percent solids (%) | NA | --- | 22 | --- | 35 | --- | 46 | --- | 25 | --- | 32 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [5.4] | --- | 2.4 | --- | 1.4 | --- | [5.5] | --- | 3.2 | --- |
| Total Carcinogenic PAHs | NS | NS | 2.7 | --- | 1.1 | --- | 0.7 | --- | 2.8 | --- | 1.6 | --- |
| Total SVOCs | NS | --- | 6.5 | --- | 2.9 | --- | 1.7 | --- | 6.1 | --- | 3.6 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.6 | [6] | 0.3 | [6] | 0.1 | [3] | 0.6 | [9] | 0.4 | [6] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection, L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-LK01-B DUP 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC | WP-LK01-B 05/10/2001 25 - 31 in. C mg/Kg | SC ug/gOC | WP-LK01-C 05/10/2001 0 - 6 in. C mg/Kg | SC ug/gOC | WP-LK01-C 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC | WP-LK01-C 05/10/2001 26 - 32 in. C mg/Kg | SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | 12 | --- | 0.3 J | 5 | 0.09 J | 2 | 0.4 J | 7 | 0.2 J | 4 | 0.1 J | 3 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.3 J | [5] | 0.09 J | [2] | 0.4 J | [7] | 0.2 J | [4] | 0.2 J | [5] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.5 J | [9] | 0.2 J | [3] | 0.8 J | [14] | 0.4 J | [7] | 0.2 J | [6] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | --- | --- | 0.2 J | 3 | 0.1 J | 2 | 0.4 J | 10 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.2 J | [3] | --- | --- | 0.3 J | [5] | 0.1 J | [2] | --- | --- |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.4 J | [7] | 0.1 J | [3] | 0.6 J | [11] | 0.3 J | [5] | 0.2 J | [5] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 0.6 J | 10 | 0.2 J | 3 | 0.9 J | 16 | 0.4 J | 8 | 0.3 J | 7 |
| Fluorene | 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | --- | --- | 0.3 J | [5] | 0.1 J | [2] | 0.1 J | [3] |
| Naphthalene | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 0.3 J | 5 | 0.1 J | 2 | 0.4 J | 7 | 0.2 J | 4 | 0.2 J | 4 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 0.7 J | 13 | 0.3 J | 5 | 1.0 J | 17 | 0.5 J | 9 | 0.4 J | 10 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 0.5 J | 8 | 0.2 J | 3 | 0.5 J | 8 | 0.3 J | 6 | 0.2 J | 4 |
| Total organic carbon (mg/Kg) | NA | --- | 55200 | --- | 54700 | --- | 58700 | --- | 55500 | --- | 38800 | --- |
| % TOC | NA | --- | 5.5 | --- | 5.5 | --- | 5.9 | --- | 5.6 | --- | 3.9 | --- |
| Percent solids (%) | NA | --- | 34 | --- | 48 | --- | 29 | --- | 36 | --- | 50 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 3.1 | --- | 1.0 | --- | [5.4] | --- | 2.6 | --- | 2.0 | --- |
| Total Carcinogenic PAHs | NS | NS | 1.5 | --- | 0.5 | --- | 2.8 | --- | 1.3 | --- | 0.9 | --- |
| Total SVOCs | NS | --- | 3.5 | --- | 1.2 | --- | 5.9 | --- | 2.9 | --- | 2.2 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.3 | [5] | 0.1 | [2] | 0.6 | [10] | 0.3 | [5] | 0.2 | [5] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg

# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-01-A 05/09/2001 0 - 6 in. C mg/Kg | WP-01-A SC ug/gOC | WP-04.45-9 05/09/2001 0 - 6 in. C mg/Kg | WP-04.45-9 SC ug/gOC | WP-09A 05/09/2001 0 - 6 in. C mg/Kg | WP-09A SC ug/gOC | WP-11A 05/09/2001 0 - 6 in. C mg/Kg | WP-11A SC ug/gOC | LG-OUT 05/09/2001 0 - 6 in. C mg/Kg | LG-OUT SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.1 J | 3 |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.4 J | 19 | --- | --- | --- | --- | 0.1 J | 2 |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | 1.9 J | 86 | 0.1 J | 2 | --- | --- | 0.4 J | 7 |
| Benzo(a)anthracene | 12 | --- | --- | --- | 6.1 | [276] | 0.3 J | 4 | 0.3 J | 4 | 2.6 | [46] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | --- | --- | {5.9 } | [267] | 0.3 J | [4] | 0.4 J | [5] | {3.6 } | [64] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.05 J | [3] | {8.8 } | [398] | 0.5 | [7] | 0.5 | [6] | {4.6 } | [82] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | 1.4 J | 63 | 0.1 J | 2 | 0.2 J | 3 | 1.7 | 30 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 2.2 | [100] | 0.2 J | [2] | 0.2 J | [2] | 1.4 | [25] |
| Carbazole | NS | NS | --- | --- | 1.2 J | 54 | 0.05 J | 0.8 | --- | --- | 0.2 J | 4 |
| Chrysene | 1.3 (H) | --- | --- | --- | 5.8 | [262] | 0.4 J | [6] | 0.3 J | [4] | 2.5 | [45] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | 0.7 J | [30] | --- | --- | --- | --- | 0.9 | [16] |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.5 J | 21 | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 0.05 J | 3 | 11 | 498 | 0.6 | 10 | 0.5 | 6 | 2.8 | 50 |
| Fluorene | 8 | --- | --- | --- | 0.4 J | [19] | 0.05 J | 0.8 | --- | --- | 0.1 J | 2 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | 2.2 J | [100] | 0.2 J | [3] | 0.3 J | [3] | 2.6 | [46] |
| Naphthalene | 30 | --- | --- | --- | 0.4 J | 17 | --- | --- | --- | --- | 0.1 J | 2 |
| Phenanthrene | 120 | --- | --- | --- | 7.5 | [339] | 0.6 | 9 | 0.2 J | 2 | 1.5 | 27 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 0.05 J | 3 | 9.2 | 416 | 0.8 | 11 | 0.5 | 7 | 3.3 | 59 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 0.1 J | 5 | --- | --- | 0.5 | 7 | 0.1 J | 2 | 0.6 J | 10 |
| Total organic carbon (mg/Kg) | NA | --- | 18600 | --- | 22100 | --- | 65500 | --- | 76500 | --- | 56000 | --- |
| % TOC | NA | --- | 1.9 | --- | 2.2 | --- | 6.6 | --- | 7.7 | --- | 5.6 | --- |
| Percent solids (%) | NA | --- | 81 | --- | 73 | --- | 66 | --- | 65 | --- | 77 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 0.2 | --- | [64 ] | --- | 4.0 | --- | 3.4 | --- | [28 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 0.05 | --- | 32 | --- | 1.8 | --- | 2.0 | --- | 18 | --- |
| Total SVOCs | NS | --- | 0.2 | --- | 66 | --- | 4.6 | --- | 3.6 | --- | 29 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.005 | 0.3 | 8.4 | [380] | 0.4 | [6] | 0.5 | [7] | 5.5 | [98] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, — - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg

# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Coucentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-LGOUT2 05/13/2003 0 - 6 in. C mg/Kg | WP-LGOUT2 SC ug/gOC | WP-MW4 05/13/2003 0 - 6 in. C mg/Kg | WP-MW4 SC ug/gOC | WP-MW4 DUP 05/13/2003 0 - 6 in. C mg/Kg | WP-MW4 DUP SC ug/gOC | WP-16 05/09/2001 0 - 6 in. C mg/Kg | WP-16 SC ug/gOC | WP-18 05/09/2001 0 - 6 in. C mg/Kg | WP-18 SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | 0.07 J | 5 | --- | --- | 0.2 J | [16] | 0.05 J | 5 | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | 0.09 J | 8 | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | 0.05 J | 2 | 0.1 J | 12 | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | 0.05 J | 2 | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.04 J | 2 | 0.2 J | 15 | 0.09 J | 10 | 0.1 J | 6 |
| Acenaphthylene | NS | --- | --- | --- | 0.5 | 19 | 0.4 J | 31 | --- | --- | --- | --- |
| Anthracene | 107 | --- | 0.2 J | 12 | 0.8 | 31 | 1.2 | 99 | 0.3 J | 31 | 0.3 J | 14 |
| Benzo(a)anthracene | 12 | --- | 0.7 | [52] | 3.8 D | [150] | 4.7 D | [388] | 0.8 | [94] | 1.0 | [41] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {0.7 } | [52] | {3.7 D} | [146] | {4.5 D} | [372] | {0.7 } | [76] | {0.7 } | [32] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.8 | [65] | {4.5 D} | [177] | {6.2 D} | [512] | 0.9 | [105] | 1.0 | [43] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.3 J | 26 | 1.2 | 47 | 1.5 | 124 | 0.3 J | 33 | 0.2 J | 10 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.3 J | [23] | 1.4 | [55] | 2.0 | [165] | 0.3 J | [35] | 0.4 J | [15] |
| Carbazole | NS | NS | 0.09 J | 7 | 0.1 J | 6 | 0.4 J | 35 | 0.1 J | 14 | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.6 | [48] | 2.9 | [114] | 4.2 D | [347] | 0.8 | [91] | 0.8 | [36] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 0.1 J | 10 | 0.6 | [23] | 0.7 | [57] | 0.2 J | [18] | 0.1 J | 5 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.1 J | 5 | 0.3 J | 21 | 0.06 J | 7 | --- | --- |
| Fluoranthene | 1020 | --- | 1.0 | 78 | 6.4 D | 252 | 9.0 D | 744 | 1.5 | 171 | 1.7 | 73 |
| Fluorene | 8 | --- | --- | --- | 0.2 J | 8 | 0.3 J | [25] | 0.1 J | [14] | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.4 J | [29] | 1.6 | [63] | 1.9 | [157] | 0.5 | [54] | 0.3 J | [13] |
| Naphthalene | 30 | --- | 0.05 J | 4 | 0.2 J | 6 | 0.4 | [36] | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 0.6 | 52 | 2.4 | 94 | 4.4 D | [364] | 1.3 | [148] | 0.6 | 24 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 1.1 | 89 | 5.4 D | 213 | 7.2 D | 595 | 1.5 | 171 | 1.6 | 68 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | 0.3 J | 29 | 0.2 J | 7 |
| Total organic carbon (mg/Kg) | NA | --- | 12400 J | --- | 25400 | --- | 12100 | --- | 8770 | --- | 23400 | --- |
| % TOC | NA | --- | 1.2 J | --- | 2.5 | --- | 1.2 | --- | 0.9 | --- | 2.3 | --- |
| Percent solids (%) | NA | --- | 75 | --- | 81 | --- | 79 | --- | 79 | --- | 68 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [6.7 ] | --- | [12 ] | --- | [8.7 ] | --- | [9.2 ] | --- | [8.9 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 3.5 | --- | 6.5 | --- | 4.6 | --- | 4.2 | --- | 4.3 | --- |
| Total SVOCs | NS | --- | 6.9 | --- | 12 | --- | 9.7 | --- | 9.7 | --- | 9.0 | --- |
| BaP Equivalents | 1.3 (H) | NS | 1.0 | [81] | 0.8 | [31] | 0.9 | [74] | 1.1 | [125] | 1.1 | [47] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-18 05/09/2001 6 - 12 in. C mg/Kg | WP-18 SC ug/gOC | WP-M2 05/14/2003 0 - 6 in. C mg/Kg | WP-M2 SC ug/gOC | WP-M2 05/14/2003 6 - 12 in. C mg/Kg | WP-M2 SC ug/gOC | WP-M2 05/14/2003 12 - 17 in. C mg/Kg | WP-M2 SC ug/gOC | WP-M3 05/14/2003 0 - 6 in. C mg/Kg | WP-M3 SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | 0.04 J | 4 | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | 1.4 J | 124 | 1.0 | 88 | 0.1 J | 1 |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | 1.7 J | 150 | 0.2 J | 19 | 0.1 J | 2 |
| Anthracene | 107 | --- | --- | --- | 0.3 J | 30 | 5.8 | [513] | 1.0 | 88 | 0.3 J | 5 |
| Benzo(a)anthracene | 12 | --- | 0.08 J | 3 | 1.4 J | [124] | 17 | [1504] | 4.2 D | [372] | 1.3 | [20] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.07 J | [3] | {1.1 J} | [97] | {14 } | [1239] | {3.6 D} | [319] | {1.2 } | [19] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.1 J | [6] | 2.0 J | [177] | {17 } | [1504] | {4.4 D} | [389] | 1.8 | [28] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | 0.7 J | 58 | {4.3 J} | 381 | 1.2 JD | 106 | 0.6 J | 10 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 0.6 J | [52] | {6.8 } | [602] | 1.7 JD | [150] | 0.7 J | [11] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | 0.2 J | 14 | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.09 J | [4] | 1.2 J | [106] | 14 | [1239] | 3.7 D | [327] | 1.5 | [24] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | 0.2 J | [20] | 1.9 J | [168] | 0.5 JD | [47] | 0.2 J | 4 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | 0.7 J | 62 | 0.3 J | 28 | --- | --- |
| Fluoranthene | 1020 | --- | 0.2 J | 8 | 2.4 | 212 | 33 | [2920] | 8.4 D | 743 | 2.4 | 38 |
| Fluorene | 8 | --- | --- | --- | --- | --- | 1.6 J | [142] | 0.5 | [45] | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | 0.7 J | [58] | 5.1 J | [451] | 1.4 JD | [124] | 0.6 J | [10] |
| Naphthalene | 30 | --- | --- | --- | --- | --- | 1.2 J | [106] | 0.3 J | 30 | --- | --- |
| Phenanthrene | 120 | --- | 0.06 J | 2 | 0.8 J | 74 | 11 | [973] | 1.6 | [142] | 1.0 | 16 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | 0.1 J | [10] | --- | --- |
| Pyrene | 961 | --- | 0.3 J | 12 | 2.7 J | 239 | 29 | [2566] | 7.7 D | 681 | 2.9 | 45 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 0.1 J | 6 | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 24400 | --- | 11300 e BJ | --- | 11300 e BJ | --- | 11300 BJ | --- | 63800 BJ | --- |
| % TOC | NA | --- | 2.4 | --- | 1.1 e BJ | --- | 1.1 e BJ | --- | 1.1 BJ | --- | 6.4 BJ | --- |
| Percent solids (%) | NA | --- | 64 | --- | 28 | --- | 66 | --- | 79 | --- | 39 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 0.9 | --- | 3.6 | --- | [165 ] | --- | [4.7 ] | --- | [9.6 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 0.4 | --- | 7.2 | --- | 76 | --- | 20 | --- | 2.8 | --- |
| Total SVOCs | NS | --- | 1.1 | --- | 3.6 | --- | 166 | --- | 5.3 | --- | 9.6 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.09 | [4] | 1.8 | [159] | 20 | [1770] | 5.2 | [460] | 0.1 | [2] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-M3 05/14/2003 6 - 12 in. C mg/Kg | WP-M3 SC ug/gOC | WP-DOT 05/14/2003 0 - 6 in. C mg/Kg | WP-DOT SC ug/gOC | WP-DOT 05/14/2003 6 - 12 in. C mg/Kg | WP-DOT SC ug/gOC | WP-DOT 05/14/2003 12 - 18 in. C mg/Kg | WP-DOT SC ug/gOC | WP-29A 05/14/2003 0 - 6 in. C mg/Kg | WP-29A SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.4 | [28] |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 J | 4 |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | [26] |
| 2-Methylnaphthalene | 34 | --- | 1.0 J | 19 | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | 2.7 J | 54 | --- | --- | 4.9 J | 366 | 6.6 J | 493 | 0.3 J | 5 |
| Acenaphthylene | NS | --- | --- | --- | 1.2 J | 90 | --- | --- | --- | --- | 0.3 J | 6 |
| Anthracene | 107 | --- | 5.1 | 102 | 4.5 J | [336] | 17 | [1269] | 31 | [2313] | 1.1 J | 22 |
| Benzo(a)anthracene | 12 | --- | 8.7 | [174] | 13 | [970] | 27 | [2015] | 27 | [2015] | 3.8 | [76] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {8.1 } | [162] | {10 } | [746] | {20 } | [1493] | {21 } | [1567] | {3.6 DJ} | [72] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | {9.5 } | [190] | {12 } | [896] | {25 } | [1866] | {24 } | [1791] | {4.7 DJ} | [94] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 2.5 J | 50 | 2.8 J | 209 | {8.6 J} | 642 | {7.0 J} | 522 | 1.1 DJ | 22 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 4.0 J | [80] | 4.0 J | [299] | {7.7 J} | [575] | {8.3 J} | [619] | 1.8 DJ | [36] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 8.6 | [172] | 10 | [746] | 22 | [1642] | 24 | [1791] | 3.4 | [68] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 1.2 J | [24] | 1.2 J | [90] | 3.6 J | [269] | 2.8 J | [209] | 0.5 DJ | 9 |
| Dibenzofuran | NS | 5.1 (2) | 1.4 J | 28 | --- | --- | 2.5 J | 187 | 3.1 J | 231 | 0.1 J | 3 |
| Fluoranthene | 1020 | --- | 18 | 360 | 24 | [1791] | 61 | [4552] | 65 | [4851] | 6.0 | 120 |
| Fluorene | 8 | --- | 1.9 J | [38] | 0.6 J | [44] | 6.6 J | [493] | 9.2 J | [687] | 0.3 J | 6 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 3.2 J | [64] | 3.6 J | [269] | 9.3 J | [694] | 7.6 J | [567] | 1.2 DJ | [24] |
| Naphthalene | 30 | --- | 2.6 J | [52] | 0.5 J | [40] | 3.1 J | [231] | 2.6 J | [194] | 0.3 J | 7 |
| Phenanthrene | 120 | --- | 14 | [280] | 6.9 | [515] | 45 | [3358] | 80 | [5970] | 2.4 | 48 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 15 | 300 | 20 | [1493] | 47 | [3507] | 54 | [4030] | 6.0 | 120 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 63800 e BJ | --- | 13400 BJ | --- | 13400 e BJ | --- | 13400 e BJ | --- | 62900 e BJ | --- |
| % TOC | NA | --- | 6.4 e BJ | --- | 1.3 BJ | --- | 1.3 e BJ | --- | 1.3 e BJ | --- | 6.3 e BJ | --- |
| Percent solids (%) | NA | --- | 65 | --- | 64 | --- | 61 | --- | 73 | --- | 59 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [106 ] | --- | [114 ] | --- | [308 ] | --- | [370 ] | --- | [24 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 43 | --- | 54 | --- | 115 | --- | 115 | --- | 7.2 | --- |
| Total SVOCs | NS | --- | 107 | --- | 114 | --- | 310 | --- | 373 | --- | 27 | --- |
| BaP Equivalents | 1.3 (H) | NS | 12 | [240] | 14 | [1045] | 30 | [2239] | 30 | [2239] | 0.4 | [8] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection, L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations, (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values | Ecological Screening Values | WP-29A 05/14/2003 6 - 12 in. | | WP-29A DUP 05/14/2003 6 - 12 in. | | WP-29A 05/14/2003 12 - 17 in. | | WP-29 05/09/2001 0 - 6 in. | | WP-29 05/09/2001 6 - 12 in. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/g OC | mg/kg | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | 1.9 J | 30 | 2.7 J | [39] | --- | --- | --- | --- | 1.1 J | [150] |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | 6.6 | 105 | 12 J | 171 | 9.6 J | 192 | 11 J | 507 | 9.1 | 1241 |
| Acenaphthylene | NS | --- | 0.8 J | 13 | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | 14 | [223] | 32 | [456] | 29 | [580] | 6.0 J | [276] | 15 | [2046] |
| Benzo(a)anthracene | 12 | --- | 19 | [302] | 33 | [471] | 30 | [600] | 20 J | [922] | 13 | [1774] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {16 } | [254] | {27 } | [385] | {23 } | [460] | {17 J} | [783] | {9.3 } | [1269] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | {20 } | [318] | {29 } | [414] | {28 } | [560] | {19 J} | [876] | {11 } | [1501] |
| Benzo(ghi)perylene | NS | 3.8 (1) | {4.2 J} | 67 | {9.5 J} | 136 | {7.2 J} | 144 | {6.2 J} | 286 | 2.6 J | 355 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | {8.1 } | [129] | {13 J} | [185] | {8.0 J} | [160] | {6.5 J} | [300] | 3.7 J | [505] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | 5.2 J | 240 | --- | --- |
| Chrysene | 1.3 (H) | --- | 18 | [286] | 31 | [442] | 25 | [500] | 18 J | [829] | 11 | [1501] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 1.9 J | [30] | 3.8 J | [54] | 3.1 J | [62] | 2.3 J | [106] | 1.7 J | [232] |
| Dibenzofuran | NS | 5.1 (2) | 2.9 J | 46 | {6.0 J} | 86 | 3.7 J | 74 | 2.3 J | 106 | {5.4 J} | 737 |
| Fluoranthene | 1020 | --- | 45 | 715 | 71 | 1013 | 72 | [1440] | 43 J | [1982] | 34 | [4638] |
| Fluorene | 8 | --- | 6.2 J | [99] | 14 J | [200] | 11 J | [220] | 6.2 J | [286] | 8.9 J | [1214] |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 5.3 J | [84] | 10 J | [143] | 9.0 J | [180] | 6.9 J | [318] | 4.7 J | [641] |
| Naphthalene | 30 | --- | 5.5 J | [87] | 6.8 J | [97] | 2.6 J | [52] | 3.1 J | [143] | 2.1 J | [286] |
| Phenanthrene | 120 | --- | 44 | [700] | 86 | [1227] | 87 | [1740] | 14 J | [645] | 42 | [5730] |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 36 | 572 | 64 | 913 | 59 | [1180] | 35 J | [1613] | 28 | [3820] |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 62900 BJ | --- | 70100 BJ | --- | 62900 e BJ | --- | 21700 | --- | 7330 | --- |
| % TOC | NA | --- | 6.3 BJ | --- | 7.0 BJ | --- | 6.3 e BJ | --- | 2.2 | --- | 0.7 | --- |
| Percent solids (%) | NA | --- | 53 | --- | 55 | --- | 60 | --- | 56 | --- | 62 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [253 ] | --- | [445 ] | --- | [404 ] | --- | [214 ] | --- | [197 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 88 | --- | 147 | --- | 126 | --- | 89 | --- | 54 | --- |
| Total SVOCs | NS | --- | 255 | --- | 451 | --- | 407 | --- | 221 | --- | 203 | --- |
| BaP Equivalents | 1.3 (H) | NS | 23 | [366] | 38 | [542] | 33 | [660] | 24 | [1106] | 14 | [1910] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values | Ecological Screening Values | WP-29 05/09/2001 12 - 18 in. | | WP-CKOUT 05/14/2003 0 - 6 in. | | WP-OD3 05/14/2003 0 - 6 in. | | WP-OD3 05/14/2003 6 - 12 in. | | WP-PL 05/08/2001 0 - 6 in. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/g OC | mg/kg | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | 0.1 J | 4 | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | 0.2 J | 7 | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | 0.07 J | 2 | --- | --- |
| Acenaphthene | NS | --- | 46 J | 438 | --- | --- | 0.1 J | 4 | 0.3 J | 10 | 0.2 J | 1 |
| Acenaphthylene | NS | --- | --- | --- | 0.06 J | 2 | 0.3 J | 10 | 0.8 | 26 | 0.3 J | 2 |
| Anthracene | 107 | --- | 86 | [819] | 0.2 J | 4 | 1.3 | 43 | 3.6 | [118] | 1.2 J | 10 |
| Benzo(a)anthracene | 12 | --- | 84 | [800] | 0.9 | [26] | 4.6 DJ | [151] | 11 D | [361] | 4.6 J | [40] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {64 } | [610] | {0.9 } | [26] | {4.0 DJ} | [131] | {9.1 DJ} | [298] | {4.5 J} | [39] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | {74 } | [705] | 1.4 | [39] | {5.3 DJ} | [174] | {11 DJ} | [361] | {5.9 J} | [51] |
| Benzo(ghi)perylene | NS | 3.8 (1) | {15 J} | 143 | 0.3 J | 7 | 0.9 J | 31 | 1.9 J | 62 | 1.5 J | 13 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | {32 J} | [305] | 0.6 | [17] | 2.2 J | [72] | 3.5 J | [115] | 2.3 J | [20] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | 0.1 J | 5 | --- | --- |
| Chrysene | 1.3 (H) | --- | 77 | [733] | 0.8 | [21] | 2.8 | [92] | 10 D | [328] | 4.5 J | [39] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 9.8 J | [93] | 0.1 J | 3 | 0.3 J | 11 | 0.8 J | [27] | 0.8 J | 7 |
| Dibenzofuran | NS | 5.1 (2) | {30 J} | 286 | --- | --- | 0.07 J | 2 | 0.2 J | 8 | 0.1 J | 1 |
| Fluoranthene | 1020 | --- | 180 | [1714] | 2.0 | 56 | 7.3 D | 239 | 17 D | 557 | 5.7 J | 50 |
| Fluorene | 8 | --- | 46 J | [438] | --- | --- | 0.2 J | 6 | 0.5 J | [15] | 0.2 J | 2 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 28 J | [267] | 0.3 J | [9] | 1.1 J | [36] | 2.2 J | [72] | 2.7 J | [23] |
| Naphthalene | 30 | --- | --- | --- | 0.07 J | 2 | 0.1 J | 5 | 0.8 | 25 | 0.3 J | 2 |
| Phenanthrene | 120 | --- | 210 | [2000] | 0.4 J | 10 | 3.3 | 108 | 7.1 DJ | [233] | 2.2 J | 19 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | 0.08 J | [3] | --- | --- |
| Pyrene | 961 | --- | 140 | [1333] | 1.6 | 45 | 8.2 D | 269 | 20 D | 656 | 8.4 J | 73 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.7 J | 6 |
| Total organic carbon (mg/Kg) | NA | --- | 105000 | --- | 35900 | --- | 30500 e | --- | 30500 | --- | 115000 | --- |
| % TOC | NA | --- | 11 | --- | 3.6 | --- | 3.1 e | --- | 3.1 | --- | 12 | --- |
| Percent solids (%) | NA | --- | 58 | --- | 70 | --- | 72 | --- | 68 | --- | 26 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [1092 ] | --- | [9.5 ] | --- | [13 ] | --- | [14 ] | --- | [45 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 369 | --- | 5.0 | --- | 6.4 | --- | 6.5 | --- | 25 | --- |
| Total SVOCs | NS | --- | 1122 | --- | 9.5 | --- | 13 | --- | 15 | --- | 46 | --- |
| BaP Equivalents | 1.3 (H) | NS | 93 | [886] | 1.3 | [36] | 0.5 | [16] | 1.1 | [36] | 6.7 | [58] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%, when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-PL DUP 05/08/2001 0 - 6 in. C mg/Kg | SC ug/gOC | WP-PL 05/08/2001 6 - 11 in. C mg/Kg | SC ug/gOC | WP-PL1 05/13/2003 0 - 6 in. C mg/Kg | SC ug/gOC | WP-PL1 05/13/2003 6 - 12 in. C mg/Kg | SC ug/gOC | WP-PL1 05/13/2003 12 - 18 in. C mg/Kg | SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | 0.1 J | 1 | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.1 J | 1 | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | 0.2 J | 1 | 0.1 J | 1 | 0.1 J | 1 | --- | --- | --- | --- |
| Anthracene | 107 | --- | 0.6 J | 5 | 0.8 J | 9 | 0.5 J | 5 | --- | --- | --- | --- |
| Benzo(a)anthracene | 12 | --- | 3.2 J | [28] | 2.6 J | [32] | 2.2 J | [20] | 0.3 J | 3 | --- | --- |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {3.2 J} | [28] | {2.5 J} | [30] | {1.1 J} | [10] | 0.3 J | [3] | --- | --- |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | {4.6 J} | [40] | 4.0 J | [49] | 2.4 J | [22] | 0.4 J | [5] | --- | --- |
| Benzo(ghi)perylene | NS | 3.8 (1) | 1.1 J | 10 | 1.2 J | 15 | 0.5 J | 5 | 0.08 J | 1 | --- | --- |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 1.5 J | [13] | 1.0 J | [12] | 1.2 J | [11] | 0.2 J | [2] | --- | --- |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 2.9 J | [25] | 2.7 J | [33] | 2.1 J | [19] | 0.3 J | [4] | --- | --- |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 0.7 J | 6 | 0.6 J | 7 | 0.3 J | 2 | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.3 J | 3 | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 3.6 J | 31 | 4.2 J | 51 | 4.0 J | 37 | 0.6 J | 7 | --- | --- |
| Fluorene | 8 | --- | 0.2 J | 1 | 0.3 J | 3 | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 2.0 J | [17] | 1.8 J | [22] | 0.7 J | [6] | 0.1 J | 1 | --- | --- |
| Naphthalene | 30 | --- | 0.2 J | 2 | 0.3 J | 4 | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 1.2 J | 10 | 1.1 J | 13 | 1.2 J | 11 | 0.1 J | 1 | --- | --- |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 5.9 J | 51 | 5.6 J | 68 | 3.5 J | 32 | 0.6 J | 7 | --- | --- |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 0.8 J | 7 | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 115000 | --- | 82300 | --- | 108000 J | --- | 80500 J | --- | 51700 | --- |
| % TOC | NA | --- | 12 | --- | 8.2 | --- | 11 J | --- | 8.1 J | --- | 5.2 | --- |
| Percent solids (%) | NA | --- | 25 | --- | 40 | --- | 29 | --- | 43 | --- | 56 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [31] | --- | [29] | --- | [20] | --- | 2.8 | --- | --- | --- |
| Total Carcinogenic PAHs | NS | NS | 18 | --- | 15 | --- | 9.9 | --- | 1.5 | --- | --- | --- |
| Total SVOCs | NS | --- | 32 | --- | 29 | --- | 20 | --- | 2.8 | --- | --- | --- |
| BaP Equivalents | 1.3 (H) | NS | 5.0 | [43] | 4.0 | [49] | 1.9 | [18] | 0.3 | [4] | --- | --- |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values | Ecological Screening Values | WP-PL2 05/13/2003 0 - 6 in. | | WP-PL2 05/13/2003 6 - 12 in. | | WP-PL2 05/13/2003 12 - 24 in. | | WP-PL3 05/13/2003 0 - 6 in. | | WP-PL3 05/13/2003 6 - 12 in. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/g OC | mg/kg | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | 0.2 J | 3 | 0.1 J | 2 | --- | --- | --- | --- | 0.1 J | 1 |
| Anthracene | 107 | --- | 0.7 J | 12 | 0.3 J | 5 | 0.2 J | 2 | 0.2 J | 2 | 0.2 J | 2 |
| Benzo(a)anthracene | 12 | --- | 2.6 J | [44] | 1.5 J | [23] | 0.9 J | 12 | 0.8 J | 8 | 1.1 J | 9 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {1.2 J} | [20] | {0.8 J} | [13] | {0.8 J} | [11] | {0.5 J} | [6] | {1.0 J} | [8] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 3.6 J | [61] | 2.2 J | [34] | 1.1 J | [14] | 0.9 J | [9] | 1.8 J | [15] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.7 J | 12 | 0.5 J | 8 | 0.3 J | 4 | 0.2 J | 2 | 0.5 J | 4 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 1.1 J | [19] | 0.8 J | [12] | 0.5 J | [7] | 0.4 J | [5] | 0.6 J | [5] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | 0.1 J | 0.9 |
| Chrysene | 1.3 (H) | --- | 2.1 J | [36] | 1.4 J | [22] | 0.9 J | [11] | 0.8 J | [8] | 1.3 J | [11] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | 0.2 J | 2 | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 0.3 J | 5 | 0.2 J | 3 | 0.1 J | 2 | --- | --- | 0.2 J | 1 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | --- | --- | 0.1 J | 0.9 |
| Fluoranthene | 1020 | --- | 4.5 J | 77 | 2.2 J | 34 | 1.5 J | 19 | 1.4 J | 15 | 2.5 J | 21 |
| Fluorene | 8 | --- | 0.2 J | 3 | --- | --- | --- | --- | --- | --- | 0.1 J | 1 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.9 J | [14] | 0.6 J | [9] | 0.4 J | [5] | 0.2 J | [2] | 0.5 J | [4] |
| Naphthalene | 30 | --- | --- | --- | --- | --- | 0.1 J | 1 | --- | --- | 0.2 J | 2 |
| Phenanthrene | 120 | --- | 1.5 J | 26 | 0.8 J | 12 | 0.4 J | 5 | 0.5 J | 6 | 1.2 J | 10 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 4.3 J | 73 | 2.4 J | 37 | 1.6 J | 21 | 1.2 J | 13 | 2.3 J | 19 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 58700 BJ | --- | 64200 BJ | --- | 77000 BJ | --- | 93900 BJ | --- | 118000 BJ | --- |
| % TOC | NA | --- | 5.9 BJ | --- | 6.4 BJ | --- | 7.7 BJ | --- | 9.4 BJ | --- | 12 BJ | --- |
| Percent solids (%) | NA | --- | 26 | --- | 34 | --- | 43 | --- | 24 | --- | 35 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [24 ] | --- | [14 ] | --- | [8.8 ] | --- | [7.1 ] | --- | [14 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 12 | --- | 7.5 | --- | 4.7 | --- | 3.6 | --- | 6.4 | --- |
| Total SVOCs | NS | --- | 24 | --- | 14 | --- | 8.8 | --- | 7.3 | --- | 14 | --- |
| BaP Equivalents | 1.3 (H) | NS | 2.2 | [37] | 1.5 | [23] | 1.2 | [16] | 0.7 | [7] | 1.5 | [13] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T1A 05/14/2003 0 - 6 in. C mg/Kg | WP-T1A 05/14/2003 0 - 6 in. SC ug/gOC | WP-T1A 05/14/2003 6 - 12 in. C mg/Kg | WP-T1A 05/14/2003 6 - 12 in. SC ug/gOC | WP-T1A 05/14/2003 12 - 24 in. C mg/Kg | WP-T1A 05/14/2003 12 - 24 in. SC ug/gOC | WP-T1C 05/14/2003 0 - 6 in. C mg/Kg | WP-T1C 05/14/2003 0 - 6 in. SC ug/gOC | WP-T1C 05/14/2003 6 - 10 in. C mg/Kg | WP-T1C 05/14/2003 6 - 10 in. SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | 0.09 J | 2 | 0.1 J | 1 | 0.09 J | 3 | 0.3 J | 9 |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | 0.09 J | 2 | 0.07 J | 0.8 | 0.06 J | 2 | 0.1 J | 4 |
| Acenaphthene | NS | --- | --- | --- | 0.7 J | 14 | 0.8 | 9 | 0.1 J | 4 | 0.3 J | 11 |
| Acenaphthylene | NS | --- | --- | --- | 0.6 J | 12 | 0.3 J | 4 | 0.09 J | 3 | 0.2 J | 5 |
| Anthracene | 107 | --- | 0.2 J | 4 | 3.3 J | 66 | 3.2 DJ | 37 | 0.9 | 29 | 2.4 | 77 |
| Benzo(a)anthracene | 12 | --- | 0.7 J | [14] | 8.6 DJ | [172] | 6.8 DJ | [80] | 2.2 | [71] | 4.6 D | [148] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.3 J | [6] | {8.8 DJ} | [176] | {5.8 DJ} | [68] | {2.1 DJ} | [68] | {3.9 DJ} | [125] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.4 J | [8] | {11 DJ} | [220] | {7.0 DJ} | [82] | 3.1 DJ | [100] | {5.3 DJ} | [170] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.1 J | 3 | 2.1 J | 42 | 1.9 DJ | 22 | 0.7 DJ | 23 | 1.2 DJ | 39 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.2 J | [5] | {4.7 J} | [94] | 3.4 DJ | [40] | 0.9 DJ | [28] | 1.9 DJ | [61] |
| Carbazole | NS | NS | --- | --- | 0.1 J | 2 | 0.08 J | 1 | --- | --- | 0.09 J | 3 |
| Chrysene | 1.3 (H) | --- | 1.0 J | [19] | 4.6 J | [92] | 6.6 DJ | [77] | 1.6 | [51] | 2.9 | [93] |
| Di-n-butyl phthalate | NS | --- | --- | --- | 0.1 J | 3 | 0.1 J | 1 | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | 0.8 J | [16] | 0.9 DJ | 11 | 0.3 DJ | 11 | 0.6 DJ | [20] |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.2 J | 4 | 0.3 J | 3 | 0.1 J | 5 | 0.4 J | 12 |
| Fluoranthene | 1020 | --- | 1.2 J | 24 | 15 DJ | 300 | 12 DJ | 141 | 3.9 D | 125 | 8.2 D | 264 |
| Fluorene | 8 | --- | --- | --- | 0.5 J | [11] | 0.6 | 7 | 0.2 J | 6 | 0.5 J | [17] |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.1 J | [3] | 2.3 J | [46] | 2.2 DJ | [26] | 0.8 DJ | [26] | 1.4 DJ | [45] |
| Naphthalene | 30 | --- | --- | --- | 0.4 J | 8 | 0.5 J | 6 | 0.8 | 25 | 0.9 | 30 |
| Phenanthrene | 120 | --- | 0.4 J | 7 | 6.1 DJ | [122] | 5.6 DJ | 66 | 2.2 | 71 | 4.8 D | [154] |
| Phenol | 0.5 (t) | --- | --- | --- | 0.09 J | [2] | 0.09 J | [1] | 0.05 J | [2] | 0.08 J | [2] |
| Pyrene | 961 | --- | 1.3 J | 26 | 15 DJ | 300 | 13 DJ | 152 | 4.1 D | 132 | 8.8 D | 283 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 85400 e J | --- | 85400 e J | --- | 85400 J | --- | 31100 e | --- | 31100 | --- |
| % TOC | NA | --- | 8.5 e J | --- | 8.5 e J | --- | 8.5 J | --- | 3.1 e | --- | 3.1 | --- |
| Percent solids (%) | NA | --- | 34 | --- | 43 | --- | 59 | --- | 70 | --- | 63 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [5.9] | --- | [20] | --- | 2.2 | --- | [8.2] | --- | [7.5] | --- |
| Total Carcinogenic PAHs | NS | NS | 2.7 | --- | 12 | --- | 33 | --- | 3.8 | --- | 2.9 | --- |
| Total SVOCs | NS | --- | 5.9 | --- | 21 | --- | 2.8 | --- | 8.4 | --- | 8.1 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.5 | [10] | 1.1 | [22] | 8.4 | [98] | 0.2 | [6] | 0.03 | 1 |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-OD2 05/14/2003 0 - 6 in. C mg/Kg | WP-OD2 05/14/2003 0 - 6 in. SC ug/gOC | WP-OD2 05/14/2003 6 - 12 in. C mg/Kg | WP-OD2 05/14/2003 6 - 12 in. SC ug/gOC | WP-OD2 05/14/2003 12 - 22 in. C mg/Kg | WP-OD2 05/14/2003 12 - 22 in. SC ug/gOC | WP-T2A 05/13/2003 0 - 6 in. C mg/Kg | WP-T2A 05/13/2003 0 - 6 in. SC ug/gOC | WP-T2A 05/13/2003 6 - 12 in. C mg/Kg | WP-T2A 05/13/2003 6 - 12 in. SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.2 J | 4 | 0.7 | 17 | --- | --- | 0.2 J | 5 |
| Acenaphthylene | NS | --- | --- | --- | 0.1 J | 3 | 0.2 J | 5 | --- | --- | 0.2 J | 5 |
| Anthracene | 107 | --- | 0.2 J | 5 | 0.3 J | 8 | 1.6 | 39 | 0.4 J | 7 | 0.7 | 23 |
| Benzo(a)anthracene | 12 | --- | 0.9 J | [22] | 1.6 J | [39] | 3.4 | [83] | 1.9 J | [38] | 3.4 | [108] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {0.5 J} | [12] | {1.2 J} | [29] | {3.0 DJ} | [73] | {0.9 J} | [18] | {2.8 } | [89] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.8 J | [20] | 1.8 J | [44] | 3.8 DJ | [92] | 2.6 J | [52] | 3.7 D | [118] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.2 J | 4 | 0.4 J | 9 | 1.0 DJ | 24 | 0.6 J | 12 | 0.9 | 30 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.5 J | [11] | 0.9 J | [23] | 1.6 DJ | [39] | 0.6 J | [11] | 1.0 | [31] |
| Carbazole | NS | NS | --- | --- | --- | --- | 0.06 J | 1 | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 1.2 J | [29] | 1.0 J | [23] | 2.3 | [56] | 1.4 J | [28] | 2.5 | [80] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | 0.3 J | 7 | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | 0.4 DJ | 11 | 0.2 J | 4 | 0.4 J | 11 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | 0.1 J | 2 | --- | --- | 0.07 J | 2 |
| Fluoranthene | 1020 | --- | 1.9 J | 46 | 3.0 J | 73 | 6.7 D | 163 | 2.6 J | 52 | 4.8 D | 153 |
| Fluorene | 8 | --- | --- | --- | --- | --- | 0.3 J | 7 | --- | --- | 0.2 J | 5 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.2 J | [5] | 0.4 J | [9] | 1.2 DJ | [29] | 0.6 J | [13] | 1.1 | [35] |
| Naphthalene | 30 | --- | --- | --- | 0.09 J | 2 | 0.1 J | 2 | --- | --- | 0.2 J | 5 |
| Phenanthrene | 120 | --- | 0.5 J | 12 | 0.6 J | 15 | 3.5 | 85 | 0.8 J | 15 | 1.3 | 41 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 1.5 J | 36 | 2.2 J | 54 | 7.5 D | 182 | 3.0 J | 60 | 5.3 D | 169 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 41100 e J | --- | 41100 e J | --- | 41100 J | --- | 49600 BJ | --- | 31400 B | --- |
| % TOC | NA | --- | 4.1 e J | --- | 4.1 e J | --- | 4.1 J | --- | 5.0 BJ | --- | 3.1 B | --- |
| Percent solids (%) | NA | --- | 30 | --- | 49 | --- | 63 | --- | 27 | --- | 63 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [8.3 ] | --- | [14 ] | --- | [12 ] | --- | [16 ] | --- | [15 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 4.1 | --- | 6.9 | --- | 5.7 | --- | 8.2 | --- | 11 | --- |
| Total SVOCs | NS | --- | 8.3 | --- | 14 | --- | 12 | --- | 16 | --- | 15 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.7 | [17] | 1.6 | [39] | 0.4 | [10] | 1.7 | [34] | 3.6 | [115] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg

# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Iucluding TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T2B 05/13/2003 0 - 6 in. C mg/Kg | WP-T2B 05/13/2003 0 - 6 in. SC ug/gOC | WP-T2B 05/13/2003 6 - 12 in. C mg/Kg | WP-T2B 05/13/2003 6 - 12 in. SC ug/gOC | WP-T2B 05/13/2003 12 - 24 in. C mg/Kg | WP-T2B 05/13/2003 12 - 24 in. SC ug/gOC | WP-T2C 05/13/2003 0 - 6 in. C mg/Kg | WP-T2C 05/13/2003 0 - 6 in. SC ug/gOC | WP-T2C 05/13/2003 6 - 12 in. C mg/Kg | WP-T2C 05/13/2003 6 - 12 in. SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | 0.1 J | 3 | 0.06 J | 2 | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | 0.1 J | 2 | 0.1 J | 4 | --- | --- | --- | --- | 0.8 J | 13 |
| Anthracene | 107 | --- | 0.6 J | 12 | 0.4 J | 14 | --- | --- | 6.0 J | [133] | 6.5 J | [110] |
| Benzo(a)anthracene | 12 | --- | 1.8 J | [37] | 1.2 | [45] | 0.1 J | 5 | 18 J | [400] | 13 | [220] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {1.6 J} | [33] | {0.9 J} | [34] | 0.09 J | [4] | {15 J} | [333] | {11 } | [186] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 2.2 J | [45] | 1.4 J | [53] | 0.1 J | [5] | {20 J} | [444] | {13 } | [220] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.5 J | 9 | 0.3 J | 11 | --- | --- | {5.8 J} | 129 | {4.4 J} | 75 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.8 J | [16] | 0.4 J | [14] | --- | --- | {6.0 J} | [133] | {4.3 J} | [73] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 1.6 J | [33] | 0.9 | [34] | 0.09 J | [5] | 15 J | [333] | 12 | [203] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 0.2 J | 4 | 0.1 J | 5 | --- | --- | 2.3 J | [51] | 1.8 J | [31] |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.05 J | 2 | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 2.4 J | 49 | 2.0 | 76 | 0.2 J | 8 | 30 J | 667 | 25 | 424 |
| Fluorene | 8 | --- | 0.1 J | 3 | 0.07 J | 3 | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.5 J | [11] | 0.4 J | [14] | --- | --- | 6.9 J | [153] | 4.9 J | [83] |
| Naphthalene | 30 | --- | --- | --- | 0.1 J | 4 | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 1.0 J | 20 | 0.7 | 27 | 0.09 J | 5 | 12 J | [267] | 8.4 | [142] |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 3.1 J | 63 | 2.3 | 87 | 0.2 J | 10 | 29 J | 644 | 20 | 339 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 49000 J | --- | 26400 J | --- | 19100 | --- | 45000 BJ | --- | 59000 B | --- |
| % TOC | NA | --- | 4.9 J | --- | 2.6 J | --- | 1.9 | --- | 4.5 BJ | --- | 5.9 B | --- |
| Percent solids (%) | NA | --- | 33 | --- | 75 | --- | 68 | --- | 33 | --- | 51 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [11 ] | --- | [7.8 ] | --- | 0.6 | --- | [166 ] | --- | [125 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 3.4 | --- | 2.1 | --- | 0.2 | --- | 83 | --- | 60 | --- |
| Total SVOCs | NS | --- | 11 | --- | 7.9 | --- | 0.6 | --- | 166 | --- | 125 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.2 | [4] | 0.1 | [4] | 0.01 | 0.5 | 22 | [489] | 16 | [271] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg

# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T2C 05/13/2003 12 - 24 in. C mg/Kg | WP-T2C SC ug/gOC | WP-OD1 05/13/2003 0 - 6 in. C mg/Kg | WP-OD1 SC ug/gOC | WP-OD1 05/13/2003 6 - 12 in. C mg/Kg | WP-OD1 SC ug/gOC | WP-OD1 05/13/2003 12 - 19 in. C mg/Kg | WP-OD1 SC ug/gOC | WP-T3A 05/13/2003 0 - 6 in. C mg/Kg | WP-T3A SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.2 J | 4 | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | 0.5 J | 9 | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | 3.0 J | 53 | 0.3 J | 5 | --- | --- | 0.1 J | 2 |
| Benzo(a)anthracene | 12 | --- | --- | --- | 10 DJ | [177] | 1.3 | [21] | --- | --- | 0.5 J | 9 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {0.5 } | [45] | {9.1 J} | [161] | {1.1 J} | [18] | --- | --- | {0.6 J} | [11] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | {11 DJ} | [195] | 1.5 J | [25] | --- | --- | 0.9 J | [16] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | 3.3 J | 58 | 0.5 J | 9 | --- | --- | 0.3 J | 5 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 3.1 J | [55] | 0.4 J | [7] | --- | --- | 0.3 J | [6] |
| Carbazole | NS | NS | --- | --- | 0.1 J | 2 | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | --- | --- | 6.8 J | [120] | 1.1 | [18] | --- | --- | 0.5 J | [9] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | 1.1 J | [19] | 0.2 J | 3 | --- | --- | 0.1 J | 2 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.2 J | 3 | --- | --- | --- | --- | 0.1 J | 2 |
| Fluoranthene | 1020 | --- | --- | --- | 16 DJ | 283 | 2.0 | 33 | --- | --- | --- | --- |
| Fluorene | 8 | --- | --- | --- | 0.4 J | 7 | 0.07 J | 1 | --- | --- | 0.8 J | 14 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | 3.8 J | [67] | 0.5 J | [9] | --- | --- | --- | --- |
| Naphthalene | 30 | --- | --- | --- | 0.3 J | 5 | --- | --- | --- | --- | 0.3 J | [5] |
| Phenanthrene | 120 | --- | --- | --- | 5.5 J | 97 | 0.4 J | 7 | --- | --- | --- | --- |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.3 J | 5 |
| Pyrene | 961 | --- | --- | --- | 15 DJ | 265 | 2.2 | 36 | --- | --- | --- | --- |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.8 J | 14 |
| | | | | | | | | | | | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 11000 B | --- | 56500 BJ | --- | 60700 B | --- | 37600 B | --- | 56400 J | --- |
| % TOC | NA | --- | 1.1 B | --- | 5.7 BJ | --- | 6.1 B | --- | 3.8 B | --- | 5.6 J | --- |
| Percent solids (%) | NA | --- | 70 | --- | 27 | --- | 51 | --- | 53 | --- | 30 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 0.5 | --- | [37 ] | --- | [12 ] | --- | --- | --- | [5.5 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 0.5 | --- | 24 | --- | 6.1 | --- | --- | --- | 3.3 | --- |
| Total SVOCs | NS | --- | 0.5 | --- | 37 | --- | 12 | --- | --- | --- | 5.7 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.5 | [45] | 11 | [195] | 1.6 | [26] | --- | --- | 0.9 | [16] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg

# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T3A DUP 05/13/2003 0 - 6 in. C mg/Kg | WP-T3A DUP SC ug/gOC | WP-T3A 05/13/2003 6 - 12 in. C mg/Kg | WP-T3A SC ug/gOC | WP-T3A 05/13/2003 12 - 24 in. C mg/Kg | WP-T3A SC ug/gOC | WP-T3B 05/13/2003 0 - 6 in. C mg/Kg | WP-T3B SC ug/gOC | WP-T3B 05/13/2003 6 - 12 in. C mg/Kg | WP-T3B SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | 0.07 J | 1 | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | 0.1 J | 2 | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | 0.2 J | 3 | --- | --- | --- | --- |
| Anthracene | 107 | --- | 0.2 J | 2 | 0.2 J | 3 | 1.6 | 36 | --- | --- | 0.09 J | 2 |
| Benzo(a)anthracene | 12 | --- | 0.6 J | 9 | 0.9 J | [15] | 2.3 | [52] | 0.4 J | 11 | 0.5 J | [13] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.4 J | [6] | {0.8 J} | [15] | {2.1 } | [48] | 0.3 J | [9] | {0.5 J} | [13] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 1.0 J | [14] | 1.1 J | [19] | 2.9 | [66] | 0.8 J | [19] | 0.7 J | [18] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.3 J | 4 | 0.3 J | 6 | 0.5 J | 11 | 0.3 J | 7 | 0.2 J | 5 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.3 J | [4] | 0.4 J | [7] | 1.0 | [21] | 0.2 J | [5] | 0.2 J | [6] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.5 J | [8] | 0.8 J | [13] | 2.4 | [54] | 0.5 J | [14] | 0.5 J | [13] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | 0.2 J | 2 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | 0.2 J | 3 | 0.2 J | 5 | --- | --- | 0.1 J | 3 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | 0.09 J | 2 | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 0.9 J | 13 | 1.1 J | 19 | 4.9 | 111 | 0.8 J | 19 | 0.8 J | 20 |
| Fluorene | 8 | --- | --- | --- | --- | --- | 0.2 J | 4 | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.3 J | [4] | 0.4 J | [7] | 0.6 | [14] | 0.3 J | [7] | 0.2 J | [6] |
| Naphthalene | 30 | --- | --- | --- | --- | --- | 0.2 J | 5 | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 0.4 J | 5 | 0.5 J | 8 | 2.0 | 45 | 0.3 J | 8 | 0.2 J | 4 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 1.0 J | 14 | 1.4 J | 24 | 4.0 | 90 | 0.8 J | 21 | 0.8 J | 22 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 69300 BJ | --- | 57700 J | --- | 44200 J | --- | 39600 BJ | --- | 38000 BJ | --- |
| % TOC | NA | --- | 6.9 BJ | --- | 5.8 J | --- | 4.4 J | --- | 4.0 BJ | --- | 3.8 BJ | --- |
| Percent solids (%) | NA | --- | 29 | --- | 36 | --- | 54 | --- | 29 | --- | 46 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 3.5 | --- | [8.0 ] | --- | [25 ] | --- | [4.7 ] | --- | [4.7 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 1.1 | --- | 4.5 | --- | 12 | --- | 2.5 | --- | 2.7 | --- |
| Total SVOCs | NS | --- | 3.5 | --- | 8.0 | --- | 25 | --- | 4.7 | --- | 4.7 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.07 | 1 | 1.2 | [21] | 2.9 | [66] | 0.5 | [13] | 0.7 | [18] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T3B 05/13/2003 12 - 24 in. C mg/Kg | WP-T3B SC ug/gOC | WP-T3C 05/13/2003 0 - 6 in. C mg/Kg | WP-T3C SC ug/gOC | WP-T3C 05/13/2003 6 - 11 in. C mg/Kg | WP-T3C SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | | | | |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | | | | |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | | | | |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | | | | |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | 0.09 J | 1 | | | | |
| Anthracene | 107 | --- | --- | --- | --- | --- | 0.2 J | 2 | | | | |
| Benzo(a)anthracene | 12 | --- | --- | --- | 0.3 J | 4 | 0.7 J | 10 | | | | |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | --- | --- | {0.5 J} | [6] | {0.7 J} | [10] | | | | |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 0.5 J | [7] | 1.0 J | [15] | | | | |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | 0.1 J | 2 | 0.2 J | 4 | | | | |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 0.2 J | [3] | 0.3 J | [5] | | | | |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | | | | |
| Chrysene | 1.3 (H) | --- | --- | --- | 0.4 J | [5] | 0.6 J | [10] | | | | |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | 0.1 J | 1 | | | | |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | | | | |
| Fluoranthene | 1020 | --- | --- | --- | 0.5 J | 7 | 1.0 J | 15 | | | | |
| Fluorene | 8 | --- | --- | --- | --- | --- | --- | --- | | | | |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | 0.1 J | [2] | 0.3 J | [4] | | | | |
| Naphthalene | 30 | --- | --- | --- | --- | --- | 0.1 J | 2 | | | | |
| Phenanthrene | 120 | --- | --- | --- | 0.2 J | 2 | 0.4 J | 6 | | | | |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | | | | |
| Pyrene | 961 | --- | --- | --- | 0.6 J | 8 | 1.2 J | 19 | | | | |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 19700 B | --- | 72000 J | --- | 63800 J | --- | | | | |
| % TOC | NA | --- | 2.0 B | --- | 7.2 J | --- | 6.4 J | --- | | | | |
| Percent solids (%) | NA | --- | 54 | --- | 31 | --- | 45 | --- | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | --- | --- | 3.2 | --- | [6.7] | --- | | | | |
| Total Carcinogenic PAHs | NS | NS | --- | --- | 1.9 | --- | 3.6 | --- | | | | |
| Total SVOCs | NS | --- | --- | --- | 3.2 | --- | 6.7 | --- | | | | |
| BaP Equivalents | 1.3 (H) | NS | --- | --- | 0.5 | [7] | 1.0 | [16] | | | | |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 4-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-LK1 | WP-LK2 | WP-LK3 | WP-LK4 | WP-LK5 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 |
| Sample Depth | | | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 19200 J | 14500 J | 14300 J | 16000 J | 17600 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | 4.9 BJ | 4 BJ | (6.3 BJ) | 4.7 BJ | 4.7 BJ |
| Barium | NS | NS | 120 BJ | 88 BJ | 92 BJ | 98 BJ | 100 BJ |
| Beryllium | NS | NS | 0.86 BJ | 0.67 BJ | 0.64 BJ | 0.7 BJ | 0.81 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | (1.3 BJ) | (1.4 BJ) | (0.8 BJ) | (0.93 BJ) | (1.2 BJ) |
| Calcium | NS | NS | 10200 J | 11900 J | 18800 J | 11600 J | 11100 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (27 J) | 26 J | 21 J | 22 J | 24 J |
| Cobalt | NS | NS | 14 BJ | 11 BJ | 8.8 BJ | 11 BJ | 13 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (51 J) | (90 J) | (90 J) | (83 J) | (64 J) |
| Iron | 4% (P) | 2% (P) | (3.3 J) | (3.2 J) | (2.7 J) | (3.0 J) | (3.3 J) |
| Lead | 110.0 (L) | 31.0 (P) | (66 J) | (187 J*) | (79 J) | (99 J) | (126 J*) |
| Magnesium | NS | NS | 8570 J | 6950 BJ | 8150 J | 7310 J | 8700 J |
| Manganese | 1100 (L) | 460 (P) | (707 J) | (579 J) | (551 J) | (1000 J) | (637 J) |
| Mercury | 1.3 (L) | 0.15 (L) | (0.31 J) | (0.57 J) | (0.29 J) | (0.33 J) | (0.3 J) |
| Nickel | 50 (L) | 16 (P) | (33 BJ) | (29 BJ) | (26 BJ) | (26 BJ) | (30 J) |
| Potassium | NS | NS | 1740 BJ | 1510 BJ | 1420 BJ | 1350 BJ | 1360 BJ |
| Selenium | NS | NS | --- | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 330 BJ | 386 BJ | 357 BJ | 212 BJ | 328 BJ |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 29 BJ | 38 BJ | 29 BJ | 22 BJ | 26 BJ |
| Zinc | 270 (L) | 120 (P/L) | (221 J) | (359 J*) | (224 J) | (228 J) | (230 J) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | --- | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 18 | 12 | 14 | 25 | 36 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 10 J | 9.2 J | 6.3 J | 4.2 J | 4.6 J |
| Total organic carbon (mg/Kg) | NS | NS | 102000 J | 91600 J | 63300 J | 42100 J | 46100 J |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-LK01-A | WP-LK01-A | WP-LK01-A | WP-LK01-B | WP-LK01-B |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 19 - 25 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 14500 J | 11400 J | 13700 J | 14200 J | 11700 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | (3.2 JN) | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | 4.6 J | (6.6 J) | 5 J | 5 J | 5.2 J |
| Barium | NS | NS | 94 J | 74 J | 82 J | 90 J | 73 J |
| Beryllium | NS | NS | 0.57 J | 0.53 J | 0.62 J | 0.53 J | 0.42 J |
| Cadmium | 9.0 (P) | 0.6 (P) | --- | 0.16 J | 0.34 J | --- | --- |
| Calcium | NS | NS | 7600 J | 6330 J | 9540 J | 7030 J | 5980 J |
| Chromium** | 110.0 (P) | 26.0 (P) | 18 J | 15 J | 17 J | 18 J | 15 J |
| Cobalt | NS | NS | 8.6 J | 9.3 J | 9.2 J | 7.9 J | 6.5 J |
| Copper | 110.0 (P) | 16.0 (P) | (37 J) | (31 J) | (38 J) | (34 J) | (30 J) |
| Iron | 4% (P) | 2% (P) | (3.0 J) | (2.4 J) | (2.9 J) | (2.7 J) | (2.4 J) |
| Lead | 110.0 (L) | 31.0 (P) | (49 J) | (42 J) | (62 J) | (46 J) | (41 J) |
| Magnesium | NS | NS | 7130 J | 5540 J | 6390 J | 6850 J | 5720 J |
| Manganese | 1100 (L) | 460 (P) | (594 J) | (566 J) | (636 J) | 460 J | (541 J) |
| Mercury | 1.3 (L) | 0.15 (L) | --- | --- | (0.2 J) | --- | --- |
| Nickel | 50 (L) | 16 (P) | (25 J) | (22 J) | (23 J) | (24 J) | (22 J) |
| Potassium | NS | NS | 1090 J | 852 J | 932 J | 1110 J | 888 J |
| Selenium | NS | NS | 2.5 J | 1.2 J | 1.4 J | --- | 1.7 J |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 124 J | 82 J | 67 J | 145 J | 112 J |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 20 J | 19 J | 18 J | 19 J | 20 J |
| Zinc | 270 (L) | 120 (P/L) | (204 J) | (136 J) | (145 J) | (168 J) | (141 J) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | --- | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 22 | 35 | 46 | 25 | 32 |
| pH | NA | NA | 7.3 | 7.5 | 7.9 | 7.6 | 7.7 |
| % TOC | NS | NS | 10 | 4.7 | 3.4 | 6.7 | 6.2 |
| Total organic carbon (mg/Kg) | NS | NS | 99100 | 47000 | 33800 | 66800 | 62000 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-LK01-B DUP | WP-LK01-B | WP-LK01-C | WP-LK01-C | WP-LK01-C |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 |
| Sample Depth | | | 6 - 12 in. | 25 - 31 in. | 0 - 6 in. | 6 - 12 in. | 26 - 32 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 13300 J | 13100 J | 14600 J | 13200 J | 12900 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | 4.3 J | 4.9 J | 4.1 J | 4.8 J | 4.3 J |
| Barium | NS | NS | 83 J | 80 J | 90 J | 81 J | 78 J |
| Beryllium | NS | NS | 0.53 J | 0.55 J | 0.57 J | 0.55 J | 0.53 J |
| Cadmium | 9.0 (P) | 0.6 (P) | --- | 0.36 J | --- | 0.2 J | 0.31 J |
| Calcium | NS | NS | 6640 J | 5350 J | 7240 J | 6750 J | 9730 J |
| Chromium** | 110.0 (P) | 26.0 (P) | 17 J | 17 J | 18 J | 17 J | 16 J |
| Cobalt | NS | NS | 7.6 J | 8.9 J | 8.3 J | 8.5 J | 8.5 J |
| Copper | 110.0 (P) | 16.0 (P) | (34 J) | (37 J) | (37 J) | (34 J) | (36 J) |
| Iron | 4% (P) | 2% (P) | (2.7 J) | (2.8 J) | (2.9 J) | (2.7 J) | (2.8 J) |
| Lead | 110.0 (L) | 31.0 (P) | (46 J) | (59 J) | (47 J) | (44 J) | (59 J) |
| Magnesium | NS | NS | 6440 J | 5800 J | 6990 J | 6410 J | 6190 J |
| Manganese | 1100 (L) | 460 (P) | (640 J) | (616 J) | (569 J) | (613 J) | (666 J) |
| Mercury | 1.3 (L) | 0.15 (L) | --- | (0.21 J) | --- | --- | --- |
| Nickel | 50 (L) | 16 (P) | (24 J) | (22 J) | (24 J) | (24 J) | (22 J) |
| Potassium | NS | NS | 956 J | 888 J | 1140 J | 996 J | 890 J |
| Selenium | NS | NS | 2.1 J | 1.6 J | --- | 2 J | 1.5 J |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 108 J | 62 J | 148 J | 97 J | 68 J |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 22 J | 18 J | 19 J | 22 J | 18 J |
| Zinc | 270 (L) | 120 (P/L) | (162 J) | (136 J) | (162 J) | (135 J) | (132 J) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | (3.2 J) | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 34 | 48 | 29 | 36 | 50 |
| pH | NA | NA | 7.7 | 8.1 | 7.5 | 7.8 | 7.6 |
| % TOC | NS | NS | 5.5 | 5.5 | 5.9 | 5.6 | 3.9 |
| Total organic carbon (mg/Kg) | NS | NS | 55200 | 54700 | 58700 | 55500 | 38800 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-01-A | WP-04.45-9 | WP-09A | WP-11A | LG-OUT |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 |
| Sample Depth | | | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 10000 | 10700 | 7850 | 4650 | 7350 |
| Antimony | 25.0 (L) | 2.0 (L) | 0.52 JN | 1.2 JN | 0.51 JN | 0.63 JN | (2.3 JN) |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.5 ) | (8.9 ) | (19 ) | (10 ) | (9.9 ) |
| Barium | NS | NS | 54 | 79 | 61 | 28 J | 80 |
| Beryllium | NS | NS | 0.45 J | 0.43 J | 0.45 J | 0.27 J | 0.36 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (1 J) | (1.3 J) | 0.34 J | 0.54 J | (2.4 ) |
| Calcium | NS | NS | 24900 | 4140 | 6120 | 1460 | 10800 |
| Chromium** | 110.0 (P) | 26.0 (P) | 19 | 26 | 25 J | 26 J | (29 ) |
| Cobalt | NS | NS | 7.6 J | 7.9 J | 7.9 J | 5.3 J | 6.5 J |
| Copper | 110.0 (P) | 16.0 (P) | (48 ) | (91 ) | (41 ) | (172 *) | (88 ) |
| Iron | 4% (P) | 2% (P) | (3.4 ) | (4.3 *) | (2.8 ) | 1.4 | (3.1 ) |
| Lead | 110.0 (L) | 31.0 (P) | (94 ) | (152 *) | (73 ) | (225 *) | (235 *) |
| Magnesium | NS | NS | 18900 | 7180 | 4480 | 1960 | 6490 |
| Manganese | 1100 (L) | 460 (P) | (912 J) | (1790 J*) | (902 JN) | 440 JN | (566 J) |
| Mercury | 1.3 (L) | 0.15 (L) | (0.51 ) | 0.15 J | (0.17 J) | (0.44 ) | (1.1 ) |
| Nickel | 50 (L) | 16 (P) | (22 ) | (26 ) | (17 ) | 13 | (34 ) |
| Potassium | NS | NS | 636 J | 709 J | 759 J | 297 J | 617 J |
| Selenium | NS | NS | 0.94 J | 1.9 | 1.5 | 1.2 J | 1.1 J |
| Silver | 2.2 (L) | 1.0 (L) | --- | 0.27 J | --- | --- | --- |
| Sodium | NS | NS | 69 J | 81 J | 99 J | 84 J | 90 J |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 14 | 18 | 24 | 10 J | 17 |
| Zinc | 270 (L) | 120 (P/L) | (163 ) | (210 ) | 78 | (196 ) | (285 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | --- | (1.1 ) | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 81 | 73 | 66 | 65 | 77 |
| pH | NA | NA | 8.2 | 8.1 | 8.1 | 8.4 | 8.3 |
| % TOC | NS | NS | 1.9 | 2.2 | 6.6 | 7.7 | 5.6 |
| Total organic carbon (mg/Kg) | NS | NS | 18600 | 22100 | 65500 | 76500 | 56000 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-LGOUT2 | WP-MW4 | WP-MW4 DUP | WP-16 | WP-18 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/09/2001 | 05/09/2001 |
| Sample Depth | | | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 10100 | 12000 | 12600 | 10800 | 9880 |
| Antimony | 25.0 (L) | 2.0 (L) | 0.9 BNJ | 0.87 BNJ | (25 NJ) | 0.87 JN | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.6 ) | (6.3 ) | (8.4 ) | (7 ) | 5 |
| Barium | NS | NS | 118 | 62 | 74 | 57 | 31 J |
| Beryllium | NS | NS | 0.45 B | 0.48 B | 0.52 B | 0.43 J | 0.48 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (1.7 ) | (1.2 B) | (1.2 B) | (1.9 ) | 0.2 J |
| Calcium | NS | NS | 13000 | 5390 | 9830 | 2130 | 2500 |
| Chromium** | 110.0 (P) | 26.0 (P) | 23 | 18 | 17 | 17 | 17 |
| Cobalt | NS | NS | 7.9 B | 8.4 B | 9.5 B | 7.3 J | 9 J |
| Copper | 110.0 (P) | 16.0 (P) | (63 ) | (53 ) | (62 ) | (61 ) | 16 |
| Iron | 4% (P) | 2% (P) | (3.4 ) | (3.6 ) | (4.1 *) | (3.3 ) | (2.7 ) |
| Lead | 110.0 (L) | 31.0 (P) | (141 *) | (130 *) | (1450 *) | (67 ) | 24 |
| Magnesium | NS | NS | 7210 | 7290 | 7330 | 6880 | 4830 |
| Manganese | 1100 (L) | 460 (P) | 345 | (541 ) | (579 ) | (489 J) | 293 J |
| Mercury | 1.3 (L) | 0.15 (L) | (0.34 ) | (0.16 ) | 0.14 | (0.17 J) | 0.15 J |
| Nickel | 50 (L) | 16 (P) | (56 *) | (25 ) | (26 ) | (23 ) | (21 ) |
| Potassium | NS | NS | 861 B | 817 B | 710 B | 748 J | 1180 J |
| Selenium | NS | NS | --- | --- | --- | 1 J | 1 J |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 99 B | 83 B | 74 B | 51 J | 88 J |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 20 | 17 | 18 | 16 | 16 |
| Zinc | 270 (L) | 120 (P/L) | (262 ) | (231 ) | (246 ) | (309 *) | 74 |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (0.33 BJN) | (0.34 BJN) | (0.35 BJN) | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 75 | 81 | 79 | 79 | 68 |
| pH | NA | NA | --- | --- | --- | 8.2 | 7.5 |
| % TOC | NS | NS | 1.2 J | 2.5 | 1.2 | 0.9 | 2.3 |
| Total organic carbon (mg/Kg) | NS | NS | 12400 J | 25400 | 12100 | 8770 | 23400 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-18 | WP-M2 | WP-M2 | WP-M2 | WP-M3 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/09/2001 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | | | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 17 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 10100 | 15400 J | 10600 | 10900 | 9500 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | 1.7 BNJ | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | 5.6 | (6.6 BJ*) | (15 J) | (14 J) | 5.5 J* |
| Barium | NS | NS | 34 J | 93 BJ | 46 B | 37 B | 53 BJ |
| Beryllium | NS | NS | 0.47 J | 0.77 BJ | 0.45 B | 0.45 B | 0.5 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | 0.098 J | (1.8 BJ) | (2.6 ) | (1.2 B) | (1.4 BJ) |
| Calcium | NS | NS | 2900 | 9540 J | 2350 | 1170 B | 17000 J |
| Chromium** | 110.0 (P) | 26.0 (P) | 16 | (34 J) | (482 *) | (465 *) | (27 J) |
| Cobalt | NS | NS | 9 J | 14 BJ | 10 B | 9.4 B | 10 BJ |
| Copper | 110.0 (P) | 16.0 (P) | 16 | (58 J) | (71 ) | (51 ) | (77 J) |
| Iron | 4% (P) | 2% (P) | (2.7 ) | (3.6 J) | (2.6 ) | (2.8 ) | (2.3 J) |
| Lead | 110.0 (L) | 31.0 (P) | 20 | (129 J*) | (210 *) | (174 *) | (182 J*) |
| Magnesium | NS | NS | 4960 | 8490 J | 5830 | 5670 | 11400 J |
| Manganese | 1100 (L) | 460 (P) | 244 J | (874 J) | 324 | 285 | (527 J) |
| Mercury | 1.3 (L) | 0.15 (L) | (0.44 J) | (0.83 J) | (34 *) | (68 *) | (0.73 J) |
| Nickel | 50 (L) | 16 (P) | (20 ) | (32 J) | (24 ) | (22 ) | (24 J) |
| Potassium | NS | NS | 1140 J | 1150 BJ | 766 B | 647 B | 821 BJ |
| Selenium | NS | NS | 0.94 J | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 79 J | 159 BJ | --- | --- | 138 BJ |
| Thallium | NS | NS | --- | --- | 1.1 B | 0.85 B | --- |
| Vanadium | NS | NS | 16 | 24 BJ | 18 | 13 | 22 BJ |
| Zinc | 270 (L) | 120 (P/L) | 69 | (325 J*) | (396 *) | (195 ) | (294 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | (1.3 BJN) | (5.1 JN) | (1.7 JN) | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 64 | 28 | 66 | 79 | 39 |
| pH | NA | NA | 7.4 | --- | --- | --- | --- |
| % TOC | NS | NS | 2.4 | 1.1 e BJ | 1.1 e BJ | 1.1 BJ | 6.4 BJ |
| Total organic carbon (mg/Kg) | NS | NS | 24400 | 11300 e BJ | 11300 e BJ | 11300 BJ | 63800 BJ |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-M3 | WP-DOT | WP-DOT | WP-DOT | WP-29A |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | | | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 10900 | 14400 | 12400 | 11700 | 9600 |
| Antimony | 25.0 (L) | 2.0 (L) | (92 NJ*) | (5.4 BNJ) | (27 NJ*) | --- | (13 BNJ) |
| Arsenic | 33.0 (P) | 6.0 (P) | (33 J) | (9.5 J) | (103 J*) | (35 J*) | 5.7 J |
| Barium | NS | NS | 63 | 33 B | 68 | 54 B | 80 |
| Beryllium | NS | NS | 0.6 B | 0.53 B | 0.61 B | 0.5 B | 0.43 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (23 *) | (4.2 ) | (53 *) | (7.4 ) | (3.6 ) |
| Calcium | NS | NS | 13100 | 3820 | 4810 | 2290 | 4220 |
| Chromium** | 110.0 (P) | 26.0 (P) | (280 *) | (50 ) | (2270 *) | (2130 *) | (55 ) |
| Cobalt | NS | NS | 11 B | 13 B | 9.7 B | 9.9 B | 12 B |
| Copper | 110.0 (P) | 16.0 (P) | (187 *) | (44 ) | (426 *) | (214 *) | (56 ) |
| Iron | 4% (P) | 2% (P) | (2.5 ) | (3.6 ) | (2.7 ) | (2.7 ) | (2.2 ) |
| Lead | 110.0 (L) | 31.0 (P) | (399 *) | (113 *) | (803 *) | (452 *) | (106 ) |
| Magnesium | NS | NS | 9670 | 8960 | 7060 | 5950 | 5970 |
| Manganese | 1100 (L) | 460 (P) | 418 | 339 | 320 | 229 | 272 |
| Mercury | 1.3 (L) | 0.15 (L) | (27 *) | (0.86 ) | (186 *) | (88 *) | (4.6 *) |
| Nickel | 50 (L) | 16 (P) | (23 ) | (33 ) | (22 ) | (22 ) | (27 ) |
| Potassium | NS | NS | 1000 B | 724 B | 937 B | 844 B | 705 B |
| Selenium | NS | NS | 1.2 B | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | --- | --- | --- | --- | --- |
| Thallium | NS | NS | --- | 1 B | 1.2 B | --- | 1.2 B |
| Vanadium | NS | NS | 16 | 18 | 16 B | 15 | 15 B |
| Zinc | 270 (L) | 120 (P/L) | (1780 *) | (732 *) | (4650 *) | (1210 *) | (466 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (16 JN) | (0.52 BJN) | (26 JN) | (2.7 JN) | (0.32 BJN) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 65 | 64 | 61 | 73 | 59 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 6.4 e BJ | 1.3 BJ | 1.3 e BJ | 1.3 e BJ | 6.3 e BJ |
| Total organic carbon (mg/Kg) | NS | NS | 63800 e BJ | 13400 BJ | 13400 e BJ | 13400 e BJ | 62900 e BJ |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-29A | WP-29A DUP | WP-29A | WP-29 | WP-29 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/09/2001 | 05/09/2001 |
| Sample Depth | | | 6 - 12 in. | 6 - 12 in. | 12 - 17 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 13000 | 11600 | 18700 | 11800 | 10500 |
| Antimony | 25.0 (L) | 2.0 (L) | (91 NJ*) | (105 NJ*) | --- | (159 JN*) | (3 JN) |
| Arsenic | 33.0 (P) | 6.0 (P) | (162 J*) | (114 *) | (31 J) | (20 ) | (27 ) |
| Barium | NS | NS | 82 | 70 B | 44 B | 69 J | 31 J |
| Beryllium | NS | NS | 0.69 B | 0.6 B | 0.73 B | 0.53 J | 0.44 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (79 *) | (68 *) | (7 ) | (27 *) | (32 *) |
| Calcium | NS | NS | 6140 | 5380 | 2280 | 5840 | 2360 |
| Chromium** | 110.0 (P) | 26.0 (P) | (2000 *) | (1490 *) | (1040 *) | (267 J*) | (620 J*) |
| Cobalt | NS | NS | 10 B | 8.9 B | 13 B | 11 J | 6.6 J |
| Copper | 110.0 (P) | 16.0 (P) | (504 *) | (391 *) | (173 *) | (154 *) | (115 *) |
| Iron | 4% (P) | 2% (P) | (2.7 ) | (2.4 ) | (4.2 *) | (2.7 ) | (2.6 ) |
| Lead | 110.0 (L) | 31.0 (P) | (1050 *) | (859 *) | (348 *) | (376 *) | (321 *) |
| Magnesium | NS | NS | 6910 | 6410 | 10600 | 7320 | 5570 |
| Manganese | 1100 (L) | 460 (P) | 369 | 316 | 254 | 366 JN | 208 JN |
| Mercury | 1.3 (L) | 0.15 (L) | (144 *) | (130 J*) | (95 *) | (32 *) | (87 *) |
| Nickel | 50 (L) | 16 (P) | (23 ) | (20 ) | (37 ) | (25 ) | (18 ) |
| Potassium | NS | NS | 1080 B | 901 B | 883 B | 1000 J | 679 J |
| Selenium | NS | NS | --- | 1.3 B | --- | 1.4 J | 0.49 J |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | --- | --- | --- | 112 J | 48 J |
| Thallium | NS | NS | 1.4 B | --- | --- | --- | --- |
| Vanadium | NS | NS | 17 B | 15 B | 24 | 16 J | 12 J |
| Zinc | 270 (L) | 120 (P/L) | (6500 *) | (5410 *) | (926 *) | (1980 *) | (2610 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (34 JN) | (34 JN) | (6.2 JN) | (28 ) | (6 ) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 53 | 55 | 60 | 56 | 62 |
| pH | NA | NA | --- | --- | --- | 8.4 | 7.8 |
| % TOC | NS | NS | 6.3 BJ | 7 BJ | 6.3 e BJ | 2.2 | 0.7 |
| Total organic carbon (mg/Kg) | NS | NS | 62900 BJ | 70100 BJ | 62900 e BJ | 21700 | 7330 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-29 | WP-CKOUT | WP-OD3 | WP-OD3 | WP-PL |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/09/2001 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/08/2001 |
| Sample Depth | | | 12 - 18 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 12800 | 11400 | 9310 | 11300 | 12500 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | 1.7 BNJ | 1.7 BNJ | (2.9 BNJ) | (6.3 JN) |
| Arsenic | 33.0 (P) | 6.0 (P) | (44 *) | (18 ) | (6.4 ) | (7 ) | (16 J) |
| Barium | NS | NS | 81 | 130 | 58 | 58 B | 74 J |
| Beryllium | NS | NS | 0.6 J | 0.59 B | 0.41 B | 0.54 B | 0.63 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (9.9 *) | (1.8 ) | (1.7 ) | (2.3 ) | (8.5 J) |
| Calcium | NS | NS | 3900 | 3200 | 1780 | 1880 | 6040 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (4120 J*) | (64 ) | (48 ) | (89 ) | (544 J*) |
| Cobalt | NS | NS | 9.4 J | 12 B | 8.2 B | 9.7 B | 13 J |
| Copper | 110.0 (P) | 16.0 (P) | (462 *) | (154 *) | (68 ) | (104 ) | (183 J*) |
| Iron | 4% (P) | 2% (P) | (3.0 ) | (3.0 ) | (2.5 ) | (2.3 ) | (2.8 J) |
| Lead | 110.0 (L) | 31.0 (P) | (637 *) | (182 *) | (130 *) | (243 *) | (279 J*) |
| Magnesium | NS | NS | 6190 | 4860 | 5110 | 5250 | 5700 J |
| Manganese | 1100 (L) | 460 (P) | 322 JN | (2390 *) | (690 ) | 171 | 386 JN |
| Mercury | 1.3 (L) | 0.15 (L) | (118 *) | (9.6 J*) | (1.2 J) | (2.4 J*) | (17 J*) |
| Nickel | 50 (L) | 16 (P) | (21 ) | (25 ) | (19 ) | (22 ) | (41 J) |
| Potassium | NS | NS | 1180 J | 888 B | 599 B | 887 B | 1330 J |
| Selenium | NS | NS | 2.1 | 1.8 | --- | --- | 3.3 J |
| Silver | 2.2 (L) | 1.0 (L) | 0.25 J | --- | --- | --- | (1.2 J) |
| Sodium | NS | NS | 98 J | --- | --- | --- | 189 J |
| Thallium | NS | NS | --- | 2.2 B | 1.4 B | 1.5 B | --- |
| Vanadium | NS | NS | 16 J | 19 | 13 B | 15 | 21 J |
| Zinc | 270 (L) | 120 (P/L) | (1330 *) | (836 *) | (244 ) | (307 *) | (825 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (6.1 ) | (0.27 BJN) | --- | (0.28 BJN) | (7.3 J) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | 2.2 |
| Percent solids (%) | NA | NA | 58 | 70 | 72 | 68 | 26 |
| pH | NA | NA | 7.6 | --- | --- | --- | 7.2 |
| % TOC | NS | NS | 11 | 3.6 | 3.1 e | 3.1 | 12 |
| Total organic carbon (mg/Kg) | NS | NS | 105000 | 35900 | 30500 e | 30500 | 115000 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-PL DUP | WP-PL | WP-PL1 | WP-PL1 | WP-PL1 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/08/2001 | 05/08/2001 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 11 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 11900 J | 14000 J | 16000 J | 16700 J | 16600 |
| Antimony | 25.0 (L) | 2.0 (L) | (4.5 JN) | (3.4 JN) | (7.1 BNJ) | (4.7 BNJ) | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | (9.6 J) | (105 *) | (13 J) | (28 J) | 4.5 |
| Barium | NS | NS | 70 J | 87 J | 90 BJ | 106 J | 105 |
| Beryllium | NS | NS | 0.59 J | 0.67 J | 0.79 BJ | 0.83 BJ | 0.8 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (6.4 J) | (19 *) | (4.6 J) | (2.3 BJ) | 0.4 B |
| Calcium | NS | NS | 5930 J | 4230 | 7220 J | 5050 J | 4340 |
| Chromium** | 110.0 (P) | 26.0 (P) | (412 J*) | (3760 J*) | (335 J*) | (474 J*) | 24 |
| Cobalt | NS | NS | 12 J | 9.6 J | 14 BJ | 12 BJ | 12 B |
| Copper | 110.0 (P) | 16.0 (P) | (158 J*) | (345 *) | (109 J) | (104 J) | (24 ) |
| Iron | 4% (P) | 2% (P) | (2.6 J) | (2.8 ) | (3.0 J) | (2.6 J) | (2.4 ) |
| Lead | 110.0 (L) | 31.0 (P) | (281 J*) | (629 *) | (181 J*) | (213 J*) | 19 |
| Magnesium | NS | NS | 5350 J | 4990 | 6570 J | 5670 J | 5800 |
| Manganese | 1100 (L) | 460 (P) | 408 JN | 354 JN | 456 J | 276 J | 299 |
| Mercury | 1.3 (L) | 0.15 (L) | (9 J*) | (182 *) | (8.5 J*) | (14 J*) | (0.3 ) |
| Nickel | 50 (L) | 16 (P) | (37 J) | (23 ) | (37 J) | (25 J) | (24 ) |
| Potassium | NS | NS | 1230 J | 1140 J | 1470 BJ | 1170 BJ | 1040 B |
| Selenium | NS | NS | 1.7 J | 3.5 | --- | 1.4 BJ | 1.1 B |
| Silver | 2.2 (L) | 1.0 (L) | (1.1 J) | 0.55 J | --- | --- | --- |
| Sodium | NS | NS | 176 J | 147 J | 185 BJ | 133 BJ | 100 B |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 21 J | 17 J | 25 BJ | 20 BJ | 18 |
| Zinc | 270 (L) | 120 (P/L) | (654 J*) | (1820 *) | (501 J*) | (275 J*) | 79 |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | (42 ) | (0.87 BJ) | (0.52 BJ) | (0.65 B) |
| Cyanide, amenable to chlorination | NS | NS | --- | 13 | --- | --- | --- |
| Percent solids (%) | NA | NA | 25 | 40 | 29 | 43 | 56 |
| pH | NA | NA | 7.7 | 7.4 | --- | --- | --- |
| % TOC | NS | NS | 12 | 8.2 | 11 J | 8.1 J | 5.2 |
| Total organic carbon (mg/Kg) | NS | NS | 115000 | 82300 | 108000 J | 80500 J | 51700 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.



File Number: 10653.27258

FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg DBF File: Q:\10653_NYSDEC\27258_ThreeStar\CreekTables.dbf Date Printed: 05/11/2005 09:45:02

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# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-PL2 | WP-PL2 | WP-PL2 | WP-PL3 | WP-PL3 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 15000 J | 15700 J | 13200 J | 15900 J | 17100 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | (7.8 BNJ) | --- | (21 BNJ) |
| Arsenic | 33.0 (P) | 6.0 (P) | 3.4 BJ | 5.6 BJ | (20 J) | 4.3 BJ | (34 J*) |
| Barium | NS | NS | 79 BJ | 86 BJ | 77 BJ | 87 BJ | 103 BJ |
| Beryllium | NS | NS | 0.74 BJ | 0.78 BJ | 0.63 BJ | 0.79 BJ | 0.82 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | (4.7 J) | (5 J) | (4.7 J) | (4.9 J) | (8.9 J) |
| Calcium | NS | NS | 6420 J | 5450 J | 3670 J | 7350 J | 5310 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (204 J*) | (211 J*) | (574 J*) | (244 J*) | (1170 J*) |
| Cobalt | NS | NS | 13 BJ | 13 BJ | 9.7 BJ | 14 BJ | 13 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (162 J*) | (195 J*) | (112 J*) | (146 J*) | (225 J*) |
| Iron | 4% (P) | 2% (P) | (2.6 J) | (2.7 J) | (2.3 J) | (2.8 J) | (2.8 J) |
| Lead | 110.0 (L) | 31.0 (P) | (297 J*) | (405 J*) | (193 J*) | (258 J*) | (435 J*) |
| Magnesium | NS | NS | 6200 J | 6190 J | 4750 J | 6590 J | 5940 J |
| Manganese | 1100 (L) | 460 (P) | 335 J | 301 J | 256 J | 349 J | 335 J |
| Mercury | 1.3 (L) | 0.15 (L) | (8.1 J*) | (8.5 J*) | (20 J*) | (9.5 J*) | (27 J*) |
| Nickel | 50 (L) | 16 (P) | (41 J) | (36 J) | (21 J) | (43 J) | (29 J) |
| Potassium | NS | NS | 1490 BJ | 1350 BJ | 954 BJ | 1540 BJ | 1360 BJ |
| Selenium | NS | NS | --- | 2 BJ | --- | --- | 1.9 BJ |
| Silver | 2.2 (L) | 1.0 (L) | --- | 0.97 BJ | --- | --- | --- |
| Sodium | NS | NS | 221 BJ | 189 BJ | 134 BJ | 249 BJ | 199 BJ |
| Thallium | NS | NS | --- | --- | --- | 3 BJ | --- |
| Vanadium | NS | NS | 22 BJ | 25 BJ | 16 BJ | 25 BJ | 24 BJ |
| Zinc | 270 (L) | 120 (P/L) | (488 J*) | (515 J*) | (431 J*) | (492 J*) | (887 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | (0.49 BJ) | (8 J) | (0.68 BJ) | (11 J) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | 1.7 | --- | --- |
| Percent solids (%) | NA | NA | 26 | 34 | 43 | 24 | 35 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 5.9 BJ | 6.4 BJ | 7.7 BJ | 9.4 BJ | 12 BJ |
| Total organic carbon (mg/Kg) | NS | NS | 58700 BJ | 64200 BJ | 77000 BJ | 93900 BJ | 118000 BJ |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T1A | WP-T1A | WP-T1A | WP-T1C | WP-T1C |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 10 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 13700 J | 12900 J | 13500 | 9690 | 11500 |
| Antimony | 25.0 (L) | 2.0 (L) | --- | (3.7 BNJ) | --- | (40 NJ*) | (52 NJ*) |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.8 J) | (8 J) | (13 ) | (6.2 ) | (22 ) |
| Barium | NS | NS | 68 BJ | 69 BJ | 57 B | 42 B | 60 B |
| Beryllium | NS | NS | 0.67 BJ | 0.66 BJ | 0.62 B | 0.46 B | 0.58 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (1.9 BJ) | (4.5 J) | (1.6 B) | (3.3 ) | (13 *) |
| Calcium | NS | NS | 5910 J | 4730 J | 2700 | 4590 | 4060 |
| Chromium** | 110.0 (P) | 26.0 (P) | (53 J) | (148 J*) | (242 *) | (74 ) | (274 *) |
| Cobalt | NS | NS | 17 BJ | 14 BJ | 11 B | 10 B | 10 B |
| Copper | 110.0 (P) | 16.0 (P) | (70 J) | (117 J*) | (48 ) | (61 ) | (132 *) |
| Iron | 4% (P) | 2% (P) | (2.9 J) | (2.6 J) | (2.6 ) | (2.2 ) | (2.5 ) |
| Lead | 110.0 (L) | 31.0 (P) | (87 J) | (210 J*) | (101 ) | (92 ) | (230 *) |
| Magnesium | NS | NS | 6250 J | 5960 J | 5920 | 5590 | 5550 |
| Manganese | 1100 (L) | 460 (P) | (527 J) | 351 J | 284 | 363 | 306 |
| Mercury | 1.3 (L) | 0.15 (L) | (1.7 J*) | (4.6 J*) | (3.1 J*) | (4.8 J*) | (20 J*) |
| Nickel | 50 (L) | 16 (P) | (35 J) | (35 J) | (23 ) | (22 ) | (22 ) |
| Potassium | NS | NS | 1190 BJ | 1090 BJ | 1020 B | 756 B | 916 B |
| Selenium | NS | NS | --- | 1.5 BJ | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 137 BJ | 102 BJ | --- | --- | --- |
| Thallium | NS | NS | 3.3 BJ | 3 BJ | 1.1 B | 1 B | 1.5 B |
| Vanadium | NS | NS | 24 BJ | 25 J | 16 B | 14 B | 15 B |
| Zinc | 270 (L) | 120 (P/L) | (240 J) | (452 J*) | (192 ) | (323 *) | (1050 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (0.65 BJ) | (0.84 BJN) | (0.33 BN) | (3.9 N) | (4.3 N) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 34 | 43 | 59 | 70 | 63 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 8.5 e J | 8.5 e J | 8.5 J | 3.1 e | 3.1 |
| Total organic carbon (mg/Kg) | NS | NS | 85400 e J | 85400 e J | 85400 J | 31100 e | 31100 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-OD2 | WP-OD2 | WP-OD2 | WP-T2A | WP-T2A |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 22 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 12600 J | 11700 J | 12700 | 13100 J | 10300 |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | (8.9 BNJ) |
| Arsenic | 33.0 (P) | 6.0 (P) | 5.3 BJ | 5.1 J | (16 ) | 5.3 BJ | (7.5 ) |
| Barium | NS | NS | 66 BJ | 60 BJ | 48 B | 70 BJ | 45 B |
| Beryllium | NS | NS | 0.61 BJ | 0.54 BJ | 0.56 B | 0.7 BJ | 0.44 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (2.3 BJ) | (2.2 J) | (4 ) | (1.9 BJ) | (2.8 ) |
| Calcium | NS | NS | 5310 J | 3120 J | 1950 | 6070 J | 2290 |
| Chromium** | 110.0 (P) | 26.0 (P) | (68 J) | (78 J) | (351 *) | (58 J) | (119 *) |
| Cobalt | NS | NS | 14 BJ | 12 BJ | 12 B | 14 BJ | 11 B |
| Copper | 110.0 (P) | 16.0 (P) | (69 J) | (63 J) | (55 ) | (69 J) | (46 ) |
| Iron | 4% (P) | 2% (P) | (2.5 J) | (2.5 J) | (2.8 ) | (2.8 J) | (2.2 ) |
| Lead | 110.0 (L) | 31.0 (P) | (96 J) | (111 J*) | (102 ) | (86 J) | (91 ) |
| Magnesium | NS | NS | 6150 J | 5370 J | 5780 | 6270 J | 4830 |
| Manganese | 1100 (L) | 460 (P) | 433 J | 305 J | 284 | (633 J) | 228 |
| Mercury | 1.3 (L) | 0.15 (L) | (1.9 J*) | (2.5 J*) | (19 J*) | (1.4 J*) | (3.9 *) |
| Nickel | 50 (L) | 16 (P) | (36 J) | (31 J) | (24 ) | (32 J) | (21 ) |
| Potassium | NS | NS | 1260 BJ | 951 BJ | 1080 B | 1400 BJ | 896 B |
| Selenium | NS | NS | --- | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 156 BJ | 90 BJ | --- | 184 BJ | 76 B |
| Thallium | NS | NS | 2.4 BJ | --- | 1.6 B | --- | --- |
| Vanadium | NS | NS | 24 BJ | 21 J | 16 B | 22 BJ | 13 B |
| Zinc | 270 (L) | 120 (P/L) | (266 J) | (250 J) | (442 *) | (265 J) | (311 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | --- | --- | (0.44 B) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 30 | 49 | 63 | 27 | 63 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 4.1 e J | 4.1 e J | 4.1 J | 5 BJ | 3.1 B |
| Total organic carbon (mg/Kg) | NS | NS | 41100 e J | 41100 e J | 41100 J | 49600 BJ | 31400 B |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T2B | WP-T2B | WP-T2B | WP-T2C | WP-T2C |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 14700 J | 11800 | 11400 | 11900 J | 14000 |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.5 J) | 3.8 | 2.2 B | (7.7 J) | (40 *) |
| Barium | NS | NS | 78 BJ | 28 B | 41 B | 65 BJ | 60 B |
| Beryllium | NS | NS | 0.69 BJ | 0.38 B | 0.44 B | 0.61 BJ | 0.64 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (1.5 BJ) | (1.1 B) | 0.56 B | (4.6 J) | (5.6 ) |
| Calcium | NS | NS | 7300 J | 1630 | 1740 | 6760 J | 3170 |
| Chromium** | 110.0 (P) | 26.0 (P) | (34 J) | (27 ) | 17 | (64 J) | (826 *) |
| Cobalt | NS | NS | 18 BJ | 14 | 10 B | 18 BJ | 14 B |
| Copper | 110.0 (P) | 16.0 (P) | (50 J) | (22 ) | 14 | (90 J) | (129 *) |
| Iron | 4% (P) | 2% (P) | (3.0 J) | (2.7 ) | (2.3 ) | (2.6 J) | (2.8 ) |
| Lead | 110.0 (L) | 31.0 (P) | (106 J) | (40 ) | 26 | (125 J*) | (287 *) |
| Magnesium | NS | NS | 7780 J | 7170 | 5240 | 6670 J | 6280 |
| Manganese | 1100 (L) | 460 (P) | (506 J) | 248 | 247 | 421 J | 290 |
| Mercury | 1.3 (L) | 0.15 (L) | (0.46 J) | (0.17 ) | (0.18 ) | (1.7 J*) | (33 *) |
| Nickel | 50 (L) | 16 (P) | (35 J) | (26 ) | (20 ) | (37 J) | (29 ) |
| Potassium | NS | NS | 1540 BJ | 740 B | 960 B | 1310 BJ | 1270 B |
| Selenium | NS | NS | --- | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 195 BJ | 56 B | 88 B | 163 BJ | 124 B |
| Thallium | NS | NS | --- | 0.86 BJ | 1.5 BJ | --- | --- |
| Vanadium | NS | NS | 23 BJ | 13 B | 13 B | 22 BJ | 18 B |
| Zinc | 270 (L) | 120 (P/L) | (238 J) | (155 ) | 82 | (470 J*) | (588 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | (0.33 B) | --- | --- | (1.5 ) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 33 | 75 | 68 | 33 | 51 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 4.9 J | 2.6 J | 1.9 | 4.5 BJ | 5.9 B |
| Total organic carbon (mg/Kg) | NS | NS | 49000 J | 26400 J | 19100 | 45000 BJ | 59000 B |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T2C | WP-OD1 | WP-OD1 | WP-OD1 | WP-T3A |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 12 - 19 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 13400 | 12200 J | 17000 | 15800 | 15800 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | 3.8 | (16 J) | (21 ) | 5 | (6.1 BJ) |
| Barium | NS | NS | 45 B | 67 BJ | 87 | 81 | 92 BJ |
| Beryllium | NS | NS | 0.5 B | 0.69 BJ | 0.83 B | 0.79 B | 0.82 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | 0.42 B | (5.8 J) | (1.8 B) | 0.58 B | (2.8 BJ) |
| Calcium | NS | NS | 1710 | 6940 J | 3700 | 3130 | 8830 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (31 ) | (247 J*) | (566 *) | 23 | (66 J) |
| Cobalt | NS | NS | 10 B | 20 BJ | 14 B | 12 B | 17 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (18 ) | (89 J) | (89 ) | (23 ) | (84 J) |
| Iron | 4% (P) | 2% (P) | (2.6 ) | (2.8 J) | (2.9 ) | (2.7 ) | (3.1 J) |
| Lead | 110.0 (L) | 31.0 (P) | (37 ) | (138 J*) | (218 *) | (66 ) | (106 J) |
| Magnesium | NS | NS | 6130 | 6070 J | 6320 | 5930 | 8070 J |
| Manganese | 1100 (L) | 460 (P) | 242 | 450 J | 366 | 374 | (469 J) |
| Mercury | 1.3 (L) | 0.15 (L) | 0.095 | (8.3 J*) | (20 *) | 0.11 | (1.1 J) |
| Nickel | 50 (L) | 16 (P) | (23 ) | (47 J) | (29 ) | (26 ) | (42 J) |
| Potassium | NS | NS | 990 B | 1490 BJ | 1560 B | 1470 B | 1900 BJ |
| Selenium | NS | NS | --- | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 99 B | 222 BJ | 185 B | 165 B | 223 BJ |
| Thallium | NS | NS | --- | 3.1 BJ | 1.7 BJ | 2.2 BJ | --- |
| Vanadium | NS | NS | 15 | 28 BJ | 23 | 22 | 38 J |
| Zinc | 270 (L) | 120 (P/L) | 73 | (611 J*) | (251 ) | 84 | (316 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (0.27 B) | --- | (0.6 B) | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 70 | 27 | 51 | 53 | 30 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 1.1 B | 5.7 BJ | 6.1 B | 3.8 B | 5.6 J |
| Total organic carbon (mg/Kg) | NS | NS | 11000 B | 56500 BJ | 60700 B | 37600 B | 56400 J |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T3A DUP | WP-T3A | WP-T3A | WP-T3B | WP-T3B |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 14600 J | 19000 J | 15900 | 14500 J | 16500 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | (2.4 BNJ) | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.1 BJ) | (10 J) | (30 ) | 5 BJ | (8.4 J) |
| Barium | NS | NS | 84 BJ | 95 BJ | 86 | 94 BJ | 91 J |
| Beryllium | NS | NS | 0.73 BJ | 0.94 BJ | 0.76 B | 0.79 BJ | 0.82 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | (2.4 BJ) | (3.7 J) | (5.3 ) | (1.7 BJ) | (1.5 BJ) |
| Calcium | NS | NS | 8110 J | 10200 J | 4460 | 11500 J | 4860 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (60 J) | (110 J) | (322 *) | (44 J) | (159 J*) |
| Cobalt | NS | NS | 15 BJ | 19 BJ | 13 B | 14 BJ | 15 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (73 J) | (99 J) | (81 ) | (56 J) | (53 J) |
| Iron | 4% (P) | 2% (P) | (2.8 J) | (3.8 J) | (2.8 ) | (3.0 J) | (3.0 J) |
| Lead | 110.0 (L) | 31.0 (P) | (94 J) | (136 J*) | (160 *) | (67 J) | (94 J) |
| Magnesium | NS | NS | 7860 J | 12900 J | 6970 | 7180 J | 7110 J |
| Manganese | 1100 (L) | 460 (P) | 445 J | (492 J) | 400 | (702 J) | (495 J) |
| Mercury | 1.3 (L) | 0.15 (L) | (1.3 J) | (2.7 J*) | (13 *) | (0.77 J) | (0.44 J) |
| Nickel | 50 (L) | 16 (P) | (38 J) | (48 J) | (27 ) | (31 J) | (34 J) |
| Potassium | NS | NS | 1720 BJ | 1840 BJ | 1610 B | 1750 BJ | 1650 BJ |
| Selenium | NS | NS | --- | --- | 1.1 B | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 207 BJ | 180 BJ | 129 B | 195 BJ | 144 BJ |
| Thallium | NS | NS | --- | --- | --- | 2.3 BJ | 2.5 BJ |
| Vanadium | NS | NS | 31 BJ | 51 J | 21 | 25 BJ | 28 J |
| Zinc | 270 (L) | 120 (P/L) | (281 J*) | (364 J*) | (508 *) | (222 J) | (179 J) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | (2.7 ) | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 29 | 36 | 54 | 29 | 46 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 6.9 BJ | 5.8 J | 4.4 J | 4 BJ | 3.8 BJ |
| Total organic carbon (mg/Kg) | NS | NS | 69300 BJ | 57700 J | 44200 J | 39600 BJ | 38000 BJ |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 4-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T3B | WP-T3C | WP-T3C |
|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 12 - 24 in. | 0 - 6 in. | 6 - 11 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | |
| Aluminum | NS | 73200 (1) | 16600 | 15700 J | 15400 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | 1.3 BNJ |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.4 ) | 5.8 BJ | (9.3 J) |
| Barium | NS | NS | 81 | 92 BJ | 91 J |
| Beryllium | NS | NS | 0.8 B | 0.89 BJ | 0.81 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | (0.61 B) | (2.6 BJ) | (3.4 J) |
| Calcium | NS | NS | 3150 | 8620 J | 5800 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (53 ) | (60 J) | (115 J*) |
| Cobalt | NS | NS | 14 B | 15 BJ | 14 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (29 ) | (79 J) | (78 J) |
| Iron | 4% (P) | 2% (P) | (3.0 ) | (3.2 J) | (3.1 J) |
| Lead | 110.0 (L) | 31.0 (P) | (188 *) | (94 J) | (125 J*) |
| Magnesium | NS | NS | 6520 | 7830 J | 6830 J |
| Manganese | 1100 (L) | 460 (P) | 430 | (508 J) | (466 J) |
| Mercury | 1.3 (L) | 0.15 (L) | 0.13 | (0.84 J) | (4.9 J*) |
| Nickel | 50 (L) | 16 (P) | (29 ) | (41 J) | (33 J) |
| Potassium | NS | NS | 1640 B | 2010 BJ | 1590 BJ |
| Selenium | NS | NS | --- | --- | 1.5 BJ |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- |
| Sodium | NS | NS | 132 B | 249 BJ | 179 BJ |
| Thallium | NS | NS | 2 BJ | --- | --- |
| Vanadium | NS | NS | 23 | 42 J | 28 J |
| Zinc | 270 (L) | 120 (P/L) | 92 | (269 J) | (353 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | (0.36 BJ) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- |
| Percent solids (%) | NA | NA | 54 | 31 | 45 |
| pH | NA | NA | --- | --- | --- |
| % TOC | NS | NS | 2 B | 7.2 J | 6.4 J |
| Total organic carbon (mg/Kg) | NS | NS | 19700 B | 72000 J | 63800 J |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.



FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg DBF File: Q:\10653_NYSDEC\27258_ThreeStar\CreekTables.dbf File Number: 10653.27258 Date Printed: 03/11/2005 09:45:02

Table 4-4 Pesticides detected in sediment compared to screening values including %TOC data.

| Parameter | Screening value ug/gOC | Background deep sediment C | TOC | SC | | WP-04.45-9 0-6" C | SC | | WP09 0-6" C | SC | | WP18 6-12" C | SC | | WP-PL 0-6" C | SC | | WP-29 6-12" C | SC | | LG-OUT 0-6" C | SC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Pesticide*** | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4-DDD | 0.01 | 12 | 5.5 | 0.2 | J | --- | --- | | --- | --- | | 2.5 | **0.104** | JP | 12 | **0.10** | jp | --- | --- | | 2.9 | **0.05** | jp |
| 4,4-DDE | 0.01 | 13 | 5.5 | 0.2 | JP | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | |
| 4,4-DDT | 0.01 | --- | --- | --- | | 6.6 | **0.3** | BPJ | --- | --- | | --- | --- | | --- | --- | | --- | --- | | 5.4 | **0.10** | bpjn |
| Endosulfan sulfate | 0.03 | 9.8 | 4.7 | 0.2 | JNP | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | |
| Endrin | 0.8 | 5.7 | 4.7 | 0.1 | JP | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | |
| a-chlorodane | 0.001 | 3.6 | 6.2 | 0.06 | JP | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | |
| g-chlorodane | 0.001 | 2 | 5.5 | 0.04 | J | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | |
| Dieldrin | 0.1 | --- | --- | --- | | --- | --- | | 6.8 | 0.1 | PNJ | --- | --- | | --- | --- | | --- | --- | | --- | --- | |
| Heptachlor epoxide | 0.0008 | --- | --- | --- | | --- | --- | | --- | --- | | 1 | **0.042** | jp | --- | --- | | --- | --- | | --- | --- | |
| Endrin ketone | | --- | --- | --- | | --- | --- | | --- | --- | | --- | --- | | 7 | 0.06 | jp | 13 | 1.9 | pj | --- | --- | |
| a-BHC | | --- | --- | --- | | --- | --- | | --- | --- | | --- | --- | | --- | --- | | 2.8 | 0.4 | jp | --- | --- | |
| %TOC | | --- | --- | --- | | 2.2 | --- | | 6.6 | --- | | 2.4 | --- | | 12 | --- | | 0.7 | --- | | 5.6 | --- | |

Notes:
Screening values presented from ***Technical Guidance for Screening Cotaminated Sediments*** . NYSDEC 1999.
C = analytical concentration reported by laboratory in ug/Kg; SC = screening concentration in ug/gOC for comparison to NYSDEC screening values reported in those units.
--- = constituent not detected
Data qualifiers: J = estimated concentration; B= blank contamination

Table 4-5. Wappingers Lake sediment results - background

| Concentration range | Parameter | Surface sediment (6 samples total) Description |
|---|---|---|
| Constituents above the SEL screening values | Lead | Lead ranged from 47 to 187 mg/Kg, with each location exceeding the LEL of 31 mg/Kg and two of the six locations exceeding the SEL of 110 mg/Kg. The maximum background level of lead was approximately 1.7 times the SEL. |
| | Zinc | Zinc ranged from 178 to 359 mg/Kg, with each location exceeding the LEL of 120 mg/Kg and one of the six locations exceeding the SEL of 270 mg/Kg. The maximum background level was approximately 1.3 times the SEL. |
| Constituents frequently above LEL screening values | Cadmium | Cadmium was above LEL in five of six samples with maximum level of 1.4 mg/kg compared to a LEL of 0.6 mg/Kg. |
| | Copper | Copper ranged from 35 to 90 mg/Kg with each of the six samples exceeding the LEL of 16 mg/Kg. |
| | Iron | Iron ranged from 2.7% to 3.3% with each of the six samples exceeding the LEL of 2%. |
| | Manganese | Manganese ranged from 541 to 1000 mg/Kg with each of the six samples exceeding the LEL of 460 mg/Kg. |
| | Mercury | Mercury ranged from 0.29 to 0.57 mg/Kg with each of the six samples exceeding the LEL of 0.15 mg/Kg. |
| | Nickel | Nickel ranged from 24 to 33 mg/Kg with each of the six samples exceeding the LEL of 16 mg/Kg. |

Table 4-5. Wappingers Lake sediment results - background

| Concentration range | Parameter | Surface sediment (6 samples total) Description |
|---|---|---|
| Constituents slightly above the LEL screening value | Arsenic | Arsenic was slightly above LEL in one of six samples with a maximum concentration of 6.3 mg/Kg compared to a LEL of 6.0 mg/Kg. |
| | Chromium | Chromium was above the LEL in one of the six background samples, with a maximum of 27 mg/Kg detected compared to a LEL of 26 mg/Kg. Hexavalent chromium was not detected; however, the detection limit for hexavalent chromium was higher than the LEL in four of the six samples (Section 2.5.1). |
| | Cyanide | Cyanide was detected in one of the six samples at 3.2 mg/Kg which was above the 0.1 mg/Kg screening value of Eisler (1991). A New York State screening value is not provided in the state's sediment guidance (NYSDEC 1999) Cyanide was not detected in the other five background samples; however, the detection limits for those samples were above the screening value, ranging from 1.4 to 4.3 mg/Kg. Amenable cyanide was not detected above the detection limits of mg/Kg. |
| Constituents not detected above the LEL screening value, but trace level presence can not be ruled out | Silver | Silver was not detected; however, the detection limits for some of the samples were above the LEL screening value. |

Table 4-6. Wappingers Creek sediment constituents (mg/Kg) above screening values

| Area/Location | Depth | tPAH | BaP | BaP OC | DBF | Phen | Sb | As | Cd | Cr | Cu | Fe | Pb | Mn | Hg | Ni | Se | Ag | Tl | Vn | Zn | CN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NYS Guidance - LEL | | 4 | --- | 1.3 | --- | --- | 2 | 6 | 0.6 | 26 | 16 | 2% | 31 | 460 | 0.15 | 16 | --- | 1 | --- | --- | 120 | 0.1 |
| NYS Guidance - SEL | | --- | --- | --- | --- | --- | 25 | 33 | 9 | 110 | 110 | 4% | 110 | 1100 | 1.3 | 50 | --- | 2.2 | --- | --- | 270 | --- |
| Alternative ecological value | | 85 | 0.44 | --- | 5.1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Background Maximum | | 5.5 | 0.6 | 0.01 | --- | --- | 3.2 | 6.3 | 1.4BJ | 27 | 90 | 3.3% | 187 | 1000 | 0.57 | 33 | 2.5 | --- | --- | 38B | 359 | 3.2 |
| Site area | | | | | | | | | | | | | | | | | | | | | | |
| WP-01-A | 0-6 in | --- | --- | --- | --- | --- | --- | 6.5 | 1 | --- | 48 | 3.4 | 94 | 912 | 0.51 | 22 | --- | --- | --- | --- | 163 | --- |
| WP-4.45-9 | 0-6 in | 64 | 8.4 | --- | --- | --- | --- | 8.9 | 1.3 | --- | 91 | 4.3 | 152 | 1790 | --- | 26 | --- | --- | --- | --- | 210 | --- |
| WP-09A | 0-6 in | --- | --- | --- | --- | --- | --- | 19 | --- | --- | 41 | 2.8 | 73 | 902 | 0.17 | 17 | --- | --- | --- | --- | --- | --- |
| WP-11A | 0-6 in | --- | 0.5 | --- | --- | --- | --- | 10 | --- | --- | 172 | --- | 225 | --- | 0.44 | --- | --- | --- | --- | --- | 196 | 1.1 |
| LG-OUT | 0-6 in | 28 | 5.5 | --- | --- | --- | 2.3 | 9.9 | 2.4 | 29 | 88 | 3.1 | 235 | 566 | 1.1 | 34 | --- | --- | --- | --- | 285 | --- |
| LG-OUT2 | 0-6 in | 6.7 | 1.0 | --- | --- | --- | --- | 6.6 | 1.7 | --- | 63 | 3.4 | 141 | --- | 0.34 | 56 | --- | --- | --- | --- | 262 | 0.33 |
| MP-MW4 | 0-6 in | 12 | 0.8 | --- | --- | --- | --- | 6.3 | 1.2 | --- | 53 | 3.6 | 130 | 541 | 0.16 | 25 | --- | --- | --- | --- | 231 | 0.34 |
| MP-MW4 (DUP) | 0-6 in | 8.7 | 0.9 | --- | --- | --- | --- | 8.4 | 1.2 | --- | 62 | 4.1 | 1450 | 579 | --- | 26 | --- | --- | --- | --- | 246 | 0.35 |
| WP-16 | 0-6 in | 9.2 | 1.1 | --- | --- | --- | --- | 7 | 1.9 | --- | 61 | 3.3 | 67 | 489 | 0.17 | 23 | --- | --- | --- | --- | 309 | --- |
| Shoal area | | | | | | | | | | | | | | | | | | | | | | |
| WP-18 | 0-6 in | 8.9 | 1.1 | --- | --- | --- | --- | --- | --- | --- | --- | 2.7 | --- | --- | --- | 21 | --- | --- | --- | --- | --- | --- |
| | 6-12 in | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.7 | --- | --- | 0.44 | 20 | --- | --- | --- | --- | --- | --- |
| WP-M2 | 0-6 in | --- | 1.8 | --- | --- | --- | --- | 6.6 | 1.8 | 34 | 58 | 3.6 | 129 | 874 | 0.83 | 32 | --- | --- | --- | --- | 325 | 1.3 |
| | 6-12 in | 165 | 20 | 2 | --- | --- | --- | 15 | 2.6 | 482 | 71 | 2.6 | 210 | --- | 34 | 24 | --- | --- | 1.1B | --- | 396 | 5.1 |
| | 12-17in | 41 | 5.3 | --- | --- | 0.1 | --- | 14 | 1.2 | 465 | 51 | 2.8 | 174 | --- | 68 | 22 | --- | --- | 0.85B | --- | 195 | 1.7 |
| WP-M3 | 0-6 in | 9.6 | --- | --- | --- | --- | --- | --- | 1.4 | 27 | 77 | 2.3 | 182 | 527 | 0.73 | 24 | --- | --- | --- | --- | 294 | --- |
| | 6-12 in | 106 | 12 | --- | --- | --- | 92 | 33 | 23 | 280 | 187 | 2.5 | 399 | --- | 27 | 23 | --- | --- | --- | --- | 1780 | 16 |
| WP-OD3 | 0-6 in | 13 | 0.5 | --- | --- | --- | --- | 6.4 | 1.7 | 48 | 68 | 2.5 | 130 | 690 | 1.2 | 19 | --- | --- | 1.4B | --- | 244 | --- |
| | 6-12 in | 14 | 1.1 | --- | --- | 0.08 | 2.9 | 7 | 2.3 | 89 | 104 | 2.3 | 243 | --- | 2.4 | 22 | --- | --- | 1.5B | --- | 307 | 0.28 |
| WP-DOT | 0-6 in | 114 | 14 | --- | --- | --- | 5.4 | 9.5 | 4.2 | 50 | 44 | 3.6 | 113 | --- | 0.86 | 33 | --- | --- | 1B | --- | 732 | 0.52 |
| | 6-12 in | 308 | 30 | 2 | --- | --- | 27 | 103 | 53 | 2270 | 426 | 2.7 | 803 | --- | 186 | 22 | --- | --- | 1.2B | --- | 4650 | 26 |
| | 12-18 in | 370 | 30 | 2 | --- | --- | --- | 35 | 7.4 | 2130 | 214 | 2.7 | 452 | --- | 88 | 22 | --- | --- | --- | --- | 1210 | 2.7 |

Table 4-6. Wappingers Creek sediment constituents (mg/Kg) above screening values

| Area/Location | Depth | tPAH | BaP | BaP OC | DBF | Phen | Sb | As | Cd | Cr | Cu | Fe | Pb | Mn | Hg | Ni | Se | Ag | Tl | Vn | Zn | CN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NYS Guidance - LEL | | 4 | --- | 1.3 | --- | --- | 2 | 6 | 0.6 | 26 | 16 | 2% | 31 | 460 | 0.15 | 16 | --- | 1 | --- | --- | 120 | 0.1 |
| NYS Guidance - SEL | | --- | --- | --- | --- | --- | 25 | 33 | 9 | 110 | 110 | 4% | 110 | 1100 | 1.3 | 50 | --- | 2.2 | --- | --- | 270 | --- |
| Alternative ecological value | | 85 | 0.44 | --- | 5.1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Background Maximum | | 5.5 | 0.6 | 0.01 | --- | --- | 3.2 | 6.3 | 1.4BJ | 27 | 90 | 3.3% | 187 | 1000 | 0.57 | 33 | 2.5 | --- | --- | 38B | 359 | 3.2 |
| Shoal area (continued) | | | | | | | | | | | | | | | | | | | | | | |
| WP-29A | 0-6 in | 24 | --- | --- | --- | --- | 13 | --- | 3.6 | 55 | 56 | 2.2 | 106 | --- | 4.6 | 27 | --- | --- | 1.2B | --- | 466 | 0.32 |
| | 6-12 in | 253 | 23 | --- | --- | --- | 91 | 162 | 79 | 2000 | 504 | 2.7 | 1050 | --- | 144 | 23 | --- | --- | 1.4B | --- | 6500 | 34 |
| (DUP) | 6-12 in | 445 | 33 | --- | 6.0 | --- | 105 | 114 | 68 | 1490 | 391 | 2.4 | 859 | --- | 130 | 20 | --- | --- | --- | --- | 5410 | 34 |
| | 12-17in | 404 | 38 | --- | --- | --- | --- | 31 | 7 | 1040 | 173 | 4.2 | 348 | --- | 95 | 37 | --- | --- | --- | --- | 926 | 6.2 |
| WP-29 | 0-6 in | 214 | 24 | --- | --- | --- | 159 | 20 | 27 | 267 | 154 | 2.7 | 376 | --- | 32 | 25 | --- | --- | --- | --- | 1980 | 28 |
| | 6-12 in | 197 | 14 | 2 | 5.4 | --- | 3 | 27 | 32 | 620 | 115 | 2.6 | 321 | --- | 87 | 18 | --- | --- | --- | --- | 2610 | 6 |
| | 12-18 in | 1092 | 93 | --- | 30 | --- | --- | 44 | 9.9 | 4120 | 462 | 3 | 637 | --- | 118 | 21 | --- | --- | --- | --- | 1330 | 6.1 |
| WP-CKOUT | 0-6 in | 9.6 | 1.3 | --- | --- | --- | --- | 18 | 1.8 | 64 | 154 | 3 | 182 | 2390 | 9.6 | 25 | --- | --- | 2.2B | --- | 836 | 0.27 |
| Embayment | | | | | | | | | | | | | | | | | | | | | | |
| WP-PL | 0-6 in | 45 | 6.7 | --- | --- | --- | 6.3 | 16 | 8.5 | 544 | 183 | 2.8 | 279 | --- | 17 | 41 | 3.3 | 1.2 | --- | --- | 825 | 7.3 |
| (DUP) | 0-6 in | 31 | 5 | --- | --- | --- | 4.5 | 9.6 | 6.4 | 412 | 158 | 2.6 | 281 | --- | 9 | 37 | --- | 1.1 | --- | --- | 654 | --- |
| | 6-11 in | 29 | 4 | --- | --- | --- | 3.4 | 105 | 19 | 3760 | 345 | 2.8 | 629 | --- | 182 | 23 | 3.5 | --- | --- | --- | 1820 | 42 |
| WP-PL1 | 0-6 in | 20 | 1.9 | --- | --- | --- | 7.1 | 13 | 4.6 | 335 | 109 | 3 | 181 | --- | 8.5 | 37 | --- | --- | --- | --- | 501 | 0.87 |
| | 6-12 in | --- | --- | --- | --- | --- | 4.7 | 28 | 2.3 | 474 | 104 | 2.6 | 213 | --- | 14 | 25 | --- | --- | --- | --- | 275 | 0.52 |
| | 12-18 in | --- | --- | --- | --- | --- | --- | --- | --- | --- | 24 | 2.4 | --- | --- | 0.3 | 24 | --- | --- | --- | --- | --- | 0.65 |
| WP-PL2 | 0-6 in | 24 | 2.2 | --- | --- | --- | --- | --- | 4.7 | 204 | 162 | 2.6 | 297 | --- | 8.1 | 41 | --- | --- | --- | --- | 488 | --- |
| | 6-12 in | 14 | 15 | --- | --- | --- | --- | --- | 5 | 211 | 195 | 2.7 | 405 | --- | 8.5 | 36 | --- | --- | --- | --- | 515 | --- |
| | 12-24 in | 8.8 | 1.2 | --- | --- | --- | 7.8 | 20 | 4.7 | 574 | 112 | 2.3 | 193 | --- | 20 | 21 | --- | --- | --- | --- | 431 | 8 |
| WP-PL3 | 0-6 in | 7.1 | 0.7 | --- | --- | --- | --- | --- | 4.9 | 244 | 146 | 2.8 | 258 | --- | 9.5 | 43 | --- | --- | 3B | --- | 492 | 0.68 |
| | 6-12 in | 14 | 0.5 | --- | --- | --- | 21 | 34 | 8.9 | 1170 | 225 | 2.8 | 435 | --- | 27 | 29 | --- | --- | --- | --- | 887 | 11 |
| Downstream section | | | | | | | | | | | | | | | | | | | | | | |
| WP-T1A | 0-6 in | 5.9 | 0.5 | --- | --- | --- | --- | 6.8 | 1.9 | 53 | 70 | 2.9 | 87 | 527 | 1.7 | 35 | --- | --- | 3.3B | --- | 240 | 0.65 |
| | 6-12 in | 20 | 1.1 | --- | --- | 0.09 | 3.7 | 8 | 4.5 | 148 | 117 | 2.6 | 210 | --- | 4.6 | 35 | --- | --- | 3B | --- | 452 | 0.84 |
| | 12-24 in | 71 | 8.4 | --- | --- | 0.09 | --- | 13 | 1.6 | 242 | 48 | 2.6 | 101 | --- | 3.1 | 23 | --- | --- | 1.1B | --- | 192 | 0.33 |
| WP-T1C | 0-6 in | 8.2 | --- | --- | --- | 0.05 | 40 | 6.2 | 3.3 | 74 | 61 | 2.2 | 92 | --- | 4.8 | 22 | --- | --- | 1B | --- | 323 | 3.9 |
| | 6-10 in | 7.5 | --- | --- | --- | 0.08 | 52 | 22 | 13 | 274 | 132 | 2.5 | 230 | --- | 20 | 22 | --- | --- | 1.5B | --- | 1050 | 4.3 |

Table 4-6. Wappingers Creek sediment constituents (mg/Kg) above screening values

| Area/Location | Depth | tPAH | BaP | BaP OC | DBF | Phen | Sb | As | Cd | Cr | Cu | Fe | Pb | Mn | Hg | Ni | Se | Ag | Tl | Vn | Zn | CN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NYS Guidance - LEL | | 4 | --- | 1.3 | --- | --- | 2 | 6 | 0.6 | 26 | 16 | 2% | 31 | 460 | 0.15 | 16 | --- | 1 | --- | --- | 120 | 0.1 |
| NYS Guidance - SEL | | --- | --- | --- | --- | --- | 25 | 33 | 9 | 110 | 110 | 4% | 110 | 1100 | 1.3 | 50 | --- | 2.2 | --- | --- | 270 | --- |
| Alternative ecological value | | 85 | 0.44 | --- | 5.1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Background Maximum | | 5.5 | 0.6 | 0.01 | --- | --- | 3.2 | 6.3 | 1.4BJ | 27 | 90 | 3.3% | 187 | 1000 | 0.57 | 33 | 2.5 | --- | --- | 38B | 359 | 3.2 |
| Downstream section (continued) | | | | | | | | | | | | | | | | | | | | | | |
| WP-OD2 | 0-6 in | 8.3 | 0.7 | --- | --- | --- | --- | --- | 2.3 | 68 | 69 | 2.5 | 96 | --- | 1.9 | 36 | --- | --- | 2.4B | --- | 266 | --- |
| | 6-12 in | 14 | 1.6 | --- | --- | --- | --- | --- | 2.2 | 78 | 63 | 2.5 | 111 | --- | 2.5 | 31 | --- | --- | --- | --- | 250 | --- |
| | 12-22 in | 12 | --- | --- | --- | --- | --- | 16 | 4 | 351 | 55 | 2.8 | 102 | --- | 19 | 24 | --- | --- | 1.6B | --- | 442 | --- |
| WP-T2A | 0-6 in | 16 | 1.7 | --- | --- | --- | --- | --- | 1.9 | 58 | 69 | 2.8 | 86 | 633 | 1.4 | 32 | --- | --- | --- | --- | 265 | --- |
| | 6-12 in | 15 | 3.6 | --- | --- | --- | 8.9 | 7.5 | 2.8 | 119 | 46 | 2.2 | 91 | --- | 3.9 | 21 | --- | --- | --- | --- | 311 | 0.44 |
| WP-T2B | 0-6 in | 11 | --- | --- | --- | --- | --- | 6.5 | 1.5 | 34 | 50 | 3 | 106 | 506 | 0.46 | 35 | --- | --- | --- | --- | 238 | --- |
| | 6-12 in | 7.8 | --- | --- | --- | --- | --- | --- | 1.1 | 27 | 22 | 2.7 | 40 | --- | 0.17 | 26 | --- | --- | 0.86B | --- | 155 | 0.33 |
| | 12-24 in | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.3 | --- | --- | 0.18 | 20 | --- | --- | 1.5B | --- | --- | --- |
| WP-T2C | 0-6 in | 166 | 22 | --- | --- | --- | --- | 7.7 | 4.6 | 64 | 90 | 2.6 | 125 | --- | 1.7 | 37 | --- | --- | --- | --- | 470 | --- |
| | 6-12 in | 125 | 16 | --- | --- | --- | --- | 40 | 5.6 | 826 | 129 | 2.8 | 287 | --- | 33 | 29 | --- | --- | --- | --- | 588 | 1.5 |
| | 12-24 in | --- | --- | --- | --- | --- | --- | --- | --- | 31 | 18 | 2.6 | 37 | --- | --- | 23 | --- | --- | --- | --- | --- | 0.27 |
| WP-OD1 | 0-6 in | 37 | 11 | --- | --- | --- | --- | 16 | 5.8 | 247 | 89 | 2.8 | 138 | --- | 8.3 | 47 | --- | --- | 3.1B | --- | 611 | --- |
| | 6-12 in | 12 | 1.6 | --- | --- | --- | --- | 21 | 1.8 | 566 | 89 | 2.9 | 218 | --- | 20 | 29 | --- | --- | 1.7B | --- | 251 | 0.6 |
| | 12-19 in | | --- | --- | --- | --- | --- | --- | --- | --- | 23 | 2.7 | 66 | --- | --- | 26 | --- | --- | 2.2B | --- | --- | --- |
| WP-T3A | 0-6 in | 5.5 | 0.9 | --- | --- | --- | --- | 6.1 | 2.8 | 66 | 84 | 3.1 | 106 | 469 | 1.1 | 42 | --- | --- | --- | --- | 316 | --- |
| (DUP) | 0-6 in | --- | --- | --- | --- | --- | --- | 6.1 | 2.4 | 60 | 73 | 2.8 | 94 | --- | 1.3 | 38 | --- | --- | --- | --- | 281 | --- |
| | 6-12 in | 8 | 1.2 | --- | --- | --- | --- | 10 | 3.7 | 110 | 99 | 3.8 | 136 | 492 | 2.7 | 48 | --- | --- | --- | 51 | 364 | --- |
| | 12-24 in | 25 | 2.9 | --- | --- | --- | 2.4 | 30 | 5.3 | 322 | 81 | 2.8 | 160 | --- | 13 | 27 | --- | --- | --- | --- | 508 | 2.7 |
| WP-T3B | 0-6 in | 4.7 | 0.5 | --- | --- | --- | --- | --- | 1.7 | 44 | 56 | 3 | 67 | 702 | 0.77 | 31 | --- | --- | 2.3B | --- | 222 | --- |
| | 6-12 in | 4.7 | 0.7 | --- | --- | --- | --- | 8.4 | 1.5 | 159 | 53 | 3 | 94 | 495 | 0.44 | 34 | --- | --- | 2.5B | --- | 179 | --- |
| | 12-24 in | --- | --- | --- | --- | --- | --- | 6.4 | 0.61 | 33 | 29 | 3 | 188 | --- | --- | 29 | --- | --- | 2B | --- | --- | --- |
| WP-T3C | 0-6 in | --- | 0.5 | --- | --- | --- | --- | --- | 2.6 | 60 | 79 | 3.2 | 94 | 508 | 0.84 | 41 | --- | --- | --- | 42 | 269 | --- |
| | 6-11 in | 6.7 | 1 | --- | --- | --- | --- | 9.3 | 3.4 | 115 | 78 | 3.1 | 125 | 466 | 4.9 | 33 | --- | --- | --- | --- | 353 | 0.36 |
| | max | 1092 | 93 | 2 | 30 | 0.1 | 159 | 162 | 79 | 4120 | 504 | 4.3 | 1450 | 2390 | 186 | 56 | 3.5 | 1.2 | 3.3B | 51 | 6500 | 42 |

Table 4-6. Wappingers Creek sediment constituents (mg/Kg) above screening values

| Area/Location | Depth | tPAH | BaP | BaP OC | DBF | Phen | Sb | As | Cd | Cr | Cu | Fe | Pb | Mn | Hg | Ni | Se | Ag | Tl | Vn | Zn | CN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NYS Guidance - LEL | | 4 | --- | 1.3 | --- | --- | 2 | 6 | 0.6 | 26 | 16 | 2% | 31 | 460 | 0.15 | 16 | --- | 1 | --- | --- | 120 | 0.1 |
| NYS Guidance - SEL | | --- | --- | --- | --- | --- | 25 | 33 | 9 | 110 | 110 | 4% | 110 | 1100 | 1.3 | 50 | --- | 2.2 | --- | --- | 270 | --- |
| Alternative ecological value | | 85 | 0.44 | --- | 5.1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Background Maximum | | 5.5 | 0.6 | 0.01 | --- | --- | 3.2 | 6.3 | 1.4BJ | 27 | 90 | 3.3% | 187 | 1000 | 0.57 | 33 | 2.5 | --- | --- | 38B | 359 | 3.2 |

Notes:

Estimated concentration qualifiers (J) not presented; samples with blank contamination associated are qualified (B); --- = not detected above screening value or not detected.

NYS Guidance = Technical Guidance for Screening Contaminated Sediments. New York State Department of Environmental Conservation. 1999.

LEL= lowest effect screening level; SEL = severe effect screening level as defined by the NYS Guidance.

tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaP OC = BaP conc. normalized by organic carbon conc.; DBF = dibenzofuran; Phen = phenol.

Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Se = selenium; Ag = silver; Tl = thallium; Vn = vanadium; Zn = zinc; CN = cyanide.

Table 4-7. Descriptions of tidal creek bed.

| Location ID | Approx. Dist to Hudson R. (ft) | Approx. width (ft) | Description | Creek bed description |
|---|---|---|---|---|
| **Site area** | | | | |
| WP01 | 10200 | 160 | Hydro-facility dock on north side of Creek. | Rock and cobble pockets of sand. |
| WP03 | 10000 | | Upstream of East bridge. | Rock and cobble pockets of sand. |
| WP04.45 | 9860 | 100 | Sample collected downstream of East bridge. | Pocket of sand. |
| WP03-WP8 | 10000-9500 | | Adjacent to the Three Star site. | Rock and cobble. |
| WP09 | 9400 | | Several pipes located along north bank, one observed on south bank. | |
| WP10 | 9300 | | Downstream of West bridge on north side of Creek. | Sand and gravel. |
| WP-LGOUT2 | 9200 | 125 | Sample collected from north lagoon outlet area. | Coarse sand and gravel. |
| WP11 | 9200 | | Sample collected from in the vicinity of former storage tanks formerly located on north parcel. | Sand and gravel. |
| WP12 | 9100 | | Upstream of outlet of Three Star lagoon on south side of Creek. | |
| WP-MW4 | 9050 | 125 | Downstream outlet of Three Star lagoon on south side of Creek. | Coarse sand and gravel. |
| WP16 | 8700 | 100 | South side of Creek prior to Shoal Area. | |
| **Shoal area** | 10200 | | | |
| WP18 | 8400 | | | Silt and sand. |
| WP-M2 | 8300 | 250 | South side of Creek at beginning of Shoal area. | Silt and sand with some gravel. |
| WP21 | 8200 | | location of low tide seep. | |
| WP22 | 8100 | | location of low tide seep. | |
| WP-M3 | 7850 | 300 | South side of Creek upper mid-Shoal area. | Silt and sand with some gravel. |
| WP25 | 7800 | | Public works garage area. | |

Table 4-7. Descriptions of tidal creek bed.

| Location ID | Approx. Dist to Hudson R. (ft) | Approx. width (ft) | Description | Creek bed description |
|---|---|---|---|---|
| **Shoal area** (continued) | | | | |
| WP-DOT | 7700 | 375 | South side of Creek in the vicinity of the Public works garage. | Silt and coarse sand with some pebbles. |
| WP-29A | 7550 | | Site side of Creek mid-Shoal area. | Silt and sand turning to course sand and some gravel below. |
| WP29 | 7400 | | Sample collected from shoal near center of Creek and boat launch. | Silt and sand. |
| WP-CKOUT | 7100 | 330 | South side of Creek at an outlet of a tributary. | Sand and silt with some pebbles. |
| **Embayment** | | | | |
| WP-PL2 | 7050 | | North portion of embayment. | Silt and organic matter. |
| WP-PL3 | 6900 | | Northwest portion of the embayment. | Silt and organic matter. |
| WP-PL1 | 6500 | | Southwest portion of the embayment. | Silt and organic matter with some clay. |
| WP-PL | 6500 | | Approximate center of embayment. | Silt and organic matter with some clay. |
| **Downstream section** | | | | |
| WP-OD3 | 6950 | 200 | West shore of creek near opening of the embayment. | Silt and organic matter mixing with sand and gravel below. |
| WP37 | 6600 | | | Firm Silt. |
| WP-T1A | 5350 | 580 | North shore of downstream section. | Silt and organic matter to sand and gravel below. |
| WP-T1C | 5200 | 580 | South shore of downstream section. | Silt and organic matter with traces of gravel. |
| WP-T2B | 3750 | 800 | South side of Creek midway to shore. | Silt and organic matter shallow to sand and gravel below. |
| WP-OD2 | 3700 | | North side of Creek near island. | Silt and organic matter turning to silt and sand with traces of gravel. |
| WP-T2C | 3650 | | Near south shore. | Silt to silt and gravel below. |
| WP-OD1 | 1500 | 500 | North side of Creek midway to shore; north of Rt. 28 bridge. | Silt with some organics. |
| WP-T3A | 1000 | | North shore of Creek in the vicinity of the Rt. 28 bridge. | Silt with some organic matter to silt and sand below. |
| WP-T3B | 800 | 580 | Appproximate center of Creek downstream of Rt. 28 bridge. | Silt with some organic matter to silt with traces of sand below. |
| WP-T3C | 0 | | South shore of Creek at confluence with Hudson River. | Silt with some organic matter with traces of sand and gravel below. |

Table 4-8. Wappingers Creek sediment results

| | Surface sediment (30 samples total) | | Deeper sediment (21 locations total) | |
|---|---|---|---|---|
| Concentration range | Parameter | Description | Parameter | Description |
| Constituents over 50 times SEL screening values | | | Mercury | Mercury in subsurface sediment of the shoal area (WP-DOT) and embayment (WP-PL) far exceeded surface sediment concentrations. The maximum concentrations of mercury at both of these two areas were detected in similar depth intervals of approximately 6- to 12-inches, and at similar concentrations of approximately 180 mg/kg, which is approximately 140 times the SEL of 1.3 mg/Kg. In total, 17 of the 21 locations where subsurface sediment samples were collected from also contained |

Table 4-8. Wappingers Creek sediment results

| Concentration range | Surface sediment (30 samples total) Parameter | Description | Deeper sediment (21 locations total) Parameter | Description |
|---|---|---|---|---|
| Constituents 20 to 50 times SEL Screening value | Mercury | The maximum levels of mercury in surface sediment were detected in two areas consisting of the shoal area (WP-29) and embayment (WP-PL) (Figure XX). At those two locations, the mercury in surface sediment was 32 and 17 mg/Kg, respectively which is approximately 25 and 13 times the SEL, respectively. In addition, 11 other samples of surface sediment contained mercury above the SEL of 1.3 mg/Kg from locations in the vicinity of the embayment (WP-PL1, WP-PL2, WP-PL3), the shoal (WP-29A, WP-CK OUT), and downstream locations along both shores (WP-T1A, WP-T1C, WP-OD2, WP-T2A, WP-T2C, and WP-OD1). | Chromium | The maximum total chromium in subsurface sediment of 4,120 mg/Kg was observed in the shoal area (WP-29), a level that is approximately 38 times the SEL screening value of 110 mg/Kg. Similar levels of total chromium were also observed in subsurface sediment collected from the embayment (WP-PL). Eighteen of the 21 locations where subsurface sediment was sampled in the creek contained total chromium above the SEL screening value. The maximum concentration of total chromium in subsurface sediment exceeded that of surface sediment. Hexavalent chromium, the more toxic form of chromium on which the SEL screening value is based, was not detected. |
| | | | Zinc | The maximum level of zinc in subsurface sediment of 6,500 mg/Kg was observed in the shoal area (WP-29A), a level that is approximately 24 times the SEL screening value of 270 mg/Kg. The maximum background concentration of 359 mg/Kg was also above the SEL screening value. Seventeen of the 21 locations where subsurface sediment was sampled in the creek contained zinc above the maximum background level and the SEL screening value. The maximum subsurface sediment concentration of zinc |

Table 4-8. Wappingers Creek sediment results

| | Surface sediment (30 samples total) | | Deeper sediment (21 locations total) | |
|---|---|---|---|---|
| Concentration range | Parameter | Description | Parameter | Description |
| Constituents 10 to 20 times SEL screening value or cyanide levels 10 to 20 times maximum background | Lead | The maximum level of lead in surface sediment was detected in the vicinity of the lagoon outlet (WP-MW4), at 1,450 mg/Kg, which is approximately 13 times the SEL. Six other samples of surface sediment collected from locations in the vicinity of the lagoon outlet (LG-OUT, WP-11A), the shoal (WP-29), and the embayment (WP-PL, WP-PL2, WP-PL3) also contained lead above the background maximum of 187 mg/Kg and the SEL of 110 mg/Kg. Ten additional locations contained sediment with lead that exceeded the SEL, but within the maximum concentration of background samples (Section 4.1). | Cyanide | The maximum concentration of total cyanide in subsurface sediment of 42 mg/Kg was observed in the embayment (WP-PL), a level that is approximately 13 times the maximum background level of 3.2 mg/Kg that was observed. Similar levels of total cyanide were also observed in subsurface sediment collected from the shoal area (WP-29A). Four of the 21 locations where subsurface sediment samples were collected contained total cyanide above the maximum background levels observed. The maximum subsurface sediment concentration of total cyanide exceeded that of surface sediment. Amenable cyanide, the biologically available fraction of cyanide, was not detected. No SEL screening value is included in New York State guidance for screening sediment. It is recognized that concentrations compared to background levels are not directly comparable to other constituents for which SEL screening values apply. |

Table 4-8. Wappingers Creek sediment results

| Concentration range | Surface sediment (30 samples total) Parameter | Description | Deeper sediment (21 locations total) Parameter | Description |
|---|---|---|---|---|
| Constituents frequently above 1 to 10 times SEL Screening value | Zinc | Zinc was observed above the SEL of 270 mg/Kg in 11 samples collected from the lagoon outlet (LG-OUT), the shoal (WP-M2, WP-M3, WP-29, WP-29A, WP-DOT and WP-CKOUT), and downstream area (WP-T1C, WP-T2C, WP-OD2, and WP-T3A). The maximum was observed in sediment collected from the shoal (WP-29) at 1,980 mg/Kg, which is approximately 7 times the SEL. In addition, three samples (WPT-2A, WP-OD2, and WP-T3C) contained zinc above background levels and the LEL. | Lead | Lead was observed above the SEL of 110 mg/Kg and maximum background level of 187 mg/Kg in 15 of the 21 subsurface sediment samples collected for the RI. The maximum of 1,050 mg/Kg observed in subsurface sediment was collected from the shoal area (WP-29A). The maximum observed in the subsurface sediment is approximately 6 times the maximum background level. The concentration of lead in surface sediment collected from in the vicinity of the lagoon outlet (WP-MW4) exceeded the maximum concentration observed in subsurface sediment. |
| | Chromium | Chromium was observed above the SEL of 110 mg/Kg in five samples collected from in the vicinity of the shoal (WP-29), the embayment (WP-PL, WP-WP1, WP-PL2, and WP-WP3), and the downstream area (WP-OD1). The maximum concentration of chromium in surface sediment was observed in the embayment (WP-PL) at 544 mg/Kg, which is approximately 5 times the SEL. In addition, eleven samples collected from the shoal area (WP-29A, WP-DOT, and WP-M2) and downstream area (WP-T1A, WP-T1C, WP-OD2, WP-T2A, WP-T2C, WP-T3A, WP-T3B, WP-T3C) contained chromium above background levels and the LEL screening | Copper | Copper was observed above the SEL of 110 mg/Kg in 10 of 21 subsurface locations where sediment samples were collected for the RI. The maximum of 504 mg/Kg observed in the shoal area (WP-29A), was approximately five times the SEL screening value. The maximum subsurface sediment concentration of copper exceeded that of surface sediment. |

Table 4-8. Wappingers Creek sediment results

| | Surface sediment (30 samples total) | | Deeper sediment (21 locations total) | |
|---|---|---|---|---|
| Concentration range | Parameter | Description | Parameter | Description |
| Constituents frequently above 1 to 10 times SEL Screening value | Copper | Copper was observed above the SEL of 110 mg/Kg in six samples collected from in the vicinity of the lagoon (WP-11A), the shoal (WP-29, WP-CK0UT), and the embayment (WP-PL, WP-PL2, and WP-PL3). The maximum of 183 mg/Kg, which is approximately 1.7 times the SEL, was observed in surface sediment collected from the embayment (WP-PL). Other locations were within background | | |

Table 4-8. Wappingers Creek sediment results

| Concentration range | Surface sediment (30 samples total) Parameter | Description | Deeper sediment (21 locations total) Parameter | Description |
|---|---|---|---|---|
| Other constituents detected less frequently in the range of 1 to 10 times SEL values | Antimony | Antimony was observed above the SEL of 25 mg/Kg in two samples consisting of one location in the vicinity of the shoal (WP-29) and the downstream area along the east shore (WP-T1C). The maximum concentration of antimony observed was 159 mg/Kg in the vicinity of the shoal (WP-29), which is approximately 6 times the SEL. In addition, two other samples from the shoal area (WP-29A and WP-DOT) contained antimony above the LEL. Antimony was not present in background samples (Section 4.1). | Cadmium | Cadmium was observed above the SEL of 9 mg/Kg in six of the 21 subsurface locations were sediment samples were collected for the RI. The maximum of 79 mg/Kg observed in the shoal area (WP-29A), was approximately nine times the SEL screening value. The maximum subsurface sediment concentration of cadmium exceeded that of surface sediment. |
| | Cadmium | Cadmium was observed above the SEL of 9 mg/Kg in one sample collected from the vicinity of the shoal (WP-29) at a level of 27 mg/Kg which is approximately 3 times the SEL. In addition, two other samples collected from the shoal area (WP-29A and WP-DOT) and one sample collected from the downstream area (WP-T1C) contained cadmium above background levels and the LEL screening value. | Arsenic | Arsenic was observed above the SEL of 33 mg/Kg in six of the 21 subsurface locations where sediment samples were collected for the RI. The maximum of 162 mg/Kg observed in subsurface sediment collected from the shoal area (WP-29A), was approximately five times the SEL screening value. The maximum subsurface sediment concentration of arsenic exceeded that of surface sediment. |

Table 4-8. Wappingers Creek sediment results

| Concentration range | Surface sediment (30 samples total) Parameter | Description | Deeper sediment (21 locations total) Parameter | Description |
|---|---|---|---|---|
| Other constituents detected less frequently in the range of 1 to 10 times SEL values | Manganese | Manganese was observed in two samples above the SEL of 1100 mg/Kg consisting of one location in the vicinity of the Site (WP-4.45-9) and the other in the vicinity of the shoal (WP-CKOUT). The maximum concentration of 2390 mg/Kg was observed in vicinity of the shoal (WP-WP-CKOUT), a level that is approximately 2 times the SEL. Manganese levels in other samples were comparable to background levels. | Antimony | Antimony was observed above the SEL of 25 mg/Kg in four of 21 subsurface locations where sediment samples were collected for the RI. The maximum concentration of antimony detected in subsurface sediment, 162 mg/Kg, was observed in the shoal area (WP-29A). The maximum was approximately four times the SEL screening value. The maximum subsurface sediment concentration of antimony was approximately equivalent to the maximum concentration observed in surface sediment from the |
| Constituents at levels similar to SEL screening values. | Iron | Iron was observed at 4.3% in the vicinity of the Site, a level that is comparable to the SEL of 4.0%. Other locations were similar to background levels which included a maximum of 3.3%. | Iron | Iron was observed up to 4.2% in the shoal area (WP-29A), a level that is comparable to the SEL of 4.0% and levels observed in surface sediment in the vicinity of the site. Other locations were similar to background levels which included a maximum of |
| | Nickel | Nickel was observed at 56 mg/Kg in the vicinity of the lagoon outlet (WP-LGOUT2), a level that is comparable to the SEL of 50 mg/Kg. Twelve other locations contained nickel above the maximum background level of 33 mg/Kg. | | |

Table 4-8. Wappingers Creek sediment results

| | Surface sediment (30 samples total) | | Deeper sediment (21 locations total) | |
|---|---|---|---|---|
| Concentration range | Parameter | Description | Parameter | Description |
| Constituents above LEL screening values and background levels. | Arsenic | Arsenic was observed above LEL screening value of 6 mg/Kg in 16 samples of surface sediment. The highest levels detected in surface sediment were approximately 20 mg/Kg in the vicinity of the site (WP-09) and at the shoal (WP-29). | | |
| | Cyanide | Cyanide was detected above the maximum background level of 3.2 mg/Kg in three samples consisting of one each collected from the shoal (WP 29), the embayment (WP-PL), and downstream area (WP-T1C). The shoal area (WP-29) contained the highest level of cyanide observed at 28 mg/Kg. The biologically available fraction of cyanide, measured as amenable cyanide, was not detected. A cyanide screening value of 0.1 mg/Kg obtained from Eisler (1991) was below the maximum background levels observed, as discussed previously (Section 4.1). | | |

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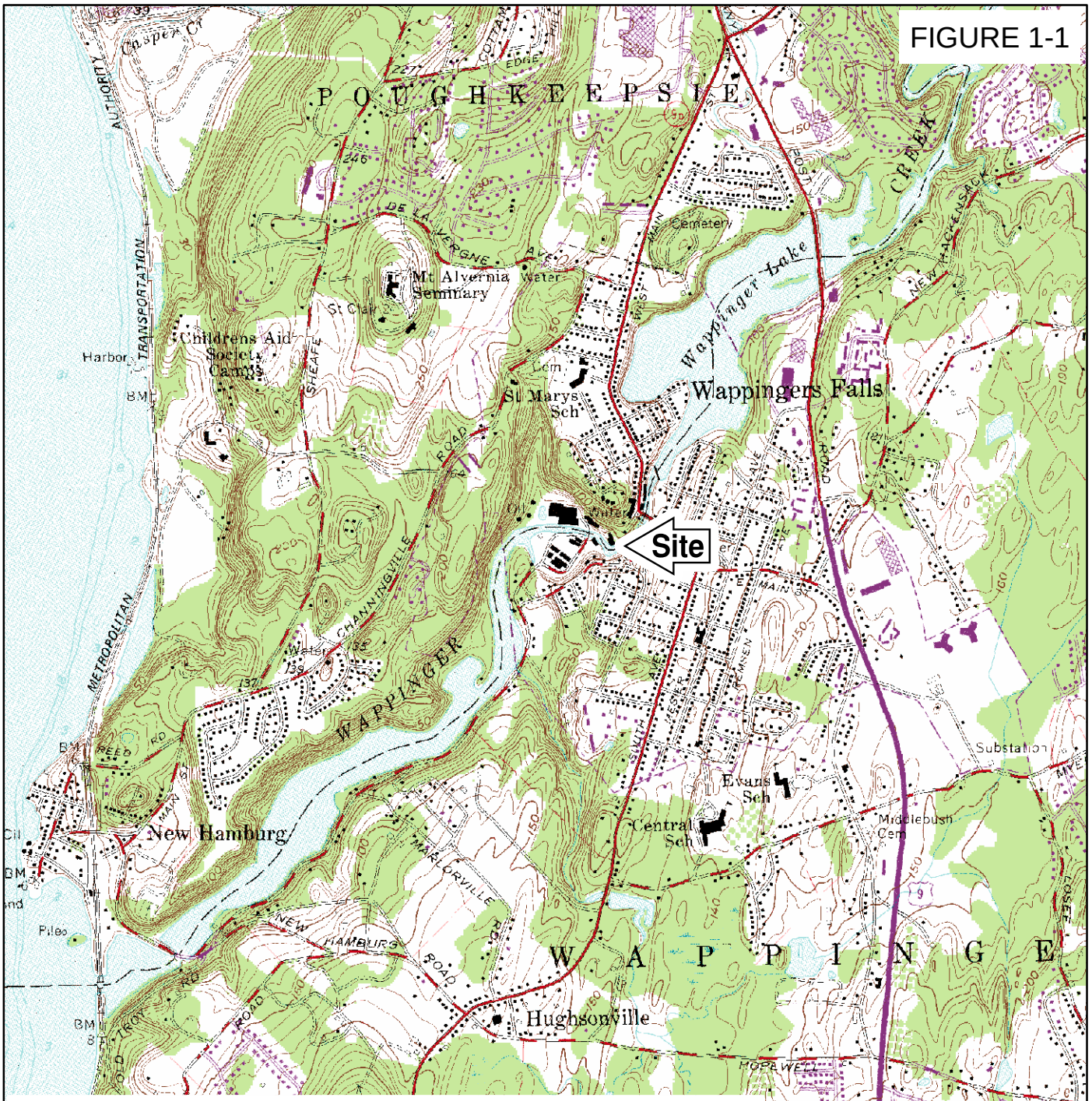
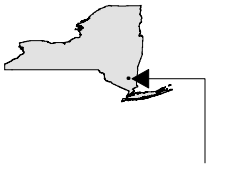



PLOT DATE: 02/09/05 DIV. 84 JPS

ADAPTED FROM: WAPPINGER FALLS,NY USGS QUADRANGLE



QUADRANGLE LOCATION

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGERS FALLS, NEW YORK

## SITE LOCATION

0 1,000 2,000 4,000 6,000 8,000

Feet

10653.27258
NOVEMBER 2007

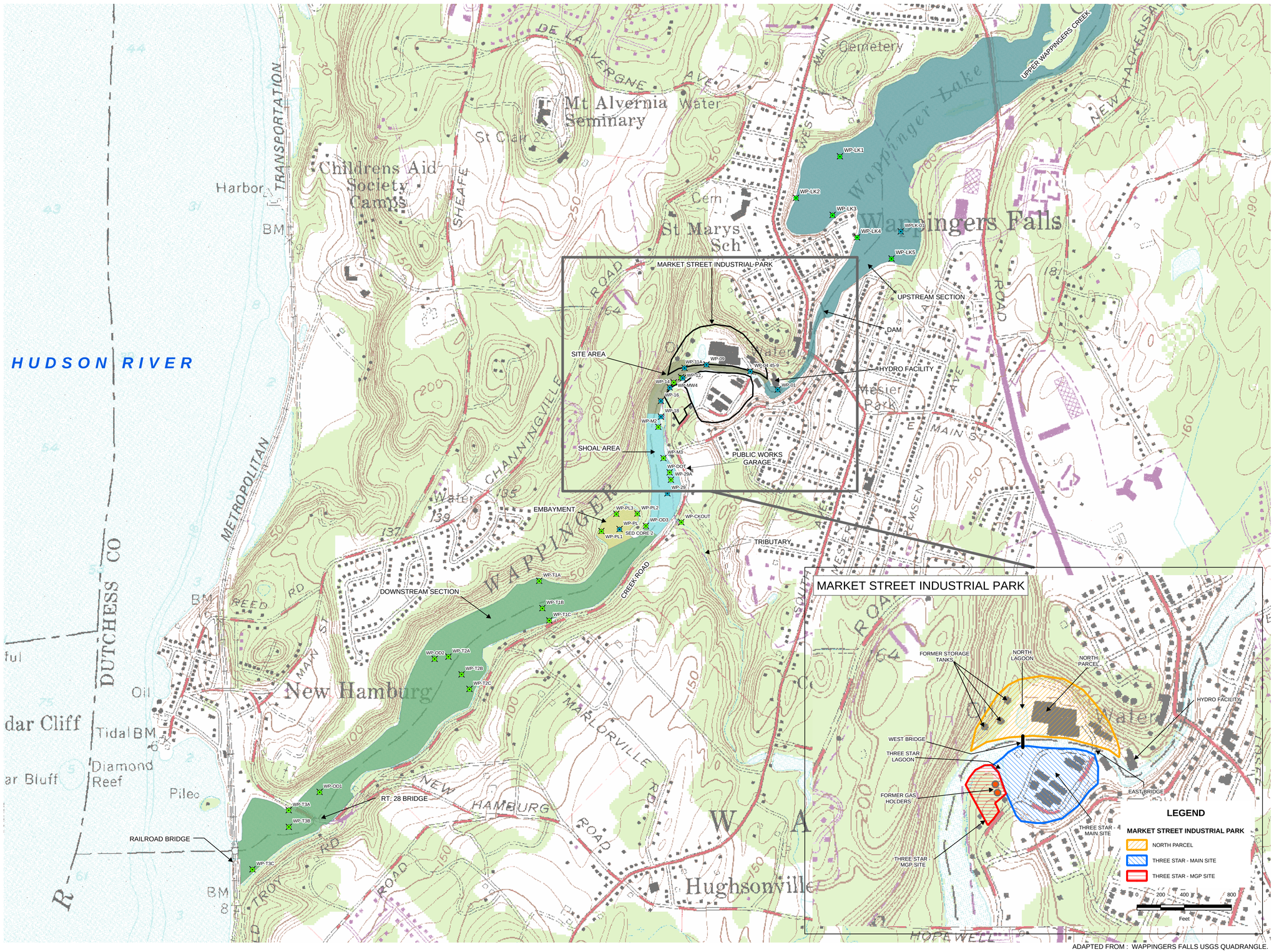
1:24,000



O'BRIEN & GERE ENGINEERS, INC.

I:\PROJECTS\DIV 82\10653\27258\DWG\SITE_PLAN.MXD

# FIGURE 1-2




ADAPTED FROM : WAPPINGERS FALLS USGS QUADRANGLE.

## Legend

**SAMPLE LOCATIONS**

- 2001 SEDIMENT SAMPLE
- 2003 SEDIMENT SAMPLE

**STREAM SECTIONS**

- UPSTREAM SECTION
- SITE AREA
- SHOAL AREA
- EMBAYMENT
- DOWNSTREAM SECTION

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGERS FALLS, NEW YORK

# SITE PLAN AND SEDIMENT SAMPLE LOCATIONS

0 300 600 1,200 1,800
Feet

NOVEMBER 2007
27258.008.009

O'BRIEN & GERE ENGINEERS, INC.

PLOT DATE: 02/03/05 DIV. 84 JPS

I:\DIV82\PROJECTS\10653\27258\DWG\27258002A_10-22-07.DWG acb

FIGURE 1–3

Key to building uses at the site.

| *Building No.* | *Company* | *Description of activities* |
|---|---|---|
| P | Page Print | printing, including photographic |
| 11 | Dutchess Bleachery<br>J. L. Rie Co. | boiler house, auto parking<br>injection molding – plastics |
| 12 | Dutchess Bleachery<br>J.L. Rie Co. | case storage<br>injection molding – plastics |
| 15 | Dutchess Bleachery<br><br>Three Star Anodizing | lapping, packaging<br>sewing, sheet tearing, case storage<br>paper storage |
| 16 | Dutchess Bleachery<br>Three Star Anodizing | store house<br>metal anodizing |
| 17 | Dutchess Bleachery<br>Three Star Anodizing | store house<br>metal anodizing |
| 21 | Dutchess Bleachery<br>Three Star Anodizing<br>Sears Mail Order | salvage department, paper storage<br>miscellaneous storage<br>mail order store |
| 22 | Dutchess Bleachery<br><br>Three Star Anodizing | miscellaneous storage<br>auto parking<br>miscellaneous storage |
| A-C | Axton-Cross<br>Fabricare | chemical storage and repackaging<br>unknown |

Some other industrial uses at site:
coal storage, and felt hat, ammunition, and leather manufacturing.

References: Sanborn maps 1945 and 1960; EA 1986; Popper 1991.

LEGEND

21 BUILDING IDENTIFICATION

(11) FORMER BUILDING LOCATION

SUSPECTED FILL AREAS

FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGERS FALLS, NEW YORK

THREE STAR SITE

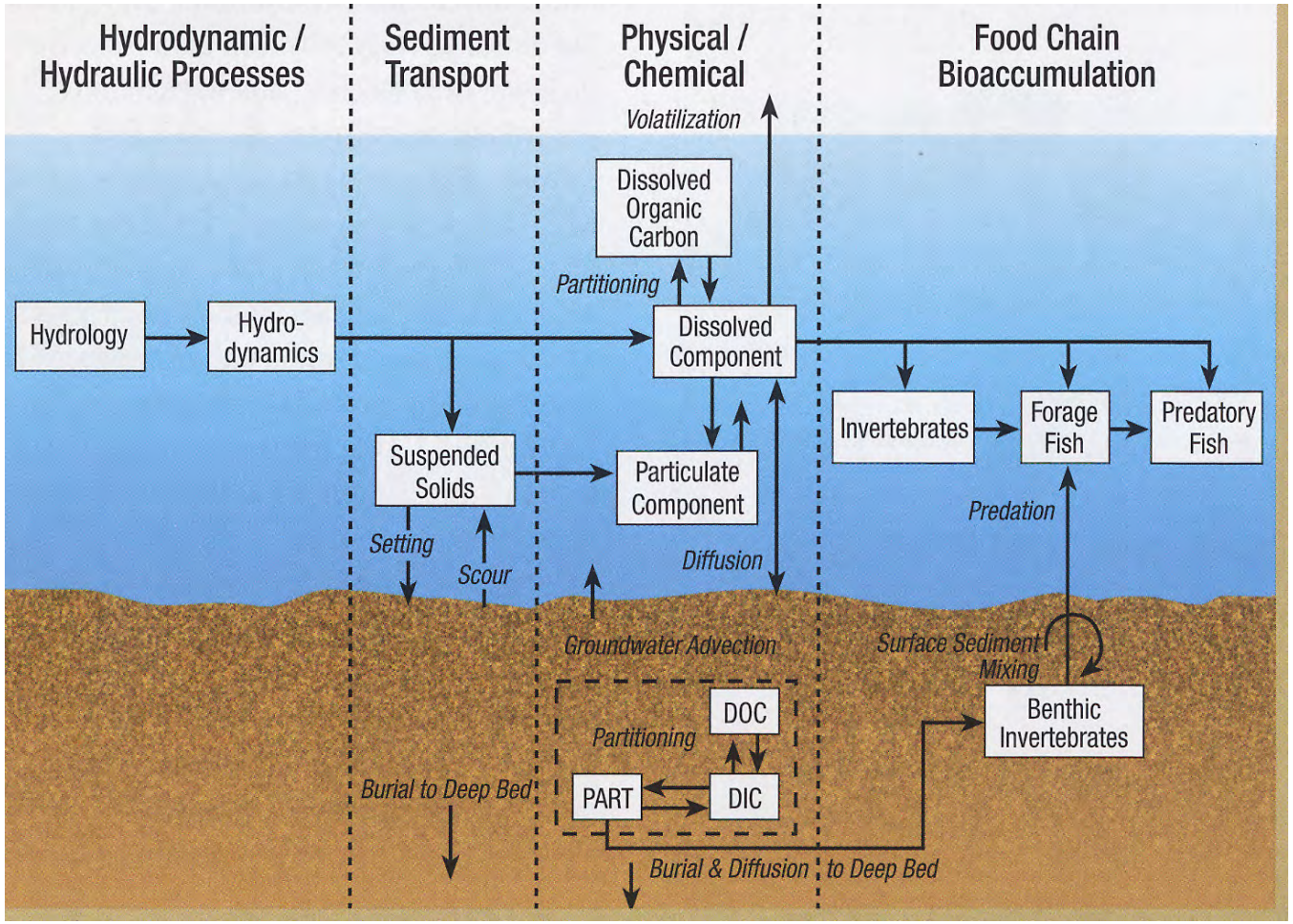
100 0 100
1"=100'

FILE NO. 10653.27258
NOVEMBER 2007

O'BRIEN & GERE
ENGINEERS INC.

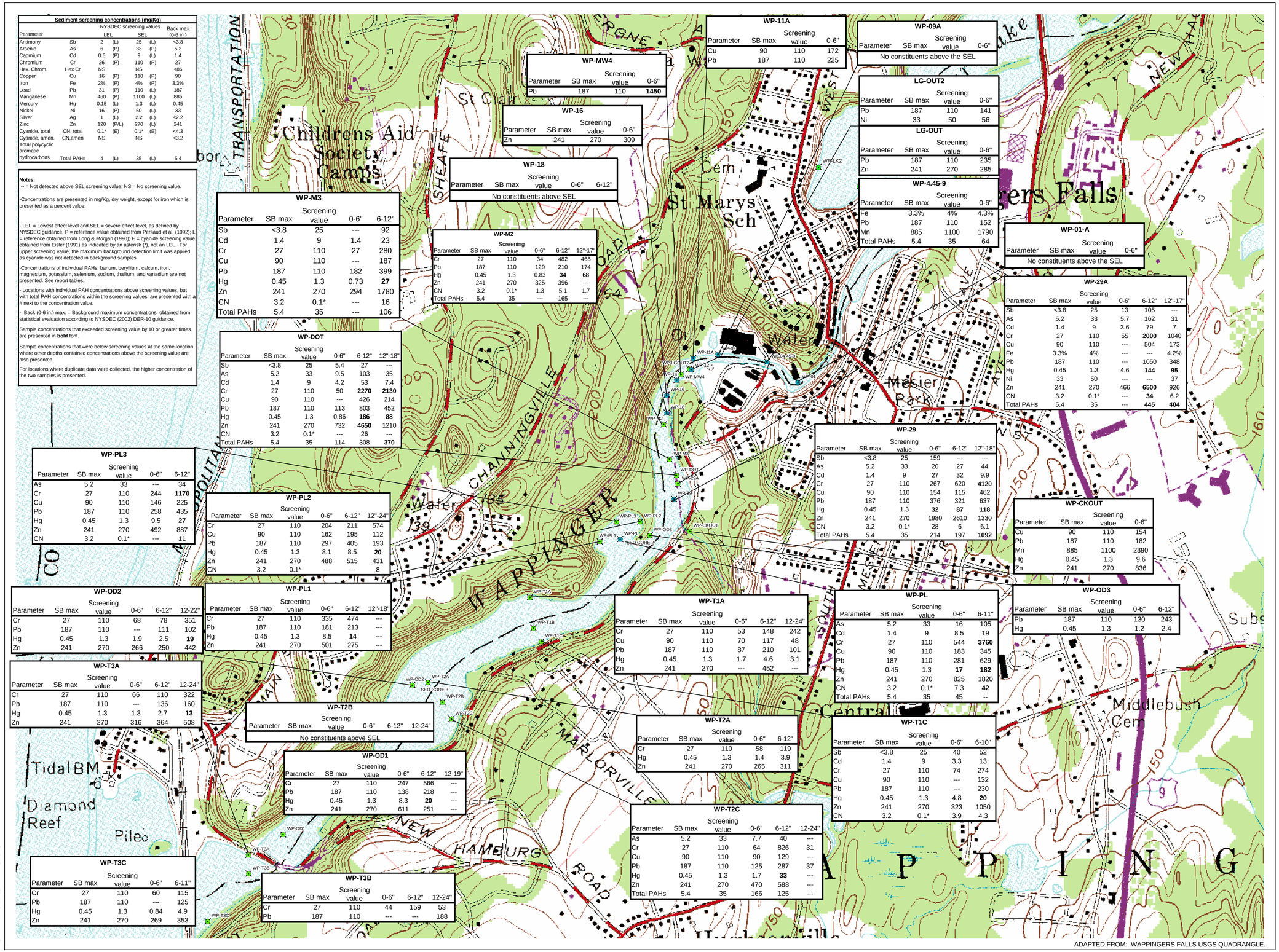
9/26/2007 DIV 71 LSR

**Figure 1-4. Conceptualization of fate and transport of constituents in an aquatic system**



I:\PROJECTS\DIV 82\10653\27258\DWG\CREEK_LAKE2.MXD

# FIGURE 4-1




**Sediment screening concentrations (mg/Kg)**

| Parameter | | NYSDEC screening values LEL | | SEL | | Back max. (0-6 in.) |
|---|---|---|---|---|---|---|
| Antimony | Sb | 2 | (L) | 25 | (L) | <3.8 |
| Arsenic | As | 6 | (P) | 33 | (P) | 5.2 |
| Cadmium | Cd | 0.6 | (P) | 9 | (L) | 1.4 |
| Chromium | Cr | 26 | (P) | 110 | (P) | 27 |
| Hex. Chrom. | Hex Cr | NS | | NS | | <86 |
| Copper | Cu | 16 | (P) | 110 | (P) | 90 |
| Iron | Fe | 2% | (P) | 4% | (P) | 3.3% |
| Lead | Pb | 31 | (P) | 110 | (L) | 187 |
| Manganese | Mn | 460 | (P) | 1100 | (L) | 885 |
| Mercury | Hg | 0.15 | (L) | 1.3 | (L) | 0.45 |
| Nickel | Ni | 16 | (P) | 50 | (L) | 33 |
| Silver | Ag | 1 | (L) | 2.2 | (L) | <2.2 |
| Zinc | Zn | 120 | (P/L) | 270 | (L) | 241 |
| Cyanide, total | CN, total | 0.1* | (E) | 0.1* | (E) | <4.3 |
| Cyanide, amen. | CN,amen | NS | | NS | | <3.2 |
| Total polycyclic aromatic hydrocarbons | Total PAHs | 4 | (L) | 35 | (L) | 5.4 |

**Notes:**
-- = Not detected above SEL screening value; NS = No screening value.

-Concentrations are presented in mg/Kg, dry weight, except for iron which is presented as a percent value.

- LEL = Lowest effect level and SEL = severe effect level, as defined by NYSDEC guidance. P = reference value obtained from Persaud et al. (1992); L = reference obtained from Long & Morgan (1990); E = cyanide screening value obtained from Eisler (1991) as indicated by an asterisk (*), not an LEL. For upper screening value, the maximum background detection limit was applied, as cyanide was not detected in background samples.

-Concentrations of individual PAHs, barium, beryllium, calcum, iron, magnesium, potassium, selenium, sodium, thallium, and vanadium are not presented. See report tables.

- Locations with individual PAH concentrations above screening values, but with total PAH concentrations within the screening values, are presented with a # next to the concentration value.

- Back (0-6 in.) max. = Background maximum concentrations obtained from statistical evaluation according to NYSDEC (2002) DER-10 guidance.

Sample concentrations that exceeded screening value by 10 or greater times are presented in **bold** font.

Sample concentrations that were below screening values at the same location where other depths contained concentrations above the screening value are also presented.

For locations where duplicate data were collected, the higher concentration of the two samples is presented.

**WP-11A**

| Parameter | SB max | Screening value | 0-6" |
|---|---|---|---|
| Cu | 90 | 110 | 172 |
| Pb | 187 | 110 | 225 |

**WP-09A**

| Parameter | SB max | Screening value | 0-6" |
|---|---|---|---|
| No constituents above the SEL | | | |

**WP-MW4**

| Parameter | SB max | Screening value | 0-6" |
|---|---|---|---|
| Pb | 187 | 110 | **1450** |

**WP-16**

| Parameter | SB max | Screening value | 0-6" |
|---|---|---|---|
| Zn | 241 | 270 | 309 |

**LG-OUT2**

| Parameter | SB max | Screening value | 0-6" |
|---|---|---|---|
| Pb | 187 | 110 | 141 |
| Ni | 33 | 50 | 56 |

**LG-OUT**

| Parameter | SB max | Screening value | 0-6" |
|---|---|---|---|
| Pb | 187 | 110 | 235 |
| Zn | 241 | 270 | 285 |

**WP-18**

| Parameter | SB max | Screening value | 0-6" | 6-12" |
|---|---|---|---|---|
| No constituents above SEL | | | | |

**WP-4.45-9**

| Parameter | SB max | Screening value | 0-6" |
|---|---|---|---|
| Fe | 3.3% | 4% | 4.3% |
| Pb | 187 | 110 | 152 |
| Mn | 885 | 1100 | 1790 |
| Total PAHs | 5.4 | 35 | 64 |

**WP-01-A**

| Parameter | SB max | Screening value | 0-6" |
|---|---|---|---|
| No constituents above the SEL | | | |

**WP-M3**

| Parameter | SB max | Screening value | 0-6" | 6-12" |
|---|---|---|---|---|
| Sb | <3.8 | 25 | --- | 92 |
| Cd | 1.4 | 9 | 1.4 | 23 |
| Cr | 27 | 110 | 27 | 280 |
| Cu | 90 | 110 | --- | 187 |
| Pb | 187 | 110 | 182 | 399 |
| Hg | 0.45 | 1.3 | 0.73 | **27** |
| Zn | 241 | 270 | 294 | 1780 |
| CN | 3.2 | 0.1* | --- | 16 |
| Total PAHs | 5.4 | 35 | --- | 106 |

**WP-M2**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12"-17" |
|---|---|---|---|---|---|
| Cr | 27 | 110 | 34 | 482 | 465 |
| Pb | 187 | 110 | 129 | 210 | 174 |
| Hg | 0.45 | 1.3 | 0.83 | **34** | **68** |
| Zn | 241 | 270 | 325 | 396 | --- |
| CN | 3.2 | 0.1* | 1.3 | 5.1 | 1.7 |
| Total PAHs | 5.4 | 35 | --- | 165 | --- |

**WP-29A**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12"-17" |
|---|---|---|---|---|---|
| Sb | <3.8 | 25 | 13 | 105 | --- |
| As | 5.2 | 33 | 5.7 | 162 | 31 |
| Cd | 1.4 | 9 | 3.6 | 79 | 7 |
| Cr | 27 | 110 | 55 | **2000** | 1040 |
| Cu | 90 | 110 | --- | 504 | 173 |
| Fe | 3.3% | 4% | --- | --- | 4.2% |
| Pb | 187 | 110 | --- | 1050 | 348 |
| Hg | 0.45 | 1.3 | 4.6 | **144** | **95** |
| Ni | 33 | 50 | --- | --- | 37 |
| Zn | 241 | 270 | 466 | **6500** | 926 |
| CN | 3.2 | 0.1* | --- | **34** | 6.2 |
| Total PAHs | 5.4 | 35 | --- | **445** | **404** |

**WP-DOT**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12"-18" |
|---|---|---|---|---|---|
| Sb | <3.8 | 25 | 5.4 | 27 | --- |
| As | 5.2 | 33 | 9.5 | 103 | 35 |
| Cd | 1.4 | 9 | 4.2 | 53 | 7.4 |
| Cr | 27 | 110 | 50 | **2270** | **2130** |
| Cu | 90 | 110 | --- | 426 | 214 |
| Pb | 187 | 110 | 113 | 803 | 452 |
| Hg | 0.45 | 1.3 | 0.86 | **186** | **88** |
| Zn | 241 | 270 | 732 | **4650** | 1210 |
| CN | 3.2 | 0.1* | --- | 26 | --- |
| Total PAHs | 5.4 | 35 | 114 | 308 | **370** |

**WP-29**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12"-18" |
|---|---|---|---|---|---|
| Sb | <3.8 | 25 | 159 | --- | --- |
| As | 5.2 | 33 | 20 | 27 | 44 |
| Cd | 1.4 | 9 | 27 | 32 | 9.9 |
| Cr | 27 | 110 | 267 | 620 | **4120** |
| Cu | 90 | 110 | 154 | 115 | 462 |
| Pb | 187 | 110 | 376 | 321 | 637 |
| Hg | 0.45 | 1.3 | **32** | **87** | **118** |
| Zn | 241 | 270 | 1980 | 2610 | 1330 |
| CN | 3.2 | 0.1* | 28 | 6 | 6.1 |
| Total PAHs | 5.4 | 35 | 214 | 197 | **1092** |

**WP-PL3**

| Parameter | SB max | Screening value | 0-6" | 6-12" |
|---|---|---|---|---|
| As | 5.2 | 33 | --- | 34 |
| Cr | 27 | 110 | 244 | **1170** |
| Cu | 90 | 110 | 146 | 225 |
| Pb | 187 | 110 | 258 | 435 |
| Hg | 0.45 | 1.3 | 9.5 | **27** |
| Zn | 241 | 270 | 492 | 887 |
| CN | 3.2 | 0.1* | --- | 11 |

**WP-PL2**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12"-24" |
|---|---|---|---|---|---|
| Cr | 27 | 110 | 204 | 211 | 574 |
| Cu | 90 | 110 | 162 | 195 | 112 |
| Pb | 187 | 110 | 297 | 405 | 193 |
| Hg | 0.45 | 1.3 | 8.1 | 8.5 | **20** |
| Zn | 241 | 270 | 488 | 515 | 431 |
| CN | 3.2 | 0.1* | --- | --- | 8 |

**WP-CKOUT**

| Parameter | SB max | Screening value | 0-6" |
|---|---|---|---|
| Cu | 90 | 110 | 154 |
| Pb | 187 | 110 | 182 |
| Mn | 885 | 1100 | 2390 |
| Hg | 0.45 | 1.3 | 9.6 |
| Zn | 241 | 270 | 836 |

**WP-OD2**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12-22" |
|---|---|---|---|---|---|
| Cr | 27 | 110 | 68 | 78 | 351 |
| Pb | 187 | 110 | --- | 111 | 102 |
| Hg | 0.45 | 1.3 | 1.9 | 2.5 | **19** |
| Zn | 241 | 270 | 266 | 250 | 442 |

**WP-PL1**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12"-18" |
|---|---|---|---|---|---|
| Cr | 27 | 110 | 335 | 474 | --- |
| Pb | 187 | 110 | 181 | 213 | --- |
| Hg | 0.45 | 1.3 | 8.5 | **14** | --- |
| Zn | 241 | 270 | 501 | 275 | --- |

**WP-T1A**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12-24" |
|---|---|---|---|---|---|
| Cr | 27 | 110 | 53 | 148 | 242 |
| Cu | 90 | 110 | 70 | 117 | 48 |
| Pb | 187 | 110 | 87 | 210 | 101 |
| Hg | 0.45 | 1.3 | 1.7 | 4.6 | 3.1 |
| Zn | 241 | 270 | --- | 452 | --- |

**WP-PL**

| Parameter | SB max | Screening value | 0-6" | 6-11" |
|---|---|---|---|---|
| As | 5.2 | 33 | 16 | 105 |
| Cd | 1.4 | 9 | 8.5 | 19 |
| Cr | 27 | 110 | 544 | **3760** |
| Cu | 90 | 110 | 183 | 345 |
| Pb | 187 | 110 | 281 | 629 |
| Hg | 0.45 | 1.3 | **17** | **182** |
| Zn | 241 | 270 | 825 | 1820 |
| CN | 3.2 | 0.1* | 7.3 | **42** |
| Total PAHs | 5.4 | 35 | 45 | -- |

**WP-OD3**

| Parameter | SB max | Screening value | 0-6" | 6-12" |
|---|---|---|---|---|
| Pb | 187 | 110 | 130 | 243 |
| Hg | 0.45 | 1.3 | 1.2 | 2.4 |

**WP-T3A**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12-24" |
|---|---|---|---|---|---|
| Cr | 27 | 110 | 66 | 110 | 322 |
| Pb | 187 | 110 | --- | 136 | 160 |
| Hg | 0.45 | 1.3 | 1.3 | 2.7 | **13** |
| Zn | 241 | 270 | 316 | 364 | 508 |

**WP-T2B**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12-24" |
|---|---|---|---|---|---|
| No constituents above SEL | | | | | |

**WP-T2A**

| Parameter | SB max | Screening value | 0-6" | 6-12" |
|---|---|---|---|---|
| Cr | 27 | 110 | 58 | 119 |
| Hg | 0.45 | 1.3 | 1.4 | 3.9 |
| Zn | 241 | 270 | 265 | 311 |

**WP-T1C**

| Parameter | SB max | Screening value | 0-6" | 6-10" |
|---|---|---|---|---|
| Sb | <3.8 | 25 | 40 | 52 |
| Cd | 1.4 | 9 | 3.3 | 13 |
| Cr | 27 | 110 | 74 | 274 |
| Cu | 90 | 110 | --- | 132 |
| Pb | 187 | 110 | --- | 230 |
| Hg | 0.45 | 1.3 | 4.8 | **20** |
| Zn | 241 | 270 | 323 | 1050 |
| CN | 3.2 | 0.1* | 3.9 | 4.3 |

**WP-OD1**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12-19" |
|---|---|---|---|---|---|
| Cr | 27 | 110 | 247 | 566 | --- |
| Pb | 187 | 110 | 138 | 218 | --- |
| Hg | 0.45 | 1.3 | 8.3 | **20** | --- |
| Zn | 241 | 270 | 611 | 251 | --- |

**WP-T2C**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12-24" |
|---|---|---|---|---|---|
| As | 5.2 | 33 | 7.7 | 40 | --- |
| Cr | 27 | 110 | 64 | 826 | 31 |
| Cu | 90 | 110 | 90 | 129 | --- |
| Pb | 187 | 110 | 125 | 287 | 37 |
| Hg | 0.45 | 1.3 | 1.7 | **33** | --- |
| Zn | 241 | 270 | 470 | 588 | --- |
| Total PAHs | 5.4 | 35 | 166 | 125 | --- |

**WP-T3C**

| Parameter | SB max | Screening value | 0-6" | 6-11" |
|---|---|---|---|---|
| Cr | 27 | 110 | 60 | 115 |
| Pb | 187 | 110 | --- | 125 |
| Hg | 0.45 | 1.3 | 0.84 | 4.9 |
| Zn | 241 | 270 | 269 | 353 |

**WP-T3B**

| Parameter | SB max | Screening value | 0-6" | 6-12" | 12-24" |
|---|---|---|---|---|---|
| Cr | 27 | 110 | 44 | 159 | 53 |
| Pb | 187 | 110 | --- | --- | 188 |

ADAPTED FROM: WAPPINGERS FALLS USGS QUADRANGLE.

## Legend

**SAMPLE LOCATIONS**

- 2001 SEDIMENT SAMPLE
- 2003 SEDIMENT SAMPLE

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGERS FALLS, NEW YORK

## SEDIMENT DATA ABOVE SEL SCREENING VALUES

0 250 500 1,000 1,500
Feet

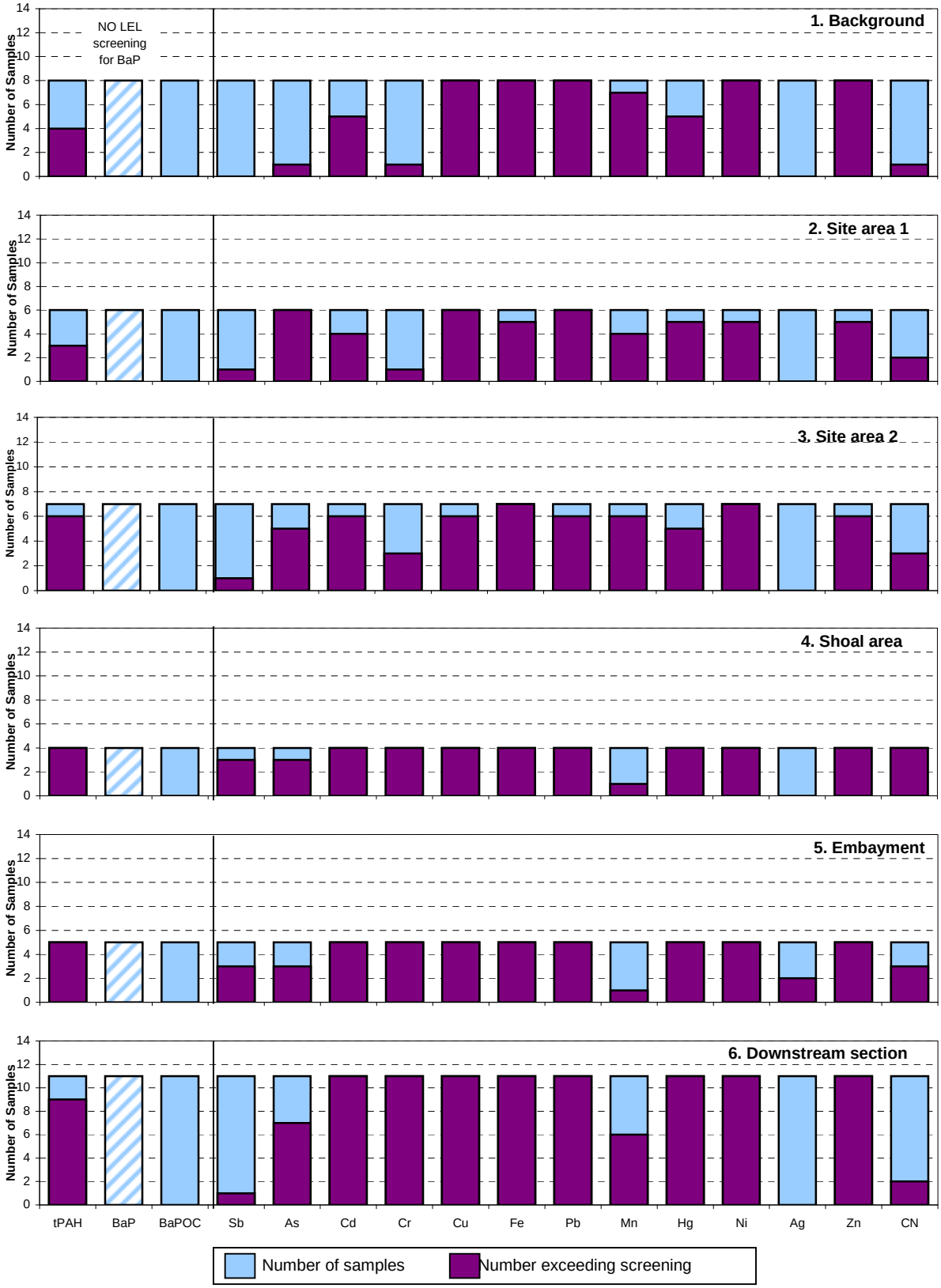
NOVEMBER 2007
27258.008.009

O'BRIEN & GERE ENGINEERS, INC.

PLOT DATE: 02/27/07 DIV. 732 JPS

Three Star Anodizing Site - Creek RI
Wappingers Falls, New York
Wappinger Creek Sediment Data

## Figure 6-1. Frequency of detections above LEL screening values, 0-6 Inches depth

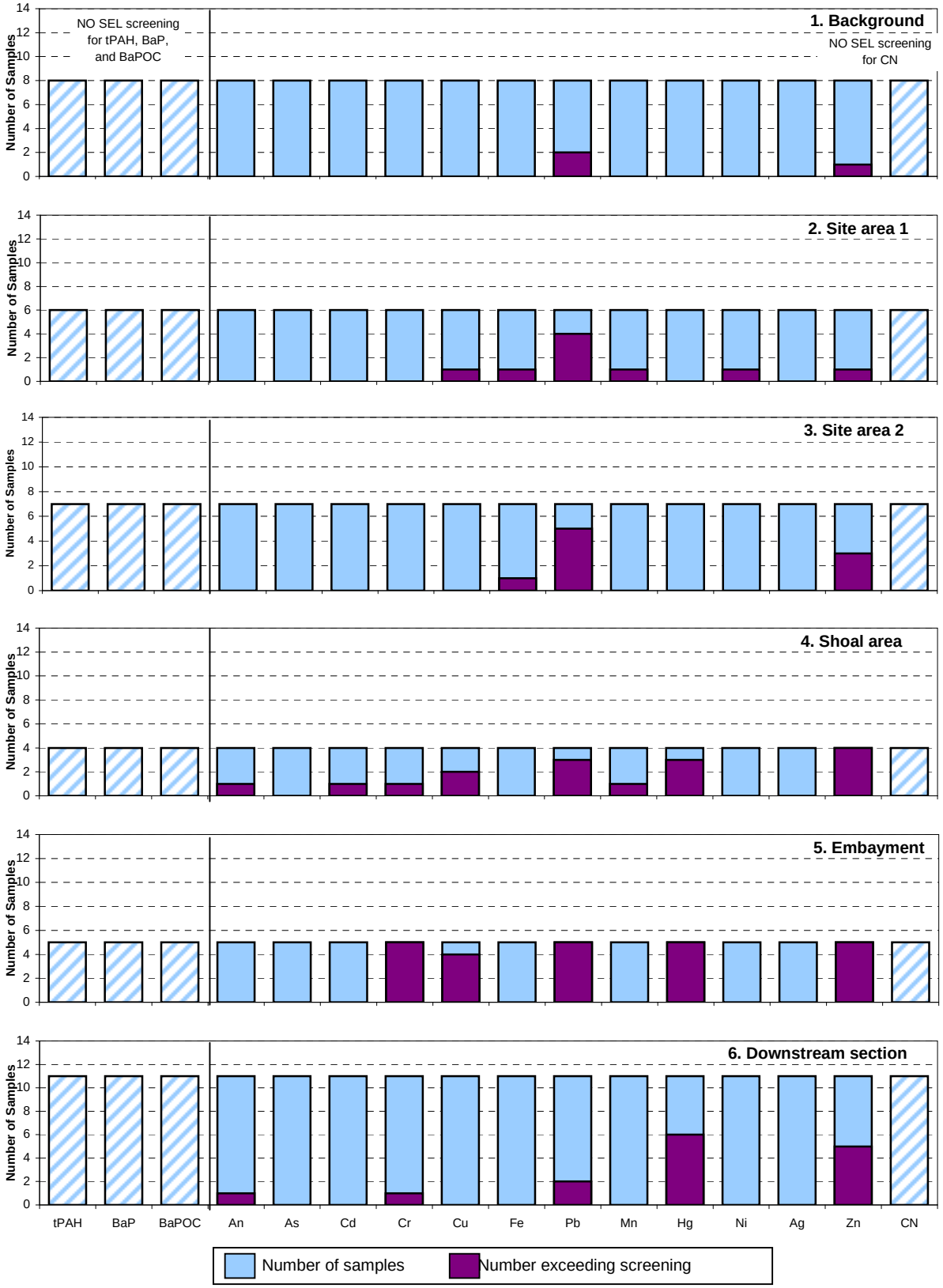



Notes:

tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaPOC = benzo(a)pyrene equivalent concentration adjusted for total organic carbon concentration; Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Ag = silver; Zn = zinc; CN = cyanide.

Three Star Anodizing Site - Creek RI
Wappingers Falls, New York
Wappinger Creek Sediment Data

## Figure 6-2. Frequency of detections above SEL screening values, 0-6 Inches depth

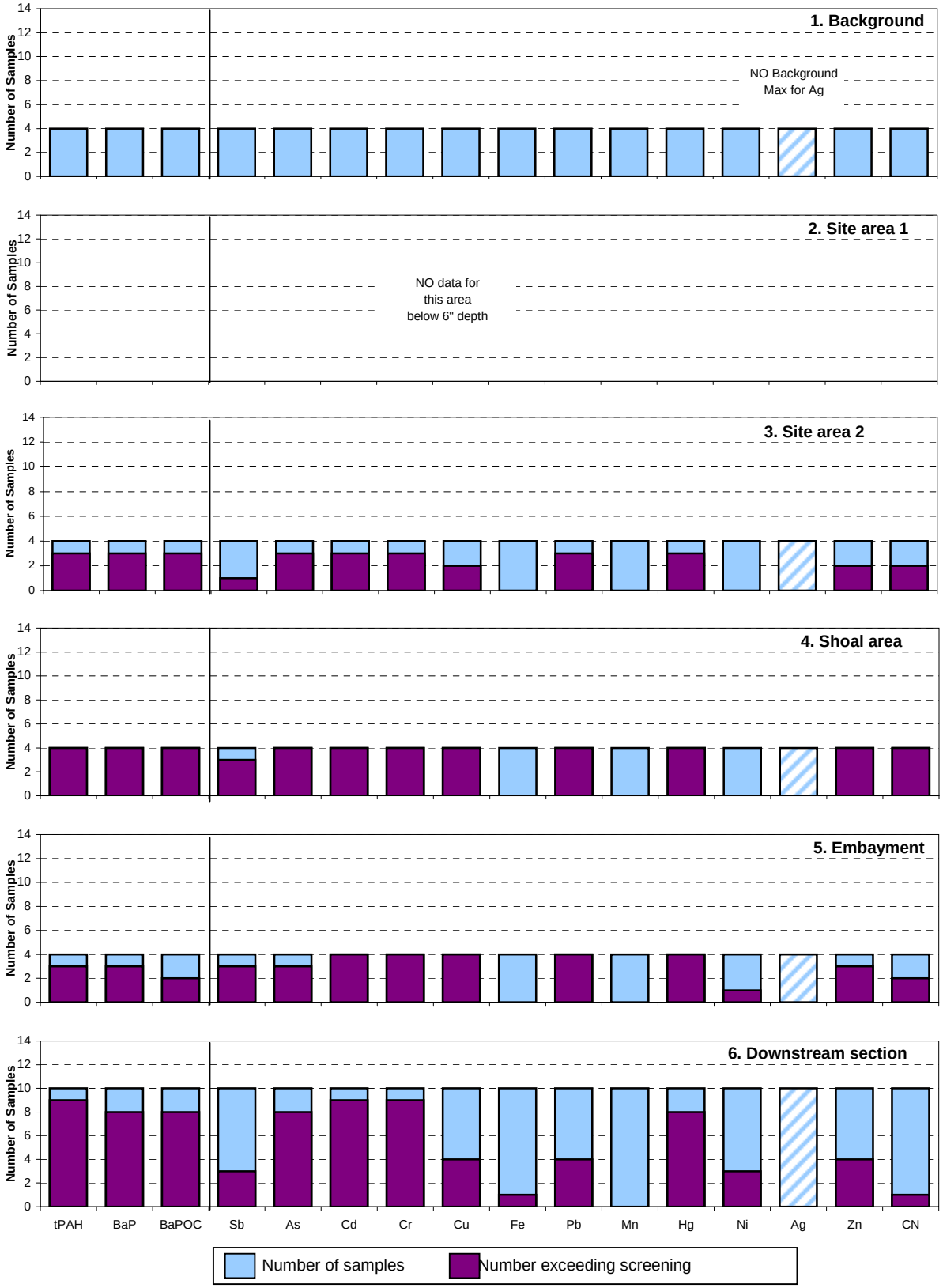



Notes:

tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaPOC = benzo(a)pyrene equivalent concentration adjusted for total organic carbon concentration; Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Ag = silver; Zn = zinc; CN = cyanide.

Three Star Anodizing Site - Creek RI
Wappingers Falls, New York
Wappinger Creek Sediment Data

## Figure 6-3. Frequency of detections above background maximum, 6-12 inches depth

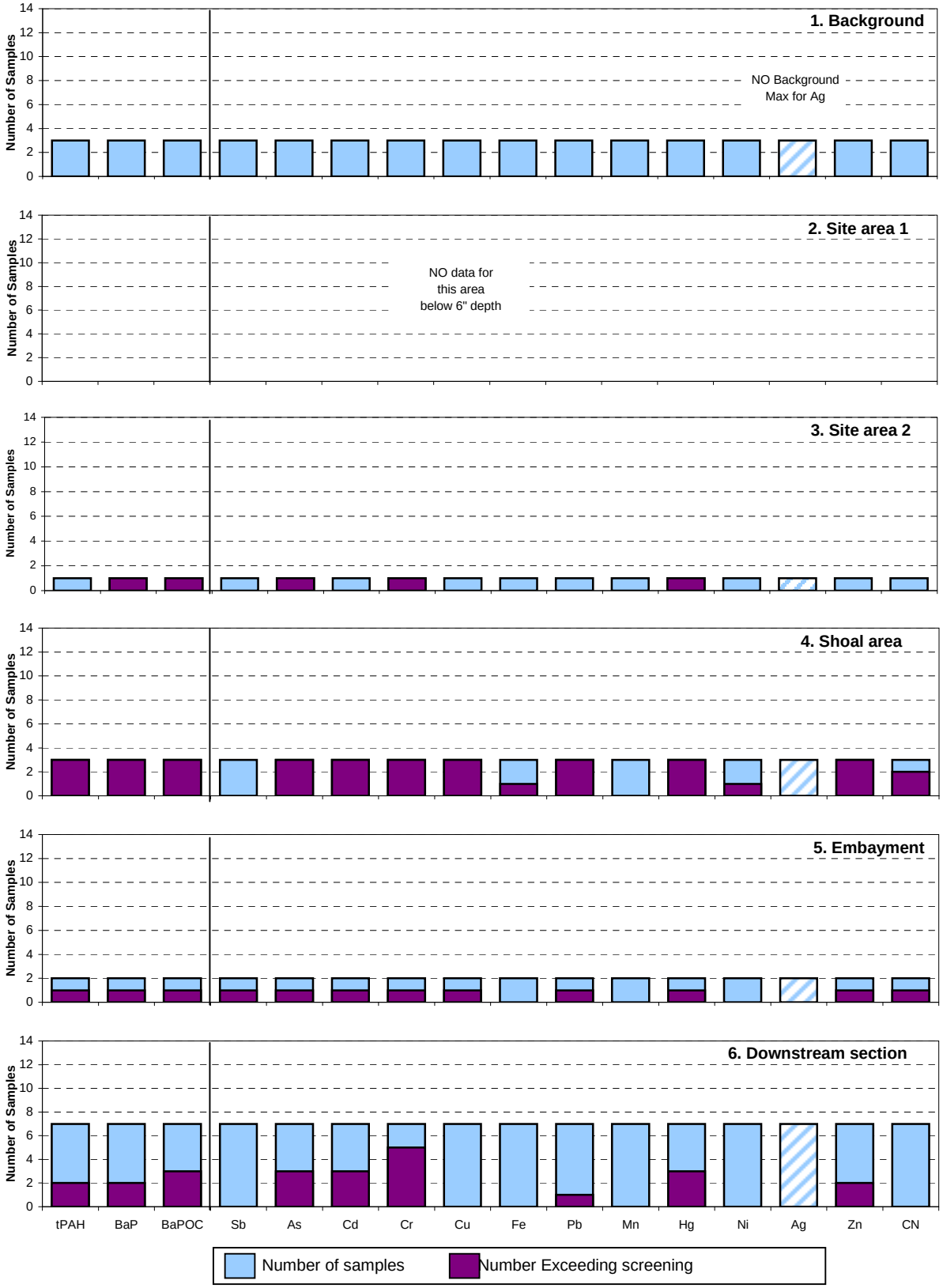



Notes:

tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaPOC = benzo(a)pyrene equivalent concentration adjusted for total organic carbon concentration; Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Ag = silver; Zn = zinc; CN = cyanide.

Three Star Anodizing Site - Creek RI
Wappingers Falls, New York
Wappinger Creek Sediment Data

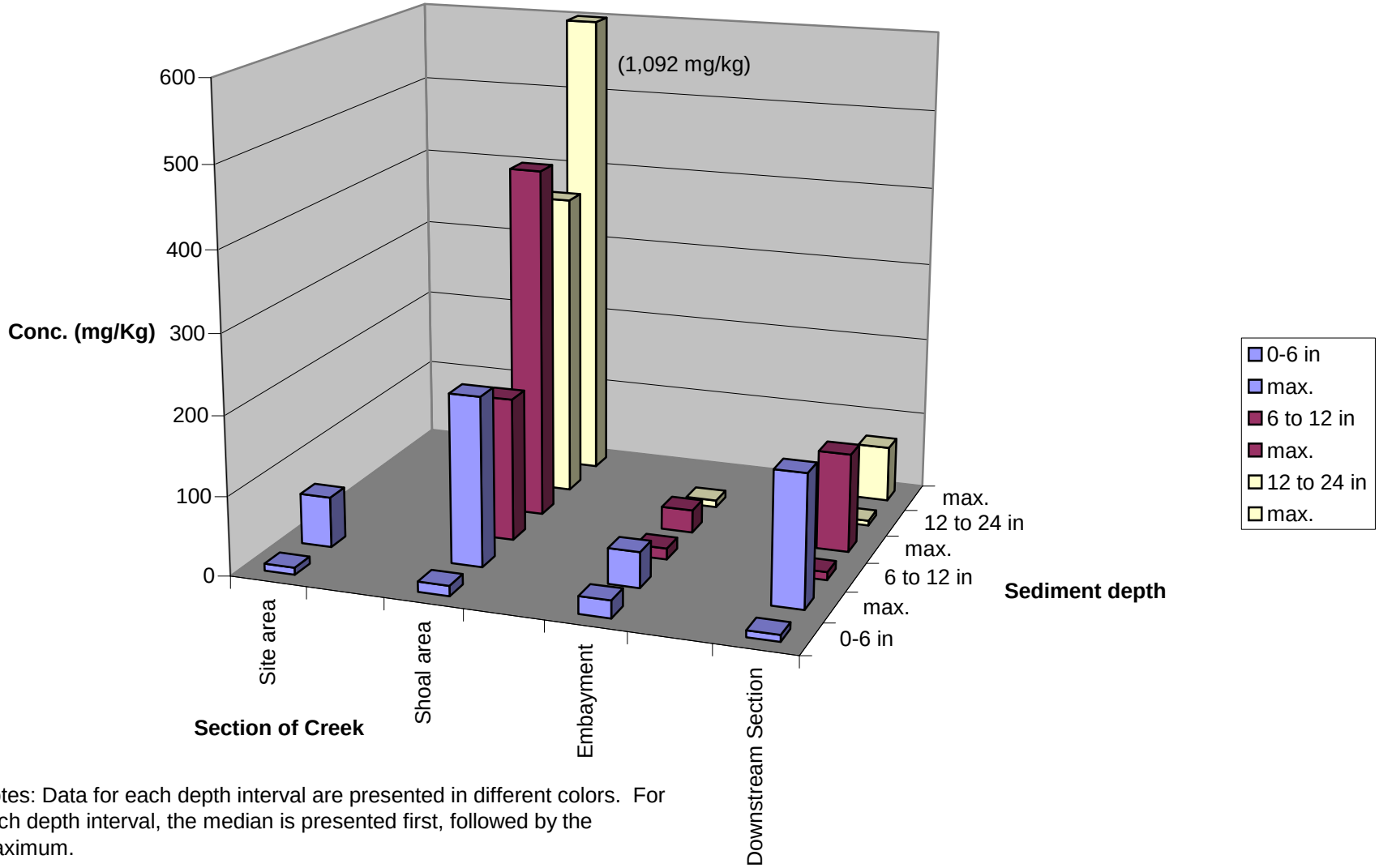
## Figure 6-4. Frequency of detections above background, >12 inches depth




Notes:

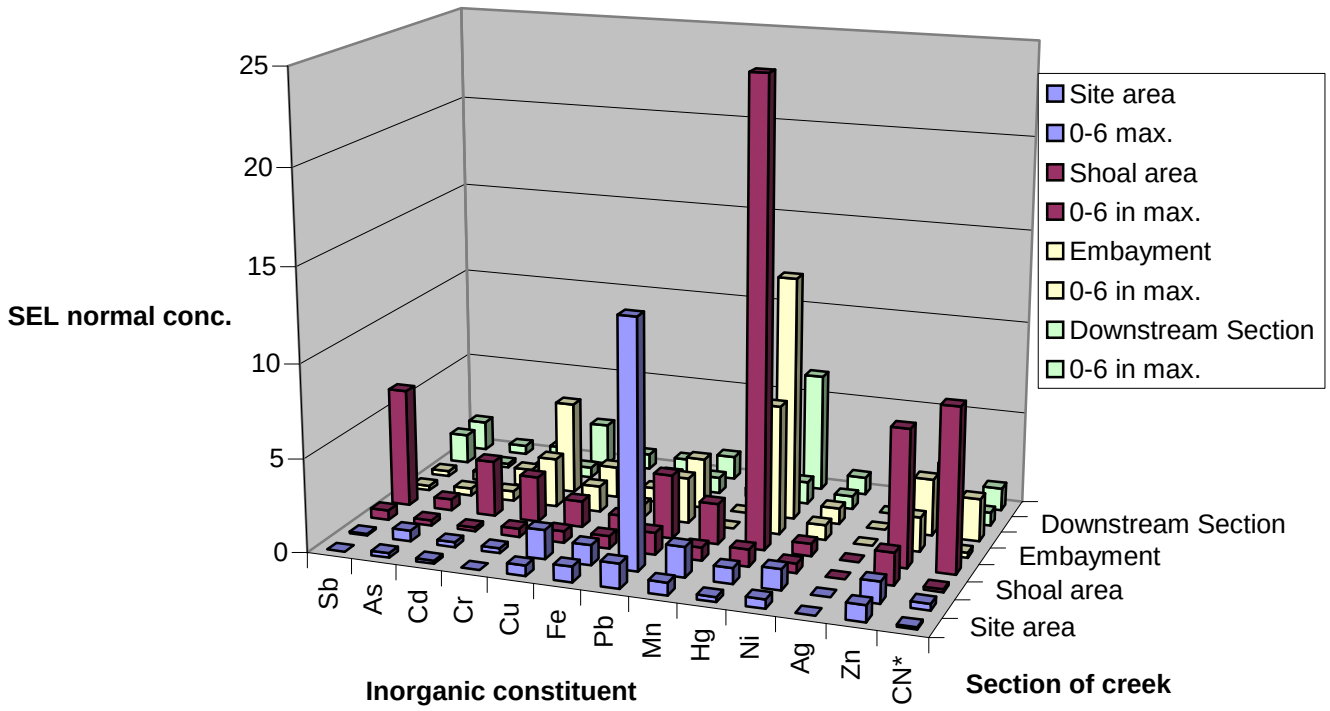
tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaPOC = benzo(a)pyrene equivalent concentration adjusted for total organic carbon concentration; Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Ag = silver; Zn = zinc; CN = cyanide.

## Figure 6-5. Spatial trends of total PAHs in sediment



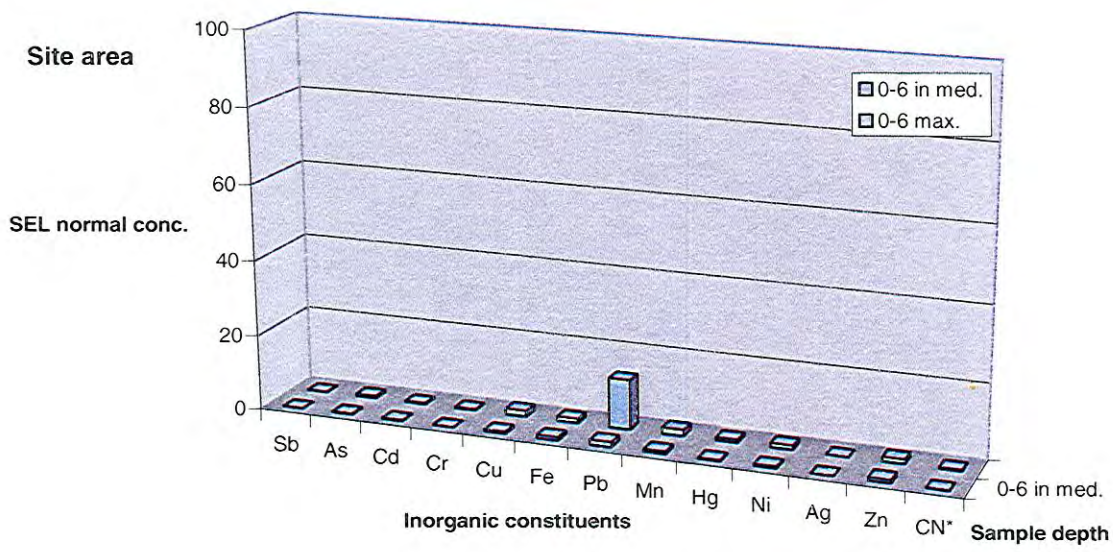

Notes: Data for each depth interval are presented in different colors. For each depth interval, the median is presented first, followed by the maximum.

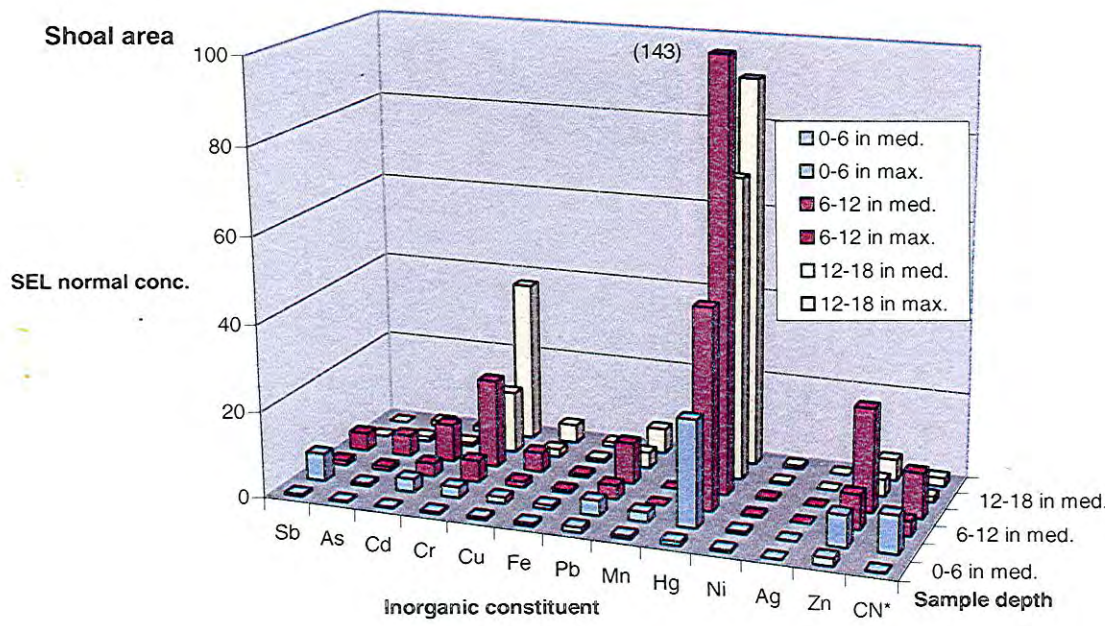
**Figure 6-6. Spatial trends of inorganic constituents in surface sediment (0 to 6 inch depth interval)**

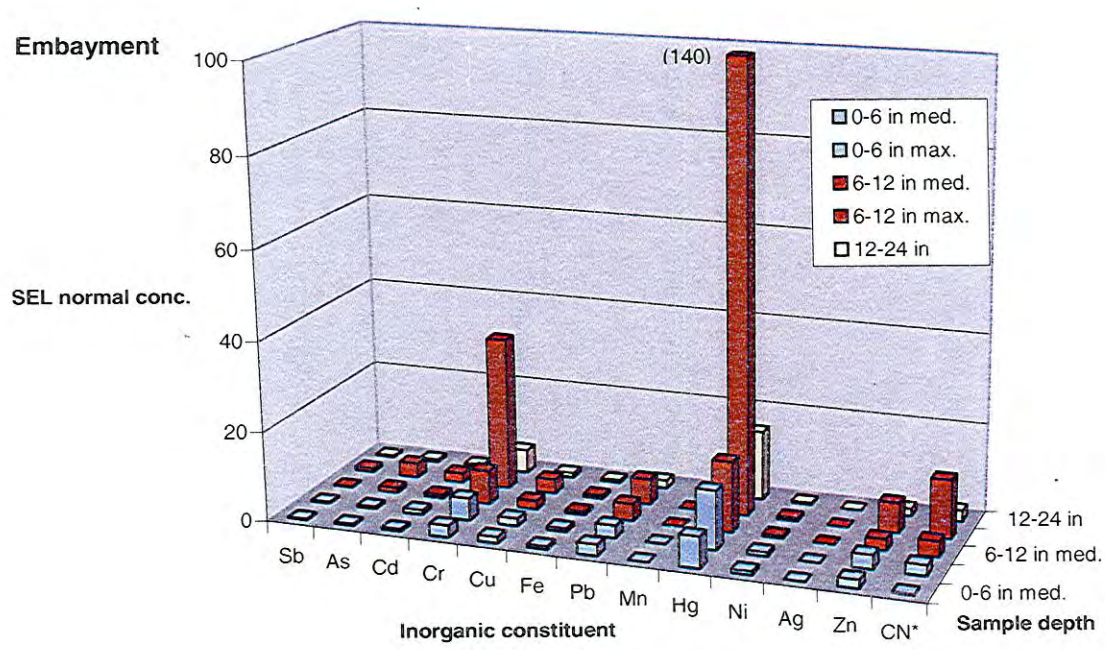


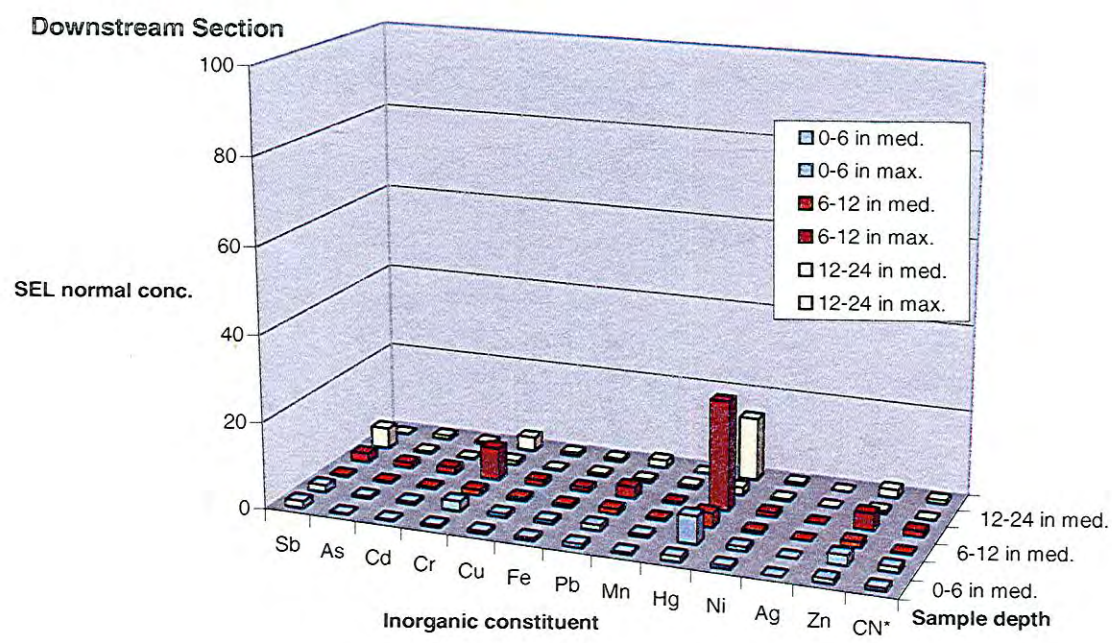

Notes: Data for each section of the creek are presented in different colors. For each section of the creek, the median is presented first, followed by the maximum. * indicates that cyanide data are normalized to background data.

**Figure 6-7. Spatial Trends of inorganic constituents in sediment depth intervals of the tidal creek.**




Notes: Data for each depth interval are presented in different colors. For each depth interval, the median is presented first, followed by the maximum. Data outside the range of the figures are presented in parentheses ( ). * indicates that cyanide data are normalized to background data.

# APPENDIX A

## Field logs

# Wappinger Creek
# Surface water sampling field logs

= #9

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Water column sampling field log*

7/12/2001 (Sampling Date)

| Station | Time | Sample Depths | pH | Cond. | Water Temp. °C | DO | % Salinity | QA/QC Sample | Inspect Sample | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| Rt - 9D | 0610 | 2.8' 7' 11.2' | 6.10 | 0.465 mS | 23.0 | 6.96 | 0.01 | ms/msD | ✓ | Sunrise mid 60°s clear IN RESERVOIR, No MOTOR (ROWED) |
| WP-39 - SW | 0830 | 2.2' 5.5' 8.8' | 5.97 | 0.464 | 22.8° | 6.39 | 0.01 | — | ✓ | |
| WP-18 - SW | 0915 | 2.3' 5.75' 8.7' | 6.71 | 0.467 | 22.7° | 6.43 | 0.01 | — | ✓ | |
| WP-13 - SW | 1020 | 1.5'-2' | 7.10 | 0.458 | 23.5 | 6.98 | 0.01 | — | ✓ | SHALLOW WATER 1.5'-2.0' |
| WP-10 - SW | 1105 | 2.5' 6' 9.5' | 7.11 | 0.453 | 23.3 | ~~7.0~~ 6.82 | 0.01 | X-1 | ✓ | AT BRIDGE (W. MOST) |
| WP-5 - SW | 1140 | 2' 5' 8' | 7.07 | 0.452 | 23.4 | 7.39 | 0.01 | — | ✓ | AT BRIDGE (E. MOST) |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

depth = 14' sample 6:30
depth = 11' sample 8:45
depth = 11.5' sample = 9:30

**Additional Notes:**
HORIBA U-10 WATER QUALITY METER CALIBRATED BY PINE ENVIRONMENTAL SERVICES PRIOR TO SHIPMENT.

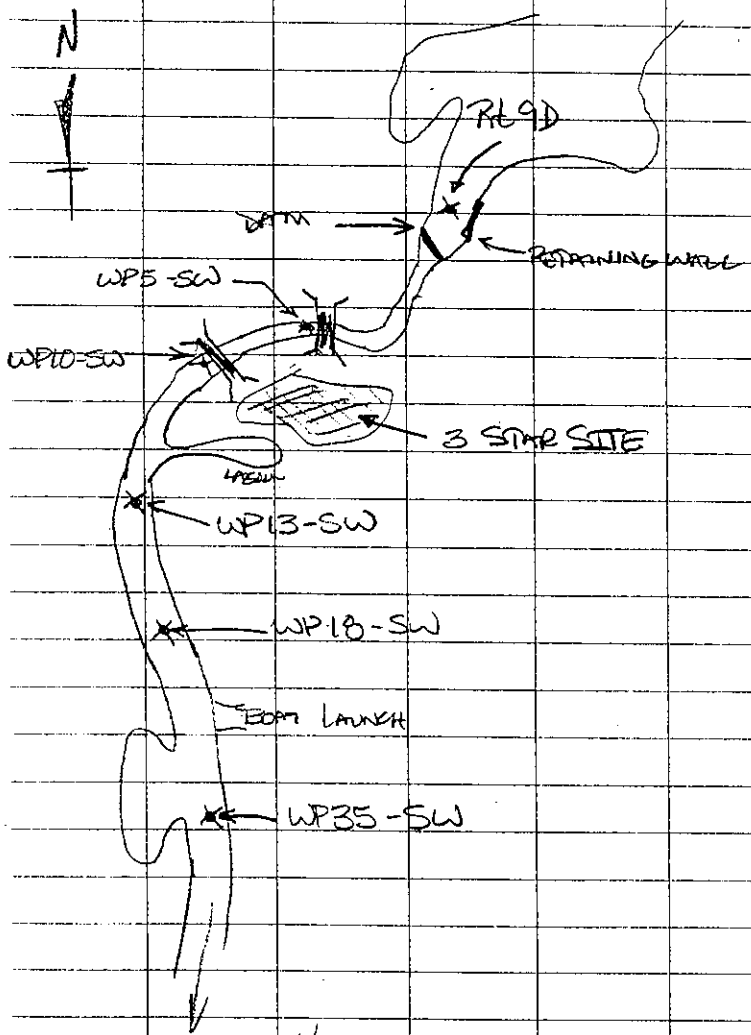
**Weather Data**
*Description:* Sunny Clear
*Temperature:* mid 60°s
*Wind:*
*Precipitation:* —

Sampled by: J. ZELTON + G. SLEEMAN

O'Brien & Gere Engineers, Inc.

7/12/01 3 STAR ANODIZING 27258

SURFACE WATER SAMPLING SCHEMATIC




27258 3 STAR ANODIZING 7/12/2001

0445 STARTED FILLING SAMPLING BABS WITH ICE TO PRESERVE SURFACE WATER SAMPLES. LOADED CARGO VAN WITH SAMPLING SUPPLIES.

0520 LEFT ECONOLODGE FOR UPSTREAM SAMPLING LOCATION ABOVE RT 9D. ROWED BOAT OUT TO RT 9D SAMPLING LOCATION JUST ABOVE DAM. GARRETT ROWED BOAT & MAINTAINED LOCATION WHILE I SAMPLED.

0610 SAMPLE SURFACE WATER AT RT 9D LOCATION. COLLECTED MS/MSD AT RT 9D

0715 MOVED EQUIPMENT TO FURTHEST DOWNSTREAM LOCATION BOAT

0830 LAUNCH & SAMPLED WP35-SW

0915 SAMPLED WP18-SW

1020 SAMPLED WP13-SW DIRECTLY FROM CREEK WITHOUT NEED FOR RETAINERER SAMPLER DUE TO SHALLOW WATER.

1105 SAMPLED DOWNSTREAM SITE BRIDGE WP10-SW

1115 SURVEYOR ON-SITE. GARRETT LOCATED SOME OF THE SHALLOW

7/12/01 3 STAR ANODIZING 27253

7/12/01

27252 3 STAR ANODIZING 7/12/01

SOIL SAMPLING POINTS FOR SURVEYOR.

1140 SAMPLED WP5-SW LOCATION.

1200 ASSISTED SURVEYOR WITH SURFACE WATER SAMPLING LOCATION SURVEYING.

1330 DROVE TO WARRINGERS LAKE TO SURVEY R+SD LOCATIONS PACKAGED SAMPLES

1530 LEFT SITE FOR OFFICE TO SHIP SAMPLES OUT.

1600 ARRIVED AT OFFICE. GARRETT + I SHIPPED SAMPLES VIA AIRBORNE TO COLUMBIA + CDL TO OBG LABS.

I RETURNED BOAT, MOTOR, + CARGO VAN.

7/12/01

10653/27258/#4

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

Water column sampling field log

**Sampling Date:** 5/14/02

| Sample Station | Time | Water depth Total | Sample | pH | Cond. | Water Temp. | Turb. | D.O. | Salinity | QA/QC Sample | Inspect Sample | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site Bridge (downstream) | 3:30PM | 10.5' | | | | | | | | — | — | |
| upper | 15:30 | | Top | 7.82 | .254 S/cm | 14.52 | 19.7 | 14.04 | 0. | | | 2' (1) VOA |
| mid | | | MID | 7.85 | .254 | 12.49 | 25.8 | 9.25 | 0 | | | 5' COLLECTED |
| lower | | | BOT | 7.84 | .25 | 12.46 | 26.8 | 10.01 | 0 | | | 8' AT EACH INTERVAL |
| Rt 28 Bridge | 4:45PM | 20' | | | | | | | | — | — | 20' water column |
| upper | 16:45 | | TOP | 7.76 | .273 | 12.59 | 23.8 | 11.06 | 0 | | | 4' (1) VOA |
| mid | | | MID | 7.83 | .272 | 12.46 | 23.8 | 8.82 | 0 | | | 10' COLLECTED AT |
| lower | | | BOT | 7.84 | .270 | 12.36 | 29.3 | 5.90 | 0 | | | 16' EACH INTERVAL |
| WAPPINGER LAKE (BACKGROUND) | 18:00 | 10.5' | | | | | | | | MS/MSD | — | |
| upper | | | TOP | 7.71 | .244 | 12.66 ft. | 19.7 | 11.14 | 0 | BLIND DUP | | (1) VOA |
| mid | | | MID | 7.67 | .247 | 11.93 | 22.9 | 11.26 | 0 | | | 2' COLLECTED AT |
| lower | | | BOT | 7.68 | .239 | 11.98 | 19.9 | 11.56 | 0 | | | 5' EACH INTERVAL |
| | | | | | | | | | | | | 8' |

**Additional Notes:** Where water depths permit, samples collected as depth integrated composite samples consisting of aliquots from upper, mid, and lower depths.

**Weather Data:**
Description: VARIABLE
Air temperature: 50°
Wind: 5-10 mph
Precipiatation: VARIABLE

**Sampling personnel:** Jason Sperry / Craig Gabriel

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

Water column sampling field log

**Sampling Date:** 5/15/02

| Sample Station | Time | Water depth Total | Sample | pH | Cond. | Water Temp. | Turb. | D.O. | Salinity | QA/QC Sample | Inspect Sample | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SITE BRIDGE (DOWNSTREAM) | 07:45 | 8.5' | | | S/cm | | | | | — | — | (1) VOA COLLECTED AT EACH INTERVAL |
| upper | | | 1.5' | 7.48 | 0.245 | 11.93 | 38.0 | 7.88 | 0 | | | |
| mid | | | 4' | 7.63 | 0.247 | 12.39 | 76.0 | 12.93 | 0 | | | |
| lower | | | 6.5' | 7.72 | 0.242 | ~~11.70~~ | 17.6 | 11.70 | 0 | | | |
| RT. 28 BRIDGE | 08:30 | 17.5' | | | | 12.02 | | | | — | — | (1) VOA COLLECTED AT EACH INTERVAL |
| upper | | | 3' | 7.76 | 0.247 | 12.08 | 54.5 | 12.30 | 0 | | | |
| mid | | | 9' | 7.96 | 0.246 | 11.37 | 32.1 | 10.26 | 0 | | | |
| lower | | | 15' | 7.75 | 0.247 | 11.05 | 25.7 | 7.69 | 0 | | | |
| Lagoon outfall | 09:30 | 3" | | | | | | | | | | 3 VOA Collected |
| upper | | | | 7.56 | .305 | 13.03 | 5.9 | 10.54 | 0 | | | |
| mid | | | | | | | | | | | | |
| lower | | | | | | | | | | | | |

**Additional Notes:** Where water depths permit, samples collected as depth integrated composite samples consisting of aliquots from upper, mid, and lower depths.

**Weather Data:**
Description: Partly Cloudy - Sunny
Air temperature: 50°
Wind: —
Precipiatation: —

**Sampling personnel:** Jason Sperry / Craig Gabriel

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

Water column sampling field log

**Sampling Date:** 5/15/02

| Sample Station | Time | Water depth Total | Water depth Sample | pH | Cond. | Water Temp. | Turb. | D.O. | Salinity | QA/QC Sample | Inspect Sample | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WAPPINGER LAKE (BACKGROUND) | 10:30 | 9' | | | | | | | | — | — | (1) VOA COLLECTED AT EACH INTERVAL 8'- TURBIDITY SUBJECT TO QUESTION. MOST LIKELY COLLECTED TO CLOSE TO LAKE BOTTOM. |
| upper | | | 1' | 7.81 | 0.253 | 12.52 | 52.4 | 12.16 | 0 | | | |
| mid | | | 4.5' | 7.94 | 0.249 | 11.71 | 15.0 | 9.13 | 0 | | | |
| lower | | | 8' | 7.66 | 0.250 | 11.88 | 300. | 10.95 | 0 | | | |
| EQ BLANK | 11:30 | — | | | | | | | | — | — | (3) VOA COLLECTED |
| upper | | | | | | | | | | | | |
| mid | | | | | | | | | | | | |
| lower | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| upper | | | | | | | | | | | | |
| mid | | | | | | | | | | | | |
| lower | | | | | | | | | | | | |

**Additional Notes:** Where water depths permit, samples collected as depth integrated composite samples consisting of aliquots from upper, mid, and lower depths.

**Weather Data:**
Description: PARTLY CLOUDY - SUNNY
Air temperature: 55°
Wind: 10-15 MPH GUSTS
Precipiatation: NONE

**Sampling personnel:** JASON SPERRY / CRAIG GABRIEL

# Wappinger Creek
# Sediment probing logs

**NYSDEC, Three Star Anodizing Site, Wappingers Falls, New York**
**Sediment Probing Program – *On-site lagoon and Wappingers Creek***

| | Transect 5/8/01 | Interval (ft) | GPS Coordinates | Water Depth (ft) | Sediment Penetration (ft) | Core Length (ft) | Description of Physical Features: benthic org., bedrock, rocks, cobbles, debris etc. | Observations - sheens or odors, outfall pipe, other (explain) |
|---|---|---|---|---|---|---|---|---|
| 0845 | WP01 | 24 | Lat:<br>Long: | 1 | 0.5 | | Creek bed in general vicinity large rocks, probing location by coarse sand | Location at inside downstream corner of dock #1 |
| 0850 | WP01 | 33 | Lat:<br>Long: | 1 | 0.5 | | Coarse Sand | Outside downstream corner of dock |
| 0900 | WP04,45-9 | 9 | Lat:<br>Long: | <0.5 | 1.5 | | Coarse Sand and gravel | Site side of creek |
| 0930 | WP09 A | | Lat:<br>Long: | 0.5 | 1.5 | | Coarse Sand and gravel | large concrete boulders in area water depth 7-10 ft next to old pier structure remains |
| 0945 | WP10 A | 0 | Lat:<br>Long: | 0-1.0 | 0.5-1.0 | | general shore area coarse sand and gravel | pipe at bank opposite site |
| 0950 | | 10 | Lat:<br>Long: | 5 | 0.5 | | firm bed material | |
| 1000 | WP11 A | 0 | Lat:<br>Long: | 0-1.5 | 0.5-2.5 | | Coarse Sand and gravel | |
| 1010 | WP12 | | Lat:<br>Long: | 0-1.0 | ~0.5 | | Coarse gravel & sand | At outlet of lagoon |

**NYSDEC, Three Star Anodizing Site, Wappingers Falls, New York**
**Sediment Probing Program – *On-site lagoon and Wappingers Creek***

| | Transect | Interval (ft) | GPS Coordinates | Water Depth (ft) | Sediment Penetration (ft) | Core Length (ft) | Description of Physical Features: benthic org., bedrock, rocks, cobbles, debris etc. | Observations - sheens or odors, outfall pipe, other (explain) |
|---|---|---|---|---|---|---|---|---|
| 1015 | WP13 | 0 | Lat: / Long: | 0-1.0 | 0.5 | | rock & cobble w/ coarse sand | |
| | " | 10 | Lat: / Long: | ~.5 | 0.5 | | " | |
| 1020 | WP14 | 0 | Lat: / Long: | 0-1.0 | 0.5 | | " | |
| 1025 | WP15 | 0 | Lat: / Long: | 0-1 | 0.5 | | rock & cobble w/ coarse sand | |
| 1025 | " | 10 | Lat: / Long: | 5.5 | 0.25 | | " | |
| | WP16 | 0 | Lat: / Long: | | | | same | |
| | WP17 | | Lat: / Long: | | | | same | |
| 1035 | WP18 | 10 | Lat: / Long: | 0-1 | 0.5-1.0 | 0.5 | silt, sand, gray clay, brick | |

**NYSDEC, Three Star Anodizing Site, Wappingers Falls, New York**
**Sediment Probing Program – *On-site lagoon and Wappingers Creek***

| | Transect | Interval (ft) | GPS Coordinates | Water Depth (ft) | Sediment Penetration (ft) | Core Length (ft) | Description of Physical Features: benthic org., bedrock, rocks, cobbles, debris etc. | Observations - sheens or odors, outfall pipe, other (explain) |
|---|---|---|---|---|---|---|---|---|
| 1045 | WP18 | 20 | Lat: Long: | 2 | < 0.5 | — | Rock and cobble | proposal sample location |
| 1050 | WP 19 | ~15 | Lat: Long: | 0-1.0 | ~1.5 | 0.5 | Surface sand and rocks gray clay - silt material below | |
| 11:00 | WP19.75 | 24 | Lat: Long: | 2.5' | 1.5' | | Sand silt and some rocks | |
| 11:15 | WP21 | 15 | Lat: Long: | 2 | 2 | 0.5 | gray silt w/ twigs | |
| 1120 | WP22 | 23 | Lat: Long: | 50" | 18" | | | |
| 1125 | WP23 | 20 | Lat: Long: | 1.5 | 0.5 | 0.5 | Coarse sand w/ organic matter (twigs) silt at bottom of core | pipe |
| 1130 | WP24 | 20 | Lat: Long: | 2.5 | 2.0 | | silt | DPW garage - upstream |
| | WP24 | 0 | Lat: Long: | 1.5 | 1.0 | | Sand and gravel | DPW garage area ~~downstream~~ water |

**NYSDEC, Three Star Anodizing Site, Wappingers Falls, New York**
**Sediment Probing Program – *On-site lagoon and Wappingers Creek***

| | Transect | Interval (ft) | GPS Coordinates | Water Depth (ft) | Sediment Penetration (ft) | Core Length (ft) | Description of Physical Features: benthic org., bedrock, rocks, cobbles, debris etc. | Observations - sheens or odors, outfall pipe, other (explain) |
|---|---|---|---|---|---|---|---|---|
| 1140 | WP25 | 0 | Lat:<br>Long: | 1.0 | 1.0 | – | Sand | DFW - downstream |
| | WP25 | 20 | Lat:<br>Long: | 3.0<br>~~1.5~~ WM | 2.5' | 0.5 | Silt & twigs | Slight odor |
| 1200 | WP26 | 0-2 | Lat:<br>Long: | 1.5 | 0.5 | | Sand | |
| | WP26 | 10 | Lat:<br>Long: | 4 | 6' | | fine unconsolidated Silt | |
| | WP26 | 20 | Lat:<br>Long: | 5' | 3' | | Silt | |
| ~ | WP27 | | Lat:<br>Long: | | | | | Pipe |
| | | | Lat:<br>Long: | | | | | |
| | | | Lat:<br>Long: | | | | | |

**NYSDEC, Three Star Anodizing Site, Wappingers Falls, New York**
**Sediment Probing Program** – ***On-site lagoon and Wappingers Creek*** 5/9/2001

| Transect | Interval (ft) | GPS Coordinates | Water Depth (ft) | Sediment Penetration (ft) | Core Length (ft) | Description of Physical Features: benthic org., bedrock, rocks, cobbles, debris etc. | Observations - sheens or odors, outfall pipe, other (explain) |
|---|---|---|---|---|---|---|---|
| | WP07-WP08 | Lat:<br>Long: | | | A(SIDE) | | 3 DRAINAGE OUTFALLS FROM CEMENT FOUNDATION |
| WP06 | | Lat:<br>Long: | | | | 8 – 2" DRAINAGE OUTFALLS<br>4 – 6" DRAINAGE OUTFALLS | 4 DRAINAGE OUTFALLS (12) DIRECTLY ACROSS FROM WP06 |
| WP04 – WP05 | | Lat:<br>Long: | | | | | 7 - 2" DRAINAGE OUTFALLS (SURFACE OF PARKING LOT) |
| WP04 | | Lat:<br>Long: | | | | | ≈18" DRAIN PIPE FROM UNDER PARKING LOT (DIRECTLY ACROSS FROM WP04) |
| WP03 | | Lat:<br>Long: | | | | | ≈12" DRAIN PIPE FROM UNDER PARKING LOT |
| | WP02-WP03 | Lat:<br>Long: | | | A(SIDE) | 6-SURFACE DRAINS (6") | ≈6" DRAIN PIPE FROM UNDER PARKING LOT |
| | WP02-WP03 | Lat:<br>Long: | | | SITE SIDE | | (1) 6" DRAIN<br>(1) 12" DRAIN > FROM FOUNDATION OF RESIDENTIAL BUILDING |
| | | Lat:<br>Long: | | | | | |

# Wappinger Creek
# Sediment sample logs

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| Phase I RI | WP-PL | 05/08/01 1515 WAN | Sunny |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 3ft | Push | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| ~~4ft~~ 1ft | 11" | Northing/Lat. = Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| | aquatic vegetation at surface | | |
| 0-6 | dark brown silt w, organic matter | | |
| 6-11 | dark brown silt w, organic matter | | photo #2 |
| | DUP SAMPLE | | |
| | TOO MUCH WATER CONTENT TO REMOVE OUTER LAYER NEXT TUBE | | |

Sampler Initials: WAM/CAG

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| Phase I RI | WP-PL | 05/06/01 1535 | |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 31" | Push | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| ~~43~~ WAA 12" | 11" | Northing/Lat. = Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6" | DARK BROWN SILT W/ SOME ORGANIC MATER | | |
| 6-11" | DARK BROWN SILT W/ LITTLE ORGANIC MATTER | | |
| | CORE PROCESSED @ 1555. PRIOR TO PROCESSING CORE MAINTAINED AS COLLECTED W/ WATER COLUMN ON TOP | | |
| 0-6 | VOC 1555 | | |

Sampler Initials: CAG / WAA

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| Phase I RI | ~~WP25~~ WP29 | 05/09/01 0950 | OVERCAST |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 22" | Push | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 42 EST. | 20" | Northing/Lat. = Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6 | Dark Brown Medium sand and silt w/ organic matter (twigs, aq. veg. pods) piece of plastic. | | |
| 6-12 | 6-9 Dark brown silt<br>9-12 gray sand | | |
| 12-18 | Dark brown silt by some fine sand | | |
| | Sample Collected approx 6ft from Stake | | |

Sampler Initials: CAG / KRH / WAT

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| Phase I RI | WP 11A | 05/09/01 1125 | HAZY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 1 ft | AUGER | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 0.5 | 0.5 | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6 | BROWN SAND (COARSE) AND GRAVEL AND SHELL FRAGMENT | | |

Sampler Initials: CAG, WAA, KRH

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York.

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| Phase I R1 | WP9A | 05/09/01 1150 | Sunny |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 0.5' | Auger | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 0-6" | 0-6" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6 | Light brown fine sand and silt w/ organic matter, some medium to coarse sand and gravel | | |

Sampler Initials: CAG, WAA, KRH

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I R1 | LG-OUT, | 5/09/01, 14:00 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 12" | AUGER | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 8" | 0-6" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6" | BROWN SILT w/ SOME COARSE TO MEDIUM SAND + GRAVEL. | | (~1' INSIDE LOCATION STAKE) |

Sampler Initials:

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I R1 | WP-16 | 05/09/01 14:30 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 4 ft | AUGER | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 0-6" | 0-6" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6" | BROWN SILT W/ MOSTLY COARSE SAND + SOME MEDIUM SAND | | (LOCATION 7' IN FRONT OF STAKE) |

Sampler Initials:

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I & I | WP-18 | 05/09/01 1500 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 18" | AUGER | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 13" | 12" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-1" | LIGHT BROWN MEDIUM SAND | | (LOCATION 10' IN FRONT OF STAKE) |
| 1-6" | GREY CLAY W/ SAND | LITTLE COARSE | |
| 6-12" | GREY CLAY | | |

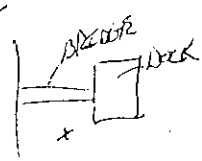
Sampler Initials:

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE II | WP01-A | 05/09/01 9:00 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 12" | AUGER | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 8" | 0-6" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6" | BROWN COARSE SAND + GRAVEL | | 3 FT BEHIND BK RF CORNER OF DECK |




Sampler Initials:

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I RI | WP 01.45-9 | 05/09/01 14:20 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 8" | AUGER | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 6" | 6" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6' | BROWN COARSE SAND + GRAVEL W/ SOME MEDIUM SAND | | |

Sampler Initials:

Wappinger Lake
Background sediment sample logs

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I & I | WP-LK01-A | 05/10/01 8:55 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 18" | PUSH | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 4 ft | 25" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6" | DARK BROWN SILT w/ SOME ORGANIC MATTER | (SEEDS - DARK BLACK/SPINED) | |
| 6-12" | DARK BROWN SILT w/ SOME ORGANIC MATTER + A PIECE OF WOOD | | |
| 19-25" | DARK BROWN SILT w/ VERY LITTLE ORGANIC MATTER | | |

Sampler Initials:

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I RI | WP-LK01A-MS | 05/10/01 10:25 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 18" | PUSH | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 4' | 31" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6" | DARK BROWN SILT W/ SOME ORGANIC MATTER | | |

Sampler Initials:

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I RI | BLEND DOP (WP LK01) | 05/10/01 10:30 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 18" | PUSH | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 4' | 31" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-16" | DARK BROWN SILT W/ SOME ORGANIC MATTER | | |

Sampler Initials:

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I R1 | WP LK01A-MSD | 05/10/01 10:40 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 18" | POSH | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 4' | 28" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6" | DARK BROWN SILT w/ SOME ORGANIC MATTER | | |

Sampler Initials:

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I R1 | WP LK01-B | 05/10/01 10:55 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 18" | PUSH | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 4' | 31" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6 | DARK BROWN SILT ORGANIC MATTER | W/SAND | 10:55 |
| 6-12 | DARK BROWN SILT ORGANIC MATTER | W/ SAND | 11:00 |
| 25-31" | DARK BROWN SILT | | 11:05 |

Sampler Initials:

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

*Sediment sampling field log*

| Sampling Program | Sample ID Number | Date/Time | Weather Conditions |
|---|---|---|---|
| PHASE I R1 | WP UK01-C | 05/10/01 11:20 | SUNNY |
| **Water Depth** | **Core Type** | **Core to be Composited?** | |
| 18" | PUSH | ☐ Yes ☐ No | |
| **Penetration Depth** | **Length Recovered** | **GPS Coordinates** | |
| 41' | 32" | Northing/Lat. =<br>Easting/Long. = | |

| Core Section Interval | Visual Description | Grain Size | Comments |
|---|---|---|---|
| 0-6 | DARK BROWN SILT W/ SOME ORGANIC MATTER | | 11:20 |
| 6-12 | DARK BROWN SILT W/ SOME ORGANIC MATTER | | 11:25 |
| 26-32" | DARK BROWN SILT | | 11:30 |

Sampler Initials:

CONTENTS

| PAGE | REFERENCE | DATE |
|---|---|---|

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CREEK INVESTIGATION 2003

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5/12/03

WAPPINGERS CREEK INVESTIGATION

BILL AYLING

CHARLES SHARPE

KEVIN HARTMAN

11:30 - ONWARD BOAT

12:00 - LUNCH

13:00 - ON SITE

GPS BENCHMARKS

#1 BASE OF LIGHT POLE FACING WATER

N: 594977.74 ft

E: 1229454.90 ft

SAT: 5 PDOP: 3.6

#2 BASE OF DOCK FACING WATER

N: 595013.33

E: 1229422.79

SAT: 5 PDOP: 3.6

WEATHER: MOSTLY CLOUDY

55-60°F



EQBL SED 1 5/12/03 13:55

EQUIPMENT BLANK OF 2 MIXING BOWLS & THREE SPOONS WAH

Discussion w/ Reps of Lake Assoc. Sampling has been completed by others to evaluate sediment: Lake Assoc., Cornell, & ACOE

Health & Safety Mtgs. 5/12/03

Parking lot meeting conducted at OBG before traveling to site. Safety issues associated w/ towing boat.

Water hazard meeting at dock. 14:05

WAH

WPLK1 5/12/03 1440 (0-6")

Wet brown silt w/ some organic matter

KRH/CNS Water depth 3ft 9in.

GPS Reading

N = 596333.5 Sat = 8

E = 1228644.2 PDOP = 2.1

Push Core

WP LK2 (0-6") 5/12/03 1525

N 595797.7 SAT: 7
E 1228096.2 PDOP: 2.2

WATER DEPTH: 3ft 5in.

WET BROWN SILT W, SOME ORGANIC MATTER

PUSH CORE



ABANDON SAMPLE LOCATION
~~WP-LK3 (0-6")~~ 5/12/03

Water Depth = 3ft

N= 595394.8 SAT= 8
E= 1228152.4 PDOP= 2.1

---

WP-LK3 (0-6") 5/12/03 16:00

N = 595587.8 SAT = 9
E = 1228565.2 PDOP = 1.8

Water Depth 3ft 8"

Wet brown silt w, some organic matter

INCLUDES MS/MSD COMPOSITE OF TWO SAMPLE CORES COLLECTED.

PUSH CORE

WP LK4 (0-6") 5/12/03 16:55

N: 595310.6 SAT: 8
E: 1228820.7 PDOP: 2.5

WATER Depth: 3ft 11"

Wet brown silt w, Some organic matter

Push CORE



WP LK5 (0-6") 5/12/03 17:15 ~~16:~~ 6AM

N: 595048.7 SAT: 8
E: 1229323.1 PDOP: 3.7

WATER DEPTH: 5ft 4IN.

brown silt w, Some organic MATTER

Push CORE

8:30
17:30 GPS BENCHMARKS

#1 LIGHT POLE BOAT MACHINE WATER
N: 594976.3
E: 1229455.6
SAT: 8 PDOP: 4.7

#2 BASE OF DOCK MACHINE WATER
N: 595011.8
E: 1229423.8
SAT: 8 PDOP: 4.7

18:00
PUT BOAT IN CREEK

19:00 CRANE SETTE



5/13/03
7:35 ON SETTE - BILL AMLING, CHARLES SHORTE
KEVIN HARTMAN

GPS BENCHMARKS

#1 TELEPHONE POLE 77315
N: 593505.7 ft
E: 1227006.0 ft
SAT: 6 PDOP: 2.7

#2 WATER MANHOLE
N. 593465.6 ft
E. 1226984.6 ft
SAT: 6 PDOP: 2.7

WEATHER
CLOUDY
50-55 F

LAT/LONG COR.
BENCH MARK #2
LAT: 41°35'54.13
LONG: 73°55'30.26
SAT: 5 PDOP: 3.0

#1
LAT: 41°35'54.72
LONG: 73°55'29.95
SAT: 5 PDOP: 3.0

WP-P~~13~~2 5/13/03 0850 Sampled

LAT 41' 35 37.28 N 08:35 (water depth)
LONG 73' 55 42.26 W
SAT 5.
PDOP 3.3

WATER DEPTH: 2ft 9in.

Penetration - 5ft 6in (est)
Recovery - 25"

0-6" Wet brown silt w/ some organic matter including root material 0850

6-12" brown silt w/ some black silt & root matter 0900

12-24" firm brown silt w/ some organic matter

PUSH CORE
OVERCAST, LIGHT BREEZE



WP-P23 5/13/03

LAT: 41' 35 37.61 N 0925
LONG: 73' 55 46.48 W
SAT.= 5
PDOP= 3

WATER DEPTH: ~3ft

PENETRATION: 5 ft 6in
RECOVERY: 1ft 3in

Some Sheen produced during coring.
CORE Collected at 0940

0-6" brown silt w/ some organic matter including root material 1000

6-12" brown silt w/ some organic matter 1010

PUSH CORE
OVERCAST, LIGHT BREEZE

WP. PL1 5/13/03 0945

LAT 41' 35 35.13 N
LONG 73' 55 48.29 W
SAT 4
PDOP 4.3

WATER DEPTH: 3 ft 8"

PENETRATION: 5 ft 6"
RECOVERY: 1 ft 6"

Sample collect at 09:50

0-6" brown silt w/ some organic matter & gray clay 10:20
6-12" ~~6-8" gray clay w/~~ WAA 1030
WAA ~~Some~~ brown silt and organic matter w/ some gray clay 6-8"
12-18" brown silt w/ some gravel and organic matter and med to coarse sand 1040

PUSH CORE
OVERCAST, W/ LIGHT BREEZE & LIGHT RAIN

PICK UP MERE MAC CABLE



WP-T3C 5/13/03 11:15

LAT: 41' 34 52.27 N
LONG: 73' 56 47.79 W
SAT: 5
PDOP: 3.1

WATER DEPTH: 3 ft 5 in.

PENETRATION: 4 ft 4 in
RECOVERY: 11 in

0-6" 0-2" Wet brown silt w/ organic matter 11:25
2-6" brown silt w/ organic matter

~~6-12~~ WAA
6-11" brown silt w/ some organic matter and trace sand & gravel 11:35

PUSH CORE
OVERCAST W/ LIGHT BREEZE & LIGHT RAIN

LUNCH

WP-T3A 5/13/03 1141

Lat = 41° 35' 00.87" N
Long = 73° 56' 41.38" W
Sat = 7
DOOP = 2.4
DEPTH = 3' 5"

Penetration 6ft 2inc
Recovery 2ft

0-6 wet brown silt 0-2" 11:55
gray silt w, some organic 2-6"
matter

6-12" brown/gray silt w, 1205
some silty sand

12-24" brown/gray silt w, 1215
some silty sand

BLIND DUP 1 = WP-T3A (0-6")
Penetration 5ft 10" 1220
Recovery 22"
push core
OVERCAST w, LIGHT RAIN



WP-T3B 5/13/03

Lat = 41° 34' 58.39 N
Long = 73° 56' 42.24 W
Sat = 7
POOP = 2.1

WATER DEPTH 5ft

Penetration = 7ft 8in 4in
Recovery = 28 inch

0-6 Brown silt w, two 1300
seed pods. Gray silt 4-6 in.
Some organic matter 0-6in

6-12" Brown silt w, 1310
Some organic matter
9-11" brown silt w,
trace ~~Some~~ SAND
11-12 gray silt

12-24" Brown silt w, trace 1315
SAND 12-17 in.
and trace organic matter

push core 17-21 ~~brown~~ gray silty sand
LIGHT RAIN 21-24 brown silt w, trace
sand

WP-OD1 ~~6-6~~ 1352

LAT: 41°35'02.74 N
LONG 73° 56' 37.04W
SAT = 5
PDOP = 4.7

WATER DEPTH = 2ft
penetration = 3ft 9in
recovery = 1 ft 7in

0-6" Wet brown silt w/ Some organic matter 1400
6-12" brown silt w/ organic matter & trace gravel 1410
12-19" brown silt w, some gravel and cobble 1420
12 to 14". Brown silt w, some organics inc. wood chip
14-19",

PUSH CORE
LIGHT MIST



WP-T2A 1440

LAT 41°35' 19.49 N
LONG 73° 56' 15.23 W
SAT = 8
PDOP = 2.3

WATER DEPTH 1ft 4in
penetration = ~3ft
Recovery = 1ft 3in

0-6" Wet brown silt w, some organic matter & trace gray silt, 1500
6-12" brown silt w, some organic matter. ] 6-9" 1510
9-12" dark brown sandy silt w/ trace organic matter

PUSH CORE
OVERCAST

WP-T2C 1450

LAT = 41° 35' 15.40 N
LONG = 73° 56' 11.80 W
SAT = 8
PDOP = 2.3

WATER DEPTH = 1ft 6in.
PENETRATION = 3ft 9in
RECOVERY = 2ft

0-6" Wet brown silt 0-3" 1520
Wet brown silt w/ trace SAND ] 3-6"
6-12" 6-8 brown silty 1530
SAND Some cobble & gravel
8-12 brown silt and Some SAND trace organic matter
12-24" Brown silt w/ Some 1535
organic matter 12-15"
15-21" brown Sand w/ trace gravel. 21-24" brown silt w/ Some SAND.

push core
OVERCAST



WP-T2B

LAT = 41° 35' 17.28 N
LONG = 73° 56' 13.08 W
SAT = 8
PDOP = 2.1

WATER DEPTH = 2ft 5in
PENETRATION = 4ft 7in.
RECOVERY = 24in

0-6" Wet brown silt w/ trace organic matter ] 0-2" 1550
2-6" gray silt w/ Some organic matter & trace gravel
6-12" gray SAND & gravel 1555
(Coarse SAND) w/ Some organic matter
12-24" 12-15" gray coarse 1605
sand & gravel
15-18" brown clay & trace organic matter
18-24" gravel medium Coarse Sand & gravel

PUSH CORE
OVERCAST

WPTIB 1630

LAT = 41° 35' 25.45N
LONG = 73° 55' 59.45W
SAT = 7
PDOP = 5.2
WATER DEPTH = 1ft 4in

PENETRATION
RECOVERY

~~0-6"~~

Six Attempts to collect Sample, Insufficient recovery.

Sample location Abandoned.

PUSH CORE
OVERCAST



WP-LGOUT2 (0-6")

LAT = 41° 35' 54.26"N
LONG = 73° 55' 34.10"W
SAT = 8
PDOP = 2.2

VOCs 1735

SVOCs/TAL 1740

0-6" COARSE SAND & GRAVEL

AUGER
OVERCAST

WP-MW4

VOCs 1815
SVOC/TPH

0-6" COARSE SAND & GRAVEL

AUGER
OVERCAST

BLIND DUPZ = WP-MW4

LAT = 41°35' 53.66 N
LONG = 73° 55' 35.34 W
SAT = 7
PDOP = 2.2

WATER DEPTH = 2 ft 10 in

LEAVE SITE 19:20



PARTLY SUNNY
65-70°F

5/14/03
ARRIVE ON SITE 7:10
KEVIN HARTMAN, CHUCK SHARPE, MIKE McCABE (DEC)

GPS BENCHMARKS
#1 TELEPHONE POLE 77315
LAT: 41°35' 54.72" N
LONG: 73°55' 29.94" W
SAT: 5 PDOP: 4.1

#2 MANHOLE COVER WATER
LAT: 41°35' 54.13" N
LONG: 73° 55' 30.26" W
SAT: 6 PDOP: 3.4

8:00 - WP-TIA
WATER DEPTH = 1' 9"
LAT: 41°35' 29.59" N SAT: 5
LONG: 73° 56' 00.16" W PDOP: 3.0

PENETRATION = 4' 8"
RECOVERY = 2' 1"

0-2" BROWN SILT HIGHLY SATURATED
2"-6", BROWN SILT, SOME GRAY SILT, ORGANIC MATTER

6"-12" - BROWN SILT, ORGANIC
DECREASING SATURATION WITH DEPTH
10"-12" - TRACE SANDS

12"-18" BROWN SILT
SOME ORGANICS
18"-21" SILTY SAND GRAY
WITH GRAVEL
21"-24" BROWN SILT, ORGANICS
TRACE SAND AND GRAVEL

MS/MSD COLLECTED
3 CORES COLLECTED FOR ALL SAMPLES

PUSH CORE
PARTLY SUNNY



WP ITC - 9:05
LAT: 41° 35' 23.89" N SAT: 60
LONG: 73° 55' 58.32" W PDOP: 2.1
WATER DEPTH = 6'9"
PENETRATION = 7'8"
RECOVERY = 10"

SAMPLE COLLECTED @ 9:10

0-6" 0-1" BROWN SILT 9:20
HIGH ORGANIC CONT.
GRAVEL
1-5" DK BROWN/GRAY SILTY SAND
GRAVEL
5-6" BROWN SILT
ORGANIC SATURATED
TRACE GRAVEL
6-10" DK BROWN SILT 9:30
TRACE GRAVEL
TRACE SAND

PUSH CORE
PARTLY SUNNY

9:45 - WP-OD2

LAT: 41° 35' 19.26" N  SAS: 4

LONG 73° 56' 17.55" W  PROP: 5.3

WATER DEPTH = 3 Ft

PENETRATION = 5 Ft 10 in

RECOVERY = 22 in

SHELL PRESENT DURING PENETRATION (AS A RESULT OF)

SAMPLE COLLECTED @ 9:50

0-6"  0-1" DK Brown SILT  9:55
HIGHLY SATURATED
SOME ORGANICS
1-6" DK Brown SILT
TRACE SAND
SOME ORGANIC

6-12"  6-12" DK Brown SILT  10:05
SOME ORGANIC
TRACE SAND and GRAVEL

12-22"  12-16" DK Brown SILT  10:15
SOME ORGANIC
TRACE SAND + GRAVEL
16-18" Brown/Gray SILTY SAND
TRACE GRAVEL

PUSH CORE
PARTLY SUNNY



18-21" Brown SILT
TRACE SAND (MED/COARSE) + GRAVEL
TRACE ORGANIC

21-22" Brown SAND/SILT
(MED/COARSE)

10:30 WP-003

LAT = 41° 35' 35.72" N SAT = 6

LONG = 73° 55' 40.85" W PDOP: 2.8

WATER DEPTH = 3 ft 2 in

PENETRATION = 4 ft 5 in

RECOVERY = 13 in

SAMPLE COLLECTION @ 10:35

SHEEN PRESENT DURING PENETRATION

(AS A RESULT OF)

0-6" 0-1" BROWN SILT 10:45

SOME ORGANIC

HIGHLY SATURATED

1-6" COARSE SAND GRAY

GRAVEL

TRACE ORGANICS

6-12" 6-10" SILTY SAND GRAY 10:55

SOME GRAVEL AND ORGANIC

10-12" GRAY COARSE SAND

SOME GRAVEL

PUSH CORE

OVERCAST



11:05 WP-CROUT

(LWD 5/14/03)

Water Depth = 3 ft, 5 in.

Lat = 41° 35' 36.12" N Sat = 8

Long = 73° 55' 34.93" W PDOP: 2.0

Recovery / Penetration = 6 in.

Sample collection @ 1125

by hand auger

Weather: Overcast

0-6" BROWN SAND/SILT

SOME PEBBLES and GRAVEL

11:45

GEORGE KOLB - VILLAGE OF WAPPINGERS FALLS

SPOKE WITH MIKE MACCABE

ANGEL

OVERCAST

12:10 WP29A

LAT = 41° 35' 41.45" N SAT = 6

LONG = 73° 55' 36.02" W POOP = 3.0

WATER DEPTH = 3 Ft 8 in

PENETRATION = 5 Ft 5 in

RECOVERY = 17 in

SAMPLE COLLECTED @ 12:15

POSH CORE / PARTLY SUNNY

0-6" 0-1" BROWN SILT 12:20
SOME SATURATION
TRACE ORGANICS
1-2" BROWN/GRAY SAND/SILT
TRACE GRAVEL AND ORGANICS
2-6" MED/COARSE SAND - GRAY
SOME GRAVEL/PEBBLES AND ORGANIC

6-12" 6-12" BROWN SILT
TRACE ORGANIC AND GRAVEL

12-17" 12-15" BROWN SILT
TRACE ORGANIC AND GRAVEL
15"-17" MED/COARSE, SAND - GRAY
SILTY
TRACE GRAVEL

BLIND DUP COLLECTED @ 12:40
6-12" INTERVAL



12:50 WP-DOT

LAT = 41° 35' 42.39" N SAT = ~~7~~ ~~6~~ 8 (RPH)

LONG = 73° 55' 36.21" W POOP = 2.1

WATER DEPTH = 3 Ft 5 in

PENETRATION = 4 Ft 6 in

RECOVERY = 18 in

SAMPLE COLLECTED @ 12:55

0-6" 0-2" BROWN SILT 13:05 HIGHLY SATURATED
SOME ORGANIC
2-6" GRAY COARSE SAND
SOME GRAVEL / PEBBLES

6-12" 6-10" BROWN SILT 13:15
SATURATED
SOME ORGANIC
TRACE PEBBLE
10-11" GRAY COARSE SAND
SOME PEBBLE
11-12" BROWN SILT

12-18" 12-15" BROWN SILT 13:25
TRACE PEBBLE
15-18" GRAY SAND
TRACE PEBBLE

POSH CORE 13:15 MS/MSD COLLECTED FROM
PARTLY SUNNY 6-12" INTERVAL

SED CORE # 2 13:40 MIDDLE OF BAYMENT AREA

LAT = 41°35'35.09"N SAT = 4

LONG -- 73°55'44.43"W PDOP = 5.3

WATER DEPTH = 2ft 6in

PENETRATION = 3ft 7"

RECOVERY = 1ft 4in

14:00 SED CORE # 3 NEAR ISLAND

LAT 41°35'19.07"N SAT: 6

LONG 73°56'16.41"W PDOP = 3

WATER DEPTH = 2ft

PENETRATION = 5ft 3in

RECOVERY = 23in



14:30 LUNCH

14:40 WP-M3 KRH

~~LAT = 41°35'44.35"N SAT = 7~~ KRH

~~LONG = 73°55'36.95"W PDOP = 2.5~~

WATER DEPTH = ~~1ft 9in~~ KH 2ft (new location)

PENETRATION = 3ft 1in

RECOVERY = 13in

SAMPLE COLLECTED @ 14:45

LAT = 41°35'44.19"N SAT = 7

LONG = 73°55'37.21"W PDOP = 2.4

0-6" 0-2" BROWN SILT 15:00

SOME ORGANIC (ODOR)

HIGHLY SATURATED

2-6" GRAY/DK BROWN SILT

ORGANIC (LEAVES, TWIGS)

6-12" 6-8" GRAY SILTY SAND 15:05

SOME PEBBLE/GRAVEL

8-12" DK BROWN SILT

TRACE GRAVEL AND ORGANIC

OVERCAST

PUSH CORE

15:10 WP-M2

LAT = 41° 35' 48.12" N SAT = 6

LONG = 73° 55' 38.02" W PDOP = 3.8

WATER DEPTH = 23 m

PENETRATION = 8 ft 2 in

RECOVERY = 1 ft 5 in

SAMPLE COLLECTED @ 15:20

0-6" 0-3" BROWN SILT 15:25

HIGHLY SATURATED

3-6" GRAY SILT

SOME ORGANIC

SATURATED

6-12" 6-8" GRAY/BROWN SANDY SILT 15:30

TRACE ORGANIC

8-12" GRAY MED/COARSE SAND

SOME GRAVEL AND PEBBLES

12-17" 12-13.5" REDDISH BROWN SILT 15:35

SOME ORGANIC

13.5-17" GRAY COARSE SAND

SOME PEBBLES

POOR WORK

OVERCAST



SED CORE #4 15:35

LAT = 41° 35' 48.13" N SAT. 7

LONG = 73° 55' 38.16" W PDOP = 3.3

WATER DEPTH = 2 ft 4 in

PENETRATION = 3 ft 11 in

RECOVERY = 19 in ON 4th ATTEMPT

NEAR WP-M2

EQUIPMENT BLANK 16:30

AUGER

BOWLS

SPOONS

STOPPERS

6" CROWN

SPATULA

EQBL-SED2

5/28/03 WAM

0910 processed SED CORE 3
(0-6") and (6-12") intervals
for physical parameter
analysis.

0930 SED CORE ~~2~~ 4 WAM processed
(0-6") and (6-12") intervals

0940 SED CORE 2 processed
(0-6") & (6-12") intervals

0950 WP-T3A processed
(0-6") & (6-12") intervals

# APPENDIX B

## Bathymetry data collected for the Creek RI

O'BRIEN & GERE COMPANIES

| SUBJECT | SHEET | BY | DATE | JOB NO. |
|---|---|---|---|---|
| THREE STAR SITE · Wappinger Creek BATHYMETRY | | WAN | 4/4/2001 | 10653 / 27258. |

Facing east at upstream side

+/- 0.5'

Width 94 ft

top of railing to water surface 11'

Water depth 12'2" 10.5' 10.5' ~9' 5'6"

distance water surface to bottom of bridge ~6'

DOWNSTREAM BRIDGE

58 — 22

Top of railing to water surf. 11'6"

Water depth 10'2" 8.0' 3.5'

Dist. to wtr surf. from bottom of bridge 7'9"

UPSTREAM BRIDGE

END @ 1020 AM

NOTE:

ELECTRICAL WIRES (ABOVE ground) cross creek downstream of downstream bridge.

Upstream of downstream bridge are guide wires from electrical posts to bank on north side of creek.

***Table 1- Approximate water depths at site bridges relative to water surface and bridge distances***

***Table 1a - East Bridge (Upstream)***

| Distance from Water surface to bottom of bridge (ft.) | Water depth (ft.) |
|---|---|
| 1 | 16 |
| 2 | 15 |
| 3 | 14 |
| 4 | 13 |
| 5 | 12 |
| 6 | 11 |
| 7 | 10 |
| 8 | 9 |
| 9 | 8 |
| 10 | 7 |
| 11 | 6 |
| 12 | 5 |

Water samples should be collected approximately 20 ft. from north end of bridge.

***Table 1b - West Bridge (Downstream)***

| Distance from Water surface to bottom of bridge (ft.) | Water depth (ft.) |
|---|---|
| 1 | 15.5 |
| 2 | 14.5 |
| 3 | 13.5 |
| 4 | 12.5 |
| 5 | 11.5 |
| 6 | 10.5 |
| 7 | 9.5 |
| 8 | 8.5 |
| 9 | 7.5 |
| 10 | 6.5 |
| 11 | 5.5 |
| 12 | 4.5 |

Water samples should be collected at the approximate center of the bridge.

Notes:

Sample collection positions based on review of creek bathymetry data collected 4/4/01.

Depths presented in black were measured, depths presented in blue are estimated from measured data.

# APPENDIX C

## Sample location coordinates

**Table 1** *Wappingers Creek Investigation - 2003*

| *Location* | *Lattitude* | *Longitude* |
|---|---|---|
| Wappingers Lake | | |
| WP-LK1 | N: 596333.5 | E: 1228644.2 |
| WP-LK2 | N: 595797.7 | E: 1228096.2 |
| WP-LK3 | N: 595587.8 | E: 1228565.2 |
| WP-LK4 | N: 595310.6 | E: 1228880.7 |
| WP-LK5 | N: 595048.7 | E: 1229323.1 |
| Wappingers Creek | | |
| WP-PL2 | 41 35 37.28 N | 73 55 42.26 W |
| WP-PL3 | 41 35 37.61 N | 73 55 46.48 W |
| WP-PL1 | 41 35 35.13 N | 73 55 48.29 W |
| WP-T3C | 41 34 52.27 N | 73 56 47.79 W |
| WP-T3A | 41 35 00.84 N | 73 56 41.88 W |
| WP-T3B | 41 34 58.39 N | 73 56 42.24 W |
| WP-OD1 | 41 35 02.74 N | 73 56 37.04 W |
| WP-T2A | 41 35 19.49N | 73 56 15.23 W |
| WP-T2C | 41 35 15.40N | 73 56 11.80 W |
| WP-T2B | 41 35 17.28N | 73 56 13.08 W |
| WP-T1B | 41 35 25.43N | 73 55 59.45 W |
| WP-LGOUT2 | 41 35 54.26N | 73 55 34.10 W |
| WP-MW4 | 41 35 53.66N | 73 55 35.34 W |
| WP-T1A | 41 35 29.59N | 73 56 00.16 W |
| WP-T1C | 41 35 23.89 N | 73 55 58.32 W |
| WP-OD2 | 41 35 19.26N | 73 56 17.55 W |
| WP-OD3 | 41 35 35.72N | 73 56 40.85 W |
| WP-CKOUT | 41 35 36.12N | 73 55 34.93 W |
| WP-29A | 41 35 41.45N | 73 55 36.02 W |
| WP-DOT | 41 35 42.39N | 73 55 36.21 W |
| SED CORE 2 | 41 35 35.09N | 73 55 44.43 W |
| WP-M3 | 41 35 44.19N | 73 55 37.21 W |
| WP-M2 | 41 35 48.12N | 73 55 38.02 W |
| SED CORE 4 | 41 35 48.13 N | 73 55 38.16 W |

# APPENDIX D

# DER-10 Background evaluation

# Total PAHs, Carcinogenic PAHs, and BaP Equivalents in Sediments 0-6 inches



**Sediments 0-6 inches depth**

| Sample ID (Units in mg/Kg) | Total PAHs | Total Carcinogenic PAHs | BaP Equivalents |
|---|---|---|---|
| WP-LK01-A | 5.4 J | 2.7 J | 0.60 J |
| WP-LK01-B | 5.5 J | 2.8 J | 0.60 J |
| WP-LK01-C | 5.4 J | 2.8 J | 0.60 J |
| Average LK01A,B,C | 5.4 | 2.8 | 0.60 |
| WP-LK1 | 1.7 J | 0.9 J | 0.30 J |
| WP-LK2 | 1.7 J | 0.7 J | 0.04 J |
| WP-LK3 | 2.6 J | 1.5 J | 0.40 J |
| WP-LK4 | 2.5 J | 1.2 J | 0.30 J |
| WP-LK5 | 4.1 J | 2.2 J | 0.50 J |
| **Based on Natural Logs:** | | | |
| 25th percentile | 1.9 | 1.0 | 0.30 |
| 75th percentile | 3.7 | 2.0 | 0.47 |
| Percentile range | 1.8 | 1.0 | 0.17 |
| X = Range times 1.5 | 2.7 | 1.5 | 0.26 |
| Y = 75th percentile+X | 6.3 | 3.5 | 0.73 |
| Maximum | 5.4 | 2.8 | 0.60 |
| **Maximum Exceeds Y?** | -- | -- | -- |

Sediments 0-6 inches depth

| Sample ID / Units in mg/Kg | Aluminum | Amenable Cyanide | Antimony | Arsenic | Barium | Beryllium | Cadmium | Calcium | Chromium | Chromium, Hexavalent | Cobalt | Copper | Iron | Lead | Magnesium | Manganese | Mercury | Nickel |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WP-LK01-A | 14500 J | | 1.1 UJN | 4.6 J | 94.1 J | 0.57 J | 0.19 UJ | 7600 J | 18.4 J | 17.9 UJ | 8.6 J | 36.7 J | 29800 J | 49.4 J | 7130 J | 594 J | 0.35 UJ | 25.2 J |
| WP-LK01-B | 14200 J | | 1.2 UJN | 5 J | 89.5 J | 0.53 J | 0.21 UJ | 7030 J | 17.7 J | 16 UJ | 7.9 J | 34.2 J | 27000 J | 45.9 J | 6850 J | 460 J | 0.4 UJ | 23.5 J |
| WP-LK01-C | 14600 J | 3.2 UJ | 1.1 UJN | 4.1 J | 90.3 J | 0.57 J | 0.2 UJ | 7240 J | 18.3 J | 13.9 UJ | 8.3 J | 36.7 J | 28600 J | 46.5 J | 6990 J | 569 J | 0.37 UJ | 24.3 J |
| Average LK01A,B,C | 14433 | 3.2 | 1.1 | 4.6 | 91.3 | 0.56 | 0.2 | 7290 | 18.1 | 15.93 | 8.3 | 35.9 | 28467 | 47.3 | 6990 | 541 | 0.37 | 24.3 |
| WP-LK1 | 19200 J | | 2.4 UJN | 4.9 BJ | 120 BJ | 0.86 BJ | 1.3 BJ | 10200 J | 27 J | 54 UJ | 14 BJ | 51 J | 32800 J | 66 J | 8570 J | 707 J | 0.31 J | 33 BJ |
| WP-LK2 | 14500 J | | 3.8 UJN | 4 BJ | 88 BJ | 0.67 BJ | 1.4 BJ | 11900 J | 26 J | 86 UJ | 11 BJ | 90 J | 31800 J | 187 J | 6950 BJ | 579 J | 0.57 J | 29 BJ |
| WP-LK3 | 14300 J | | 3.1 UJN | 6.3 BJ | 92 BJ | 0.64 BJ | 0.8 BJ | 18800 J | 21 J | 14 UJ | 8.8 BJ | 90 J | 26900 J | 79 J | 8150 J | 551 J | 0.29 J | 26 BJ |
| WP-LK4 | 16000 J | | 1.8 UJN | 4.7 BJ | 98 BJ | 0.7 BJ | 0.93 BJ | 11600 J | 22 J | 41 UJ | 11 BJ | 83 J | 29600 J | 99 J | 7310 J | 1000 J | 0.33 J | 26 BJ |
| WP-LK5 | 17600 J | | 1.2 UJN | 4.7 BJ | 100 BJ | 0.81 BJ | 1.2 BJ | 11100 J | 24 J | 28 UJ | 13 BJ | 64 J | 32700 J | 126 J | 8700 J | 637 J | 0.3 J | 30 J |
| **Based on Natural Logs:** | | | | | | | | | | | | | | | | | | |
| 25th percentile | 14,449 | 3.2 | 1.3 | 4.6 | 91 | 0.65 | 0.83 | 10,418 | 21 | 18 | 9.3 | 54 | 28,728 | 69 | 7068 | 558 | 0.30 | 26 |
| 75th percentile | 17,186 | 3.2 | 2.9 | 4.8 | 99 | 0.78 | 1.3 | 11,824 | 25 | 50 | 12 | 88 | 32,473 | 119 | 8463 | 689 | 0.36 | 30 |
| Percentile range | 2,736 | 0 | 1.58 | 0.26 | 8.0 | 0.13 | 0.44 | 1,406 | 4.2 | 32 | 3.2 | 34 | 3,744 | 50 | 1395 | 131 | 0.06 | 3.7 |
| X = Range times 1.5 | 4,105 | 0 | 2.37 | 0.39 | 12.1 | 0.20 | 0.67 | 2,110 | 6.4 | 48 | 4.7 | 51 | 5,617 | 74 | 2093 | 196 | 0.09 | 5.6 |
| Y = 75th percentile+X | 21,290 | 3.2 | 5.3 | 5.2 | 112 | 0.98 | 1.9 | 13,934 | 32 | 99 | 17 | 140 | 38,089 | 193 | 10,556 | 885 | 0.45 | 35 |
| Maximum | 19,200 J | 3.2 UJ | 3.8 UJN | 6.3 BJ | 120 BJ | 0.86 BJ | 1.4 BJ | 18,800 J | 27 J | 86 UJ | 14 BJ | 90 J | 32,800 J | 187 J | 8700 J | 1000 J | 0.57 J | 33 BJ |
| **Maximum Exceeds Y?** | – | – | – | Yes | Yes | – | – | Yes | – | – | – | – | – | – | – | Yes | Yes | – |

| Chem Name | Aluminum | Amenable Cyanide | Antimony | Arsenic | Barium | Beryllium | Cadmium | Calcium | Chromium | Chromium, Hexavalent | Cobalt | Copper | Iron | Lead | Magnesium | Manganese | Mercury | Nickel |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | 7429905 | GIS250011 | 7440360 | 7440382 | 7440393 | 7440417 | 7440439 | 7440702 | 7440473 | 18540299 | 7440484 | 7440508 | 7439896 | 7439921 | 7439954 | 7439965 | 7439976 | 7440020 |
| Values to Use | 19200 J | 3.2 UJ | 3.8 UJN | 5.2 | 112 | 0.86 BJ | 1.4 BJ | 13934 | 27 J | 86 UJ | 14 BJ | 90 J | 32800 J | 187 J | 8700 J | 885.2 | 0.45 | 33 BJ |

Sediments 0-6 inches depth

| Units in mg/Kg<br>Sample ID | Potassium | Selenium | Silver | Sodium | Thallium | Total cyanide | Vanadium | Zinc |
|---|---|---|---|---|---|---|---|---|
| WP-LK01-A | 1090 J | 2.5 J | 0.57 UJ | 124 J | 2.8 UJN | 1.9 UJ | 19.8 J | 204 J |
| WP-LK01-B | 1110 J | 1.6 UJ | 0.64 UJ | 145 J | 3.2 UJN | 2.2 UJ | 18.9 J | 168 J |
| WP-LK01-C | 1140 J | 1.5 UJ | 0.59 UJ | 148 J | 2.9 UJN | 3.2 J | 18.7 J | 162 J |
| Average LK01A,B,C | 1113 | 1.9 | 0.6 | 139 | 3 | 2.433 | 19.1 | 178 |
| WP-LK1 | 1740 BJ | 3 UJ | 1.4 UJ | 330 BJ | 3.5 UJ | 2.7 UJ | 29 BJ | 221 J |
| WP-LK2 | 1510 BJ | 4.8 UJ | 2.2 UJ | 386 BJ | 5.5 UJ | 4.3 UJ | 38 BJ | 359 J |
| WP-LK3 | 1420 BJ | 3.9 UJ | 1.8 UJ | 357 BJ | 4.4 UJ | 3.5 UJ | 29 BJ | 224 J |
| WP-LK4 | 1350 BJ | 2.3 UJ | 1.1 UJ | 212 BJ | 2.6 UJ | 2 UJ | 22 BJ | 228 J |
| WP-LK5 | 1360 BJ | 1.6 UJ | 0.72 UJ | 328 BJ | 1.8 UJ | 1.4 UJ | 26 BJ | 230 J |
| Based on Natural Logs: | | | | | | | | |
| 25th percentile | 1352 | 1.9 | 0.8 | 236 | 2.7 | 2.1 | 23 | 222 |
| 75th percentile | 1487 | 3.7 | 1.7 | 350 | 4.2 | 3.3 | 29 | 229 |
| Percentile range | 134 | 1.7 | 0.9 | 114 | 1.5 | 1.2 | 6.1 | 7.8 |
| X = Range times 1.5 | 202 | 2.6 | 1.3 | 170 | 2.2 | 1.8 | 9.1 | 11.6 |
| Y = 75th percentile+X | 1689 | 6.2 | 3.0 | 520 | 6.4 | 5.1 | 38 | 241 |
| Maximum | 1740 BJ | 4.8 UJ | 2.2 UJ | 386 BJ | 5.5 UJ | 4.3 UJ | 38 BJ | 359 J |
| Maximum Exceeds Y? | Yes | – | – | – | – | – | – | Yes |

| Chem Name | Potassium | Selenium | Silver | Sodium | Thallium | Total cyanide | Vanadium | Zinc |
|---|---|---|---|---|---|---|---|---|
| CAS Number | 7440097 | 7782492 | 7440224 | 7440235 | 7440280 | 57125 | 7440622 | 7440666 |
| Values to Use | 1689 | 4.8 UJ | 2.2 UJ | 386 BJ | 5.5 UJ | 4.3 UJ | 38 BJ | 241 |

# APPENDIX E

## Analytical data tables

# APPENDIX E
# ANALYTICAL DATA TABLES

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# Table A-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Volatile Organic Compound Concentrations

| Sample ID | WP-LK01-A | WP-LK01-A | WP-LK01-A | WP-LK01-B | WP-LK01-B | WP-LK01-B DUP | WP-LK01-B |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Background | Background | Background | Background | Background | Background |
| Sample Date | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 |
| Sample Depth | 0 - 6 in. | 6 - 12 in. | 19 - 25 in. | 0 - 6 in. | 6 - 12 in. | 6 - 12 in. | 25 - 31 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| 1,1,2,2-Tetrachloroethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| 1,1,2-Trichloroethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| 1,1-Dichloroethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| 1,1-Dichloroethene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| 1,2-Dichloroethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| 1,2-Dichloropropane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| 2-Butanone (MEK) | 0.015 J | 0.015 J | 0.028 J | 0.014 J | 0.028 J | 0.036 J | 0.015 J |
| 2-Hexanone | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| 4-Methyl-2-pentanone (MIBK) | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Acetone | 0.040 UJ | 0.039 UJ | 0.070 J | 0.043 U | 0.067 UJ | 0.090 UJ | 0.036 UJ |
| Benzene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Bromodichloromethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Bromoform | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Bromomethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Carbon disulfide | 0.0050 J | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.0090 J | 0.0060 J | 0.0040 J |
| Carbon tetrachloride | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Chlorobenzene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Chloroethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Chloroform | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Chloromethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.010 J | 0.037 UJ | 0.0020 J |
| Dibromochloromethane | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Ethylbenzene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Methylene chloride | 0.038 UJ | 0.029 UJ | 0.011 J | 0.043 UJ | 0.033 UJ | 0.0060 J | 0.021 UJ |
| Styrene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Tetrachloroethene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Toluene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Trichloroethene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Vinyl chloride | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Xylene (total) | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| cis-1,2-Dichloroethene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| cis-1,3-Dichloropropylene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| trans-1,2-Dichloroethene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| trans-1,3-Dichloropropene | 0.038 UJ | 0.029 UJ | 0.021 UJ | 0.043 UJ | 0.033 UJ | 0.037 UJ | 0.021 UJ |
| Total organic carbon (mg/Kg) | 99100 | 47000 | 33800 | 66800 | 62000 | 55200 | 54700 |
| Percent solids (%) | 22.4 | 34.9 | 45.8 | 25 | 32.4 | 33.5 | 47.9 |

NOTES: U - not detected, J - estimated value, B - blank contamination
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



Date Printed: 12/16/2004 10:17:43
DBF File: Q:\10653_NYSDEC\27258_THREESTAR\TEMPDATA.DBF
FXP File: Q:\10653_NYSDEC\27258_THREESTAR\TABLEPRK.FXP

File Number: 10653.27258

# Table A-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Volatile Organic Compound Concentrations

| Sample ID | WP-LK01-C | WP-LK01-C | WP-LK01-C | WP-01-A | WP-04.45-9 | WP-09A | WP-11A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Background | Background | Section 1 | Section 1 | Section 1 | Section 1 |
| Sample Date | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 |
| Sample Depth | 0 - 6 in. | 6 - 12 in. | 26 - 32 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| 1,1,2,2-Tetrachloroethane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| 1,1,2-Trichloroethane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| 1,1-Dichloroethane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| 1,1-Dichloroethene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| 1,2-Dichloroethane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| 1,2-Dichloropropane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| 2-Butanone (MEK) | 0.015 J | 0.036 J | 0.025 J | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| 2-Hexanone | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| 4-Methyl-2-pentanone (MIBK) | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Acetone | 0.040 UJ | 0.11 J | 0.096 J | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Benzene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Bromodichloromethane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Bromoform | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Bromomethane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Carbon disulfide | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Carbon tetrachloride | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Chlorobenzene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Chloroethane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Chloroform | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Chloromethane | 0.0040 J | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Dibromochloromethane | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Ethylbenzene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Methylene chloride | 0.040 UJ | 0.0030 J | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Styrene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Tetrachloroethene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Toluene | 0.0040 J | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Trichloroethene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Vinyl chloride | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Xylene (total) | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| cis-1,2-Dichloroethene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| cis-1,3-Dichloropropylene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| trans-1,2-Dichloroethene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| trans-1,3-Dichloropropene | 0.040 UJ | 0.026 UJ | 0.021 UJ | 0.012 U | 0.013 U | 0.013 UJ | 0.014 U |
| Total organic carbon (mg/Kg) | 58700 | 55500 | 38800 | 18600 | 22100 | 65500 | 76500 |
| Percent solids (%) | 28.8 | 35.7 | 49.8 | 81 | 73.2 | 65.6 | 65.2 |

NOTES: U - not detected, J - estimated value, B - blank contamination
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Volatile Organic Compound Concentrations

| Sample ID | LG-OUT | WP-LGOUT2 | WP-MW4 | WP-MW4 DUP | WP-16 | WP-18 | WP-18 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 1 | Section 1 | Section 1 | Section 1 | Section 1 | Section 2 | Section 2 |
| Sample Date | 05/09/2001 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/09/2001 | 05/09/2001 | 05/09/2001 |
| Sample Depth | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| 1,1,2,2-Tetrachloroethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| 1,1,2-Trichloroethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| 1,1-Dichloroethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| 1,1-Dichloroethene | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| 1,2-Dichloroethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| 1,2-Dichloropropane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| 2-Butanone (MEK) | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.0080 J | 0.0070 J |
| 2-Hexanone | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| 4-Methyl-2-pentanone (MIBK) | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Acetone | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.025 U | 0.017 U |
| Benzene | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Bromodichloromethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Bromoform | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Bromomethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Carbon disulfide | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.0050 J | 0.0020 J |
| Carbon tetrachloride | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Chlorobenzene | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Chloroethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Chloroform | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Chloromethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Dibromochloromethane | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Ethylbenzene | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Methylene chloride | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.0020 J | 0.0040 J | 0.015 U |
| Styrene | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Tetrachloroethene | 0.024 | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Toluene | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Trichloroethene | 0.023 | 0.0010 J | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Vinyl chloride | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Xylene (total) | 0.0020 J | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| cis-1,2-Dichloroethene | 0.0030 J | 0.0020 J | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| cis-1,3-Dichloropropylene | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| trans-1,2-Dichloroethene | 0.0020 J | 0.0010 J | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| trans-1,3-Dichloropropene | 0.013 U | 0.013 U | 0.012 U | 0.012 U | 0.012 U | 0.015 U | 0.015 U |
| Total organic carbon (mg/Kg) | 56000 | 12400 J | 25400 | 12100 | 8770 | 23400 | 24400 |
| Percent solids (%) | 77.2 | 75 | 81 | 79 | 78.6 | 68.4 | 63.9 |

NOTES: U - not detected, J - estimated value, B - blank contamination
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Volatile Organic Compound Concentrations

| Sample ID | WP-29 | WP-29 | WP-29 | WP-PL | WP-PL DUP | WP-PL |
|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/08/2001 | 05/08/2001 | 05/08/2001 |
| Sample Depth | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. | 0 - 6 in. | 0 - 6 in. | 6 - 11 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | |
| 1,1,1-Trichloroethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| 1,1,2,2-Tetrachloroethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| 1,1,2-Trichloroethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| 1,1-Dichloroethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| 1,1-Dichloroethene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| 1,2-Dichloroethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| 1,2-Dichloropropane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| 2-Butanone (MEK) | 0.0080 J | 0.033 J | 0.077 J | 0.037 UJ | 0.034 UJ | 0.028 J |
| 2-Hexanone | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| 4-Methyl-2-pentanone (MIBK) | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Acetone | 0.022 UJ | 0.085 J | 0.17 U | 0.037 UJ | 0.034 UJ | 0.061 J |
| Benzene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Bromodichloromethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Bromoform | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Bromomethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Carbon disulfide | 0.020 UJ | 0.0030 J | 0.011 J | 0.037 UJ | 0.034 UJ | 0.035 UJ |
| Carbon tetrachloride | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Chlorobenzene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Chloroethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Chloroform | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Chloromethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Dibromochloromethane | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Ethylbenzene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Methylene chloride | 0.020 UJ | 0.017 | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Styrene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Tetrachloroethene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Toluene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Trichloroethene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Vinyl chloride | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Xylene (total) | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| cis-1,2-Dichloroethene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| cis-1,3-Dichloropropylene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| trans-1,2-Dichloroethene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| trans-1,3-Dichloropropene | 0.020 UJ | 0.014 U | 0.077 U | 0.037 UJ | 0.034 UJ | 0.025 UJ |
| Total organic carbon (mg/Kg) | 21700 | 7330 | 105000 | 115000 | 115000 | 82300 |
| Percent solids (%) | 56.2 | 62.2 | 58.2 | 25.6 | 24.7 | 39.5 |

NOTES: U - not detected, J - estimated value, B - blank contamination
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-LK1 | WP-LK2 | WP-LK3 | WP-LK4 | WP-LK5 | WP-LK01-A | WP-LK01-A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Background | Background | Background | Background | Background | Background |
| Sample Date | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/10/2001 | 05/10/2001 |
| Sample Depth | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 1,2-Dichlorobenzene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 1,3-Dichlorobenzene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 1,4-Dichlorobenzene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Bis(2-chloroisopropyl) ether | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2,4,5-Trichlorophenol | 4.6 UJ | 6.9 UJ | 6.0 UJ | 3.5 UJ | 2.3 UJ | 3.1 UJ | 4.6 UJ |
| 2,4,6-Trichlorophenol | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2,4-Dichlorophenol | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2,4-Dimethylphenol | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2,4-Dinitrophenol | 4.6 UJ | 6.9 UJ | 6.0 UJ | 3.5 UJ | 2.3 UJ | 3.1 UJ | 4.6 UJ |
| 2,4-Dinitrotoluene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2,6-Dinitrotoluene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2-Chloronaphthalene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2-Chlorophenol | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2-Methylnaphthalene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2-Methylphenol | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 2-Nitroaniline | 4.6 UJ | 6.9 UJ | 6.0 UJ | 3.5 UJ | 2.3 UJ | 3.1 UJ | 4.6 UJ |
| 2-Nitrophenol | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 3,3-Dichlorobenzidine | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 3-Nitroaniline | 4.6 UJ | 6.9 UJ | 6.0 UJ | 3.5 UJ | 2.3 UJ | 3.1 UJ | 4.6 UJ |
| 4,6-Dinitro-2-methylphenol | 4.6 UJ | 6.9 UJ | 6.0 UJ | 3.5 UJ | 2.3 UJ | 3.1 UJ | 4.6 UJ |
| 4-Bromophenyl phenyl ether | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 4-Chloro-3-methylphenol | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 4-Chloroaniline | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 4-Chlorophenyl phenyl ether | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 4-Methylphenol | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| 4-Nitroaniline | 4.6 UJ | 6.9 UJ | 6.0 UJ | 3.5 UJ | 2.3 UJ | 3.1 UJ | 4.6 UJ |
| 4-Nitrophenol | 4.6 UJ | 6.9 UJ | 6.0 UJ | 3.5 UJ | 2.3 UJ | 3.1 UJ | 4.6 UJ |
| Acenaphthene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Acenaphthylene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Anthracene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Benzo(a)anthracene | 1.9 UJ | 2.8 UJ | 0.27 J | 0.20 J | 0.30 J | 0.38 J | 0.21 J |
| Benzo[a]pyrene | 0.22 J | 2.8 UJ | 0.27 J | 0.22 J | 0.37 J | 0.46 J | 0.21 J |
| Benzo(b)fluoranthene | 0.36 J | 0.41 J | 0.54 J | 0.38 J | 0.60 J | 1.0 J | 0.40 J |
| Benzo(ghi)perylene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 0.16 J | 0.23 J | 1.3 UJ | 1.9 UJ |
| Benzo(k)fluoranthene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.21 J | 0.29 J | 1.9 UJ |
| Butyl benzyl phthalate | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Carbazole | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Chrysene | 0.27 J | 0.30 J | 0.37 J | 0.28 J | 0.44 J | 0.59 J | 0.28 J |
| Di-n-butyl phthalate | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-LK1 | WP-LK2 | WP-LK3 | WP-LK4 | WP-LK5 | WP-LK01-A | WP-LK01-A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Background | Background | Background | Background | Background | Background |
| Sample Date | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/10/2001 | 05/10/2001 |
| Sample Depth | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Dibenzo(a,h)anthracene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Dibenzofuran | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Diethyl phthalate | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Dimethyl phthalate | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Fluoranthene | 0.42 J | 0.47 J | 0.55 J | 0.45 J | 0.66 J | 0.98 J | 0.44 J |
| Fluorene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Hexachlorobenzene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Hexachlorobutadiene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Hexachlorocyclopentadiene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Hexachloroethane | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Indeno(1,2,3-cd)pyrene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 0.15 J | 0.24 J | 1.3 UJ | 1.9 UJ |
| Isophorone | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| N-Nitrosodipropylamine | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| N-Nitrosodiphenylamine | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Naphthalene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Nitrobenzene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Pentachlorophenol | 4.6 UJ | 6.9 UJ | 6.0 UJ | 3.5 UJ | 2.3 UJ | 3.1 UJ | 4.6 UJ |
| Phenanthrene | 1.9 UJ | 2.8 UJ | 2.4 UJ | 0.17 J | 0.23 J | 0.41 J | 0.23 J |
| Phenol | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Pyrene | 0.42 J | 0.48 J | 0.61 J | 0.46 J | 0.77 J | 1.3 J | 0.60 J |
| Bis(2-chloroethoxy)methane | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Bis(2-chloroethyl)ether | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.3 UJ | 1.9 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | 1.9 UJ | 2.8 UJ | 2.4 UJ | 1.4 UJ | 0.93 UJ | 1.1 J | 0.52 J |
| Total organic carbon (mg/Kg) | 102000 J | 91600 J | 63300 J | 42100 J | 46100 J | 99100 | 47000 |
| Percent solids (%) | 18 | 12 | 14 | 25 | 36 | 22.4 | 34.9 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-LK01-A | WP-LK01-B | WP-LK01-B | WP-LK01-B DUP | WP-LK01-B | WP-LK01-C | WP-LK01-C |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Background | Background | Background | Background | Background | Background |
| Sample Date | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 |
| Sample Depth | 19 - 25 in. | 0 - 6 in. | 6 - 12 in. | 6 - 12 in. | 25 - 31 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 1,2-Dichlorobenzene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 1,3-Dichlorobenzene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 1,4-Dichlorobenzene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Bis(2-chloroisopropyl) ether | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2,4,5-Trichlorophenol | 1.7 UJ | 3.5 UJ | 2.7 UJ | 3.0 UJ | 1.7 UJ | 3.2 UJ | 2.1 UJ |
| 2,4,6-Trichlorophenol | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2,4-Dichlorophenol | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2,4-Dimethylphenol | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2,4-Dinitrophenol | 1.7 UJ | 3.5 UJ | 2.7 UJ | 3.0 UJ | 1.7 UJ | 3.2 UJ | 2.1 UJ |
| 2,4-Dinitrotoluene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2,6-Dinitrotoluene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2-Chloronaphthalene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2-Chlorophenol | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2-Methylnaphthalene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2-Methylphenol | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 2-Nitroaniline | 1.7 UJ | 3.5 UJ | 2.7 UJ | 3.0 UJ | 1.7 UJ | 3.2 UJ | 2.1 UJ |
| 2-Nitrophenol | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 3,3-Dichlorobenzidine | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 3-Nitroaniline | 1.7 UJ | 3.5 UJ | 2.7 UJ | 3.0 UJ | 1.7 UJ | 3.2 UJ | 2.1 UJ |
| 4,6-Dinitro-2-methylphenol | 1.7 UJ | 3.5 UJ | 2.7 UJ | 3.0 UJ | 1.7 UJ | 3.2 UJ | 2.1 UJ |
| 4-Bromophenyl phenyl ether | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 4-Chloro-3-methylphenol | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 4-Chloroaniline | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 4-Chlorophenyl phenyl ether | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 4-Methylphenol | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| 4-Nitroaniline | 1.7 UJ | 3.5 UJ | 2.7 UJ | 3.0 UJ | 1.7 UJ | 3.2 UJ | 2.1 UJ |
| 4-Nitrophenol | 1.7 UJ | 3.5 UJ | 2.7 UJ | 3.0 UJ | 1.7 UJ | 3.2 UJ | 2.1 UJ |
| Acenaphthene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Acenaphthylene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Anthracene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Benzo(a)anthracene | 0.13 J | 0.40 J | 0.27 J | 0.25 J | 0.091 J | 0.39 J | 0.20 J |
| Benzo[a]pyrene | 0.11 J | 0.46 J | 0.27 J | 0.25 J | 0.094 J | 0.42 J | 0.22 J |
| Benzo(b)fluoranthene | 0.21 J | 0.79 J | 0.54 J | 0.48 J | 0.16 J | 0.80 J | 0.37 J |
| Benzo(ghi)perylene | 0.69 UJ | 0.16 J | R | 1.2 UJ | 0.69 UJ | 0.19 J | 0.095 J |
| Benzo(k)fluoranthene | 0.075 J | 0.32 J | 0.20 J | 0.16 J | 0.69 UJ | 0.28 J | 0.12 J |
| Butyl benzyl phthalate | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Carbazole | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Chrysene | 0.18 J | 0.59 J | 0.34 J | 0.38 J | 0.14 J | 0.64 J | 0.26 J |
| Di-n-butyl phthalate | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-LK01-A | WP-LK01-B | WP-LK01-B | WP-LK01-B DUP | WP-LK01-B | WP-LK01-C | WP-LK01-C |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Background | Background | Background | Background | Background | Background |
| Sample Date | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 |
| Sample Depth | 19 - 25 in. | 0 - 6 in. | 6 - 12 in. | 6 - 12 in. | 25 - 31 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.69 UJ | 1.4 UJ | R | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Dibenzo(a,h)anthracene | 0.69 UJ | 1.4 UJ | R | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Dibenzofuran | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Diethyl phthalate | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Dimethyl phthalate | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Fluoranthene | 0.24 J | 0.89 J | 0.54 J | 0.55 J | 0.19 J | 0.93 J | 0.44 J |
| Fluorene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Hexachlorobenzene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Hexachlorobutadiene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Hexachlorocyclopentadiene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Hexachloroethane | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Indeno(1,2,3-cd)pyrene | 0.69 UJ | 0.25 J | R | 1.2 UJ | 0.69 UJ | 0.31 J | 0.13 J |
| Isophorone | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| N-Nitrosodipropylamine | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| N-Nitrosodiphenylamine | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Naphthalene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Nitrobenzene | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Pentachlorophenol | 1.7 UJ | 3.5 UJ | 2.7 UJ | 3.0 UJ | 1.7 UJ | 3.2 UJ | 2.1 UJ |
| Phenanthrene | 0.14 J | 0.48 J | 0.25 J | 0.30 J | 0.12 J | 0.44 J | 0.23 J |
| Phenol | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Pyrene | 0.34 J | 1.2 J | 0.83 J | 0.69 J | 0.25 J | 1.0 J | 0.49 J |
| Bis(2-chloroethoxy)methane | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Bis(2-chloroethyl)ether | 0.69 UJ | 1.4 UJ | 1.1 UJ | 1.2 UJ | 0.69 UJ | 1.3 UJ | 0.85 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.29 J | 0.56 J | 0.40 J | 0.46 J | 0.17 J | 0.48 J | 0.31 J |
| Total organic carbon (mg/Kg) | 33800 | 66800 | 62000 | 55200 | 54700 | 58700 | 55500 |
| Percent solids (%) | 45.8 | 25 | 32.4 | 33.5 | 47.9 | 28.8 | 35.7 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-LK01-C | WP-01-A | WP-04.45-9 | WP-09A | WP-11A | LG-OUT | WP-LGOUT2 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Section 1 | Section 1 | Section 1 | Section 1 | Section 1 | Section 1 |
| Sample Date | 05/10/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/13/2003 |
| Sample Depth | 26 - 32 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 1,2-Dichlorobenzene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.14 J | 0.066 J |
| 1,3-Dichlorobenzene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 1,4-Dichlorobenzene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Bis(2-chloroisopropyl) ether | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2,4,5-Trichlorophenol | 1.7 UJ | 0.95 U | 5.3 U | 1.0 U | 1.1 U | 2.1 U | 1.1 U |
| 2,4,6-Trichlorophenol | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2,4-Dichlorophenol | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2,4-Dimethylphenol | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2,4-Dinitrophenol | 1.7 UJ | 0.95 U | 5.3 U | 1.0 U | 1.1 U | 2.1 U | 1.1 U |
| 2,4-Dinitrotoluene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2,6-Dinitrotoluene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2-Chloronaphthalene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2-Chlorophenol | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2-Methylnaphthalene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2-Methylphenol | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 2-Nitroaniline | 1.7 UJ | 0.95 U | 5.3 U | 1.0 U | 1.1 U | 2.1 U | 1.1 U |
| 2-Nitrophenol | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 3,3-Dichlorobenzidine | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 3-Nitroaniline | 1.7 UJ | 0.95 U | 5.3 U | 1.0 U | 1.1 U | 2.1 U | 1.1 U |
| 4,6-Dinitro-2-methylphenol | 1.7 UJ | 0.95 U | 5.3 U | 1.0 U | 1.1 U | 2.1 U | 1.1 U |
| 4-Bromophenyl phenyl ether | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 4-Chloro-3-methylphenol | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 4-Chloroaniline | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 4-Chlorophenyl phenyl ether | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 4-Methylphenol | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| 4-Nitroaniline | 1.7 UJ | 0.95 U | 5.3 U | 1.0 U | 1.1 U | 2.1 U | 1.1 U |
| 4-Nitrophenol | 1.7 UJ | 0.95 U | 5.3 U | 1.0 U | 1.1 U | 2.1 U | 1.1 U |
| Acenaphthene | 0.69 UJ | 0.40 U | 0.43 J | 0.43 U | 0.45 U | 0.096 J | 0.44 U |
| Acenaphthylene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Anthracene | 0.69 UJ | 0.40 U | 1.9 J | 0.10 J | 0.45 U | 0.39 J | 0.15 J |
| Benzo(a)anthracene | 0.13 J | 0.40 U | 6.1 | 0.29 J | 0.34 J | 2.6 | 0.65 |
| Benzo[a]pyrene | 0.18 J | 0.40 U | 5.9 | 0.27 J | 0.38 J | 3.6 | 0.65 |
| Benzo(b)fluoranthene | 0.24 J | 0.047 J | 8.8 | 0.46 | 0.48 | 4.6 | 0.81 |
| Benzo(ghi)perylene | 0.38 J | 0.40 U | 1.4 J | 0.12 J | 0.22 J | 1.7 | 0.32 J |
| Benzo(k)fluoranthene | 0.69 UJ | 0.40 U | 2.2 | 0.15 J | 0.18 J | 1.4 | 0.29 J |
| Butyl benzyl phthalate | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Carbazole | 0.69 UJ | 0.40 U | 1.2 J | 0.053 J | 0.45 U | 0.20 J | 0.088 J |
| Chrysene | 0.19 J | 0.40 U | 5.8 | 0.41 J | 0.34 J | 2.5 | 0.60 |
| Di-n-butyl phthalate | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-LK01-C | WP-01-A | WP-04.45-9 | WP-09A | WP-11A | LG-OUT | WP-LGOUT2 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Section 1 | Section 1 | Section 1 | Section 1 | Section 1 | Section 1 |
| Sample Date | 05/10/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/13/2003 |
| Sample Depth | 26 - 32 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Dibenzo(a,h)anthracene | 0.69 UJ | 0.40 U | 0.67 J | 0.43 U | 0.45 U | 0.90 | 0.12 J |
| Dibenzofuran | 0.69 UJ | 0.40 U | 0.47 J | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Diethyl phthalate | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Dimethyl phthalate | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Fluoranthene | 0.27 J | 0.050 J | 11 | 0.64 | 0.49 | 2.8 | 0.97 |
| Fluorene | 0.69 UJ | 0.40 U | 0.41 J | 0.054 J | 0.45 U | 0.099 J | 0.44 U |
| Hexachlorobenzene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Hexachlorobutadiene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Hexachlorocyclopentadiene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Hexachloroethane | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Indeno(1,2,3-cd)pyrene | 0.11 J | 0.40 U | 2.2 J | 0.18 J | 0.26 J | 2.6 | 0.36 J |
| Isophorone | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| N-Nitrosodipropylamine | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| N-Nitrosodiphenylamine | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Naphthalene | 0.69 UJ | 0.40 U | 0.37 J | 0.43 U | 0.45 U | 0.13 J | 0.048 J |
| Nitrobenzene | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Pentachlorophenol | 1.7 UJ | 0.95 U | 5.3 U | 1.0 U | 1.1 U | 2.1 U | 1.1 U |
| Phenanthrene | 0.15 J | 0.40 U | 7.5 | 0.61 | 0.19 J | 1.5 | 0.64 |
| Phenol | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Pyrene | 0.37 J | 0.053 J | 9.2 | 0.75 | 0.53 | 3.3 | 1.1 |
| Bis(2-chloroethoxy)methane | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Bis(2-chloroethyl)ether | 0.69 UJ | 0.40 U | 2.2 U | 0.43 U | 0.45 U | 0.85 U | 0.44 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.16 J | 0.097 J | 2.2 U | 0.49 | 0.14 J | 0.55 J | 0.44 U |
| Total organic carbon (mg/Kg) | 38800 | 18600 | 22100 | 65500 | 76500 | 56000 | 12400 J |
| Percent solids (%) | 49.8 | 81 | 73.2 | 65.6 | 65.2 | 77.2 | 75 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-MW4 | WP-MW4 DUP | WP-16 | WP-18 | WP-18 | WP-M2 | WP-M2 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 1 | Section 1 | Section 1 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/14/2003 | 05/14/2003 |
| Sample Depth | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 1,2-Dichlorobenzene | 0.41 U | 0.19 J | 0.048 J | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 1,3-Dichlorobenzene | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 1,4-Dichlorobenzene | 0.41 U | 0.092 J | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Bis(2-chloroisopropyl) ether | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2,4,5-Trichlorophenol | 1.0 U | 1.1 U | 0.96 U | 1.2 U | 1.2 U | 3.0 UJ | 13 U |
| 2,4,6-Trichlorophenol | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2,4-Dichlorophenol | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2,4-Dimethylphenol | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2,4-Dinitrophenol | 1.0 U | 1.1 U | 0.96 U | 1.2 U | 1.2 U | 3.0 UJ | 13 U |
| 2,4-Dinitrotoluene | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2,6-Dinitrotoluene | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2-Chloronaphthalene | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2-Chlorophenol | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2-Methylnaphthalene | 0.052 J | 0.14 J | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2-Methylphenol | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 2-Nitroaniline | 1.0 U | 1.1 U | 0.96 U | 1.2 U | 1.2 U | 3.0 UJ | 13 U |
| 2-Nitrophenol | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 3,3-Dichlorobenzidine | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 3-Nitroaniline | 1.0 U | 1.1 U | 0.96 U | 1.2 U | 1.2 U | 3.0 UJ | 13 U |
| 4,6-Dinitro-2-methylphenol | 1.0 U | 1.1 U | 0.96 U | 1.2 U | 1.2 U | 3.0 UJ | 13 U |
| 4-Bromophenyl phenyl ether | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 4-Chloro-3-methylphenol | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 4-Chloroaniline | 0.047 J | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 4-Chlorophenyl phenyl ether | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 4-Methylphenol | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| 4-Nitroaniline | 1.0 U | 1.1 U | 0.96 U | 1.2 U | 1.2 U | 3.0 UJ | 13 U |
| 4-Nitrophenol | 1.0 U | 1.1 U | 0.96 U | 1.2 U | 1.2 U | 3.0 UJ | 13 U |
| Acenaphthene | 0.042 J | 0.18 J | 0.087 J | 0.13 J | 0.51 U | 1.2 UJ | 1.4 J |
| Acenaphthylene | 0.47 | 0.38 J | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 1.7 J |
| Anthracene | 0.80 | 1.2 | 0.27 J | 0.33 J | 0.51 U | 0.34 J | 5.8 |
| Benzo(a)anthracene | 3.8 D | 4.7 D | 0.82 | 0.95 | 0.082 J | 1.4 J | 17 |
| Benzo[a]pyrene | 3.7 D | 4.5 D | 0.67 | 0.74 | 0.066 J | 1.1 J | 14 |
| Benzo(b)fluoranthene | 4.5 D | 6.2 D | 0.92 | 1.0 | 0.14 J | 2.0 J | 17 |
| Benzo(ghi)perylene | 1.2 | 1.5 | 0.29 J | 0.23 J | 0.51 U | 0.65 J | 4.3 J |
| Benzo(k)fluoranthene | 1.4 | 2.0 | 0.31 J | 0.36 J | 0.51 U | 0.59 J | 6.8 |
| Butyl benzyl phthalate | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Carbazole | 0.14 J | 0.42 J | 0.12 J | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Chrysene | 2.9 | 4.2 D | 0.80 | 0.84 | 0.089 J | 1.2 J | 14 |
| Di-n-butyl phthalate | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-MW4 | WP-MW4 DUP | WP-16 | WP-18 | WP-18 | WP-M2 | WP-M2 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 1 | Section 1 | Section 1 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/14/2003 | 05/14/2003 |
| Sample Depth | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Dibenzo(a,h)anthracene | 0.58 | 0.69 | 0.16 J | 0.11 J | 0.51 U | 0.23 J | 1.9 J |
| Dibenzofuran | 0.12 J | 0.25 J | 0.059 J | 0.49 U | 0.51 U | 1.2 UJ | 0.70 J |
| Diethyl phthalate | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Dimethyl phthalate | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Fluoranthene | 6.4 D | 9.0 D | 1.5 | 1.7 | 0.20 J | 2.4 | 33 |
| Fluorene | 0.20 J | 0.30 J | 0.12 J | 0.49 U | 0.51 U | 1.2 UJ | 1.6 J |
| Hexachlorobenzene | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Hexachlorobutadiene | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Hexachlorocyclopentadiene | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Hexachloroethane | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Indeno(1,2,3-cd)pyrene | 1.6 | 1.9 | 0.47 | 0.31 J | 0.51 U | 0.66 J | 5.1 J |
| Isophorone | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| N-Nitrosodipropylamine | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| N-Nitrosodiphenylamine | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Naphthalene | 0.16 J | 0.44 | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 1.2 J |
| Nitrobenzene | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Pentachlorophenol | 1.0 U | 1.1 U | 0.96 U | 1.2 U | 1.2 U | 3.0 UJ | 13 U |
| Phenanthrene | 2.4 | 4.4 D | 1.3 | 0.57 | 0.060 J | 0.84 J | 11 |
| Phenol | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Pyrene | 5.4 D | 7.2 D | 1.5 | 1.6 | 0.29 J | 2.7 J | 29 |
| Bis(2-chloroethoxy)methane | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Bis(2-chloroethyl)ether | 0.41 U | 0.42 U | 0.40 U | 0.49 U | 0.51 U | 1.2 UJ | 5.1 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.41 U | 0.42 U | 0.25 J | 0.16 J | 0.14 J | 1.2 UJ | 5.1 U |
| Total organic carbon (mg/Kg) | 25400 | 12100 | 8770 | 23400 | 24400 | 11300 e BJ | 11300 e BJ |
| Percent solids (%) | 81 | 79 | 78.6 | 68.4 | 63.9 | 28 | 66 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-M2 | WP-M3 | WP-M3 | WP-DOT | WP-DOT | WP-DOT | WP-29A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | 12 - 17 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 1,2-Dichlorobenzene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.4 |
| 1,3-Dichlorobenzene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 0.20 J |
| 1,4-Dichlorobenzene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.3 |
| Bis(2-chloroisopropyl) ether | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 2,4,5-Trichlorophenol | 1.1 U | 2.1 U | 13 U | 13 U | 27 U | 46 U | 2.8 U |
| 2,4,6-Trichlorophenol | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 2,4-Dichlorophenol | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 2,4-Dimethylphenol | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 2,4-Dinitrophenol | 1.1 U | 2.1 U | 13 U | 13 U | 27 U | 46 U | 2.8 U |
| 2,4-Dinitrotoluene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 2,6-Dinitrotoluene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 2-Chloronaphthalene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 2-Chlorophenol | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 2-Methylnaphthalene | 0.42 U | 0.85 U | 0.97 J | 5.2 U | 11 U | 18 U | 1.1 U |
| 2-Methylphenol | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 2-Nitroaniline | 1.1 U | 2.1 U | 13 U | 13 U | 27 U | 46 U | 2.8 U |
| 2-Nitrophenol | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 3,3-Dichlorobenzidine | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 3-Nitroaniline | 1.1 U | 2.1 U | 13 U | 13 U | 27 U | 46 U | 2.8 U |
| 4,6-Dinitro-2-methylphenol | 1.1 U | 2.1 U | 13 U | 13 U | 27 U | 46 U | 2.8 U |
| 4-Bromophenyl phenyl ether | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 4-Chloro-3-methylphenol | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 4-Chloroaniline | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 4-Chlorophenyl phenyl ether | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 4-Methylphenol | 0.043 J | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| 4-Nitroaniline | 1.1 U | 2.1 U | 13 U | 13 U | 27 U | 46 U | 2.8 U |
| 4-Nitrophenol | 1.1 U | 2.1 U | 13 U | 13 U | 27 U | 46 U | 2.8 U |
| Acenaphthene | 1.0 | 0.095 J | 2.7 J | 5.2 U | 4.9 J | 6.6 J | 0.25 J |
| Acenaphthylene | 0.21 J | 0.11 J | 5.1 U | 1.2 J | 11 U | 18 U | 0.29 J |
| Anthracene | 1.0 | 0.34 J | 5.1 | 4.5 J | 17 | 31 | 1.1 J |
| Benzo(a)anthracene | 4.2 D | 1.3 | 8.7 | 13 | 27 | 27 | 3.8 |
| Benzo[a]pyrene | 3.6 D | 1.2 | 8.1 | 10 | 20 | 21 | 3.6 DJ |
| Benzo(b)fluoranthene | 4.4 D | 1.8 | 9.5 | 12 | 25 | 24 | 4.7 DJ |
| Benzo(ghi)perylene | 1.2 JD | 0.64 J | 2.5 J | 2.8 J | 8.6 J | 7.0 J | 1.1 DJ |
| Benzo(k)fluoranthene | 1.7 JD | 0.68 J | 4.0 J | 4.0 J | 7.7 J | 8.3 J | 1.8 DJ |
| Butyl benzyl phthalate | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Carbazole | 0.16 J | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Chrysene | 3.7 D | 1.5 | 8.6 | 10 | 22 | 24 | 3.4 |
| Di-n-butyl phthalate | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-M2 | WP-M3 | WP-M3 | WP-DOT | WP-DOT | WP-DOT | WP-29A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | 12 - 17 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.42 UJ | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 UJ |
| Dibenzo(a,h)anthracene | 0.53 JD | 0.23 J | 1.2 J | 1.2 J | 3.6 J | 2.8 J | 0.45 DJ |
| Dibenzofuran | 0.32 J | 0.85 U | 1.4 J | 5.2 U | 2.5 J | 3.1 J | 0.13 J |
| Diethyl phthalate | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Dimethyl phthalate | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Fluoranthene | 8.4 D | 2.4 | 18 | 24 | 61 | 65 | 6.0 |
| Fluorene | 0.51 | 0.85 U | 1.9 J | 0.59 J | 6.6 J | 9.2 J | 0.30 J |
| Hexachlorobenzene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Hexachlorobutadiene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Hexachlorocyclopentadiene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Hexachloroethane | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Indeno(1,2,3-cd)pyrene | 1.4 JD | 0.63 J | 3.2 J | 3.6 J | 9.3 J | 7.6 J | 1.2 DJ |
| Isophorone | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| N-Nitrosodipropylamine | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| N-Nitrosodiphenylamine | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Naphthalene | 0.34 J | 0.85 U | 2.6 J | 0.54 J | 3.1 J | 2.6 J | 0.33 J |
| Nitrobenzene | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Pentachlorophenol | 1.1 U | 2.1 U | 13 U | 13 U | 27 U | 46 U | 2.8 U |
| Phenanthrene | 1.6 | 1.0 | 14 | 6.9 | 45 | 80 | 2.4 |
| Phenol | 0.11 J | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Pyrene | 7.7 D | 2.9 | 15 | 20 | 47 | 54 | 6.0 |
| Bis(2-chloroethoxy)methane | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Bis(2-chloroethyl)ether | 0.42 U | 0.85 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.42 U | 1.2 U | 5.1 U | 5.2 U | 11 U | 18 U | 1.1 U |
| Total organic carbon (mg/Kg) | 11300 BJ | 63800 BJ | 50000 e BJ | 13400 BJ | 13400 e BJ | 13400 e BJ | 50000 e BJ |
| Percent solids (%) | 79 | 39 | 65 | 64 | 61 | 73 | 59 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.


CONTINUED

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-29A | WP-29A DUP | WP-29A | WP-29 | WP-29 | WP-29 | WP-CKOUT |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/14/2003 |
| Sample Depth | 6 - 12 in. | 6 - 12 in. | 12 - 17 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 1,2-Dichlorobenzene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 1,3-Dichlorobenzene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 1,4-Dichlorobenzene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Bis(2-chloroisopropyl) ether | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 2,4,5-Trichlorophenol | 16 U | 61 U | 56 U | 41 UJ | 22 U | 140 U | 1.2 U |
| 2,4,6-Trichlorophenol | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 2,4-Dichlorophenol | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 2,4-Dimethylphenol | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 2,4-Dinitrophenol | 16 U | 61 U | 56 U | 41 UJ | 22 U | 140 U | 1.2 U |
| 2,4-Dinitrotoluene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 2,6-Dinitrotoluene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 2-Chloronaphthalene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 2-Chlorophenol | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 2-Methylnaphthalene | 1.9 J | 2.7 J | 22 U | 17 UJ | 1.1 J | 56 U | 0.48 U |
| 2-Methylphenol | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 2-Nitroaniline | 16 U | 61 U | 56 U | 41 UJ | 22 U | 140 U | 1.2 U |
| 2-Nitrophenol | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 3,3-Dichlorobenzidine | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 3-Nitroaniline | 16 U | 61 U | 56 U | 41 UJ | 22 U | 140 U | 1.2 U |
| 4,6-Dinitro-2-methylphenol | 16 U | 61 U | 56 U | 41 UJ | 22 U | 140 U | 1.2 U |
| 4-Bromophenyl phenyl ether | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 4-Chloro-3-methylphenol | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 4-Chloroaniline | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 UJ |
| 4-Chlorophenyl phenyl ether | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 4-Methylphenol | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| 4-Nitroaniline | 16 U | 61 U | 56 U | 41 UJ | 22 U | 140 U | 1.2 U |
| 4-Nitrophenol | 16 U | 61 U | 56 U | 41 UJ | 22 U | 140 U | 1.2 U |
| Acenaphthene | 6.6 | 12 J | 9.6 J | 11 J | 9.1 | 46 J | 0.48 U |
| Acenaphthylene | 0.82 J | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.055 J |
| Anthracene | 14 | 32 | 29 | 6.0 J | 15 | 86 | 0.16 J |
| Benzo(a)anthracene | 19 | 33 | 30 | 20 J | 13 | 84 | 0.92 |
| Benzo[a]pyrene | 16 | 27 | 23 | 17 J | 9.3 | 64 | 0.94 |
| Benzo(b)fluoranthene | 20 | 29 | 28 | 19 J | 11 | 74 | 1.4 |
| Benzo(ghi)perylene | 4.2 J | 9.5 J | 7.2 J | 6.2 J | 2.6 J | 15 J | 0.25 J |
| Benzo(k)fluoranthene | 8.1 | 13 J | 8.0 J | 6.5 J | 3.7 J | 32 J | 0.60 |
| Butyl benzyl phthalate | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Carbazole | 6.3 U | 24 U | 22 U | 5.2 J | 9.0 U | 56 U | 0.48 U |
| Chrysene | 18 | 31 | 25 | 18 J | 11 | 77 | 0.76 |
| Di-n-butyl phthalate | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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File Number: 10653.27258

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-29A | WP-29A DUP | WP-29A | WP-29 | WP-29 | WP-29 | WP-CKOUT |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/14/2003 |
| Sample Depth | 6 - 12 in. | 6 - 12 in. | 12 - 17 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Dibenzo(a,h)anthracene | 1.9 J | 3.8 J | 3.1 J | 2.3 J | 1.7 J | 9.8 J | 0.11 J |
| Dibenzofuran | 2.9 J | 6.0 J | 3.7 J | 2.3 J | 5.4 J | 30 J | 0.48 U |
| Diethyl phthalate | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Dimethyl phthalate | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Fluoranthene | 45 | 71 | 72 | 43 J | 34 | 180 | 2.0 |
| Fluorene | 6.2 J | 14 J | 11 J | 6.2 J | 8.9 J | 46 J | 0.48 U |
| Hexachlorobenzene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Hexachlorobutadiene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Hexachlorocyclopentadiene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Hexachloroethane | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Indeno(1,2,3-cd)pyrene | 5.3 J | 10 J | 9.0 J | 6.9 J | 4.7 J | 28 J | 0.31 J |
| Isophorone | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| N-Nitrosodipropylamine | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| N-Nitrosodiphenylamine | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Naphthalene | 5.5 J | 6.8 J | 2.6 J | 3.1 J | 2.1 J | 56 U | 0.072 J |
| Nitrobenzene | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Pentachlorophenol | 16 U | 61 U | 56 U | 41 UJ | 22 U | 140 U | 1.2 U |
| Phenanthrene | 44 | 86 | 87 | 14 J | 42 | 210 | 0.37 J |
| Phenol | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Pyrene | 36 | 64 | 59 | 35 J | 28 | 140 | 1.6 |
| Bis(2-chloroethoxy)methane | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Bis(2-chloroethyl)ether | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 6.3 U | 24 U | 22 U | 17 UJ | 9.0 U | 56 U | 0.48 U |
| Total organic carbon (mg/Kg) | 62900 BJ | 70100 BJ | 50000 e BJ | 21700 | 7330 | 105000 | 35900 |
| Percent solids (%) | 53 | 55 | 60 | 56.2 | 62.2 | 58.2 | 70 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

CONTINUED

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-OD3 | WP-OD3 | WP-PL | WP-PL DUP | WP-PL | WP-PL1 | WP-PL1 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/08/2001 | 05/08/2001 | 05/08/2001 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 0 - 6 in. | 6 - 11 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 1,2-Dichlorobenzene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 1,3-Dichlorobenzene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 1,4-Dichlorobenzene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Bis(2-chloroisopropyl) ether | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 2,4,5-Trichlorophenol | 1.2 U | 1.2 U | 3.0 UJ | 2.8 UJ | 2.0 UJ | 2.9 UJ | 1.9 UJ |
| 2,4,6-Trichlorophenol | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 2,4-Dichlorophenol | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 2,4-Dimethylphenol | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 2,4-Dinitrophenol | 1.2 U | 1.2 U | 3.0 UJ | 2.8 UJ | 2.0 UJ | 2.9 UJ | 1.9 UJ |
| 2,4-Dinitrotoluene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 2,6-Dinitrotoluene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 2-Chloronaphthalene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 2-Chlorophenol | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 2-Methylnaphthalene | 0.46 U | 0.12 J | 1.2 UJ | 1.1 UJ | 0.12 J | 1.1 UJ | 0.78 UJ |
| 2-Methylphenol | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 2-Nitroaniline | 1.2 U | 1.2 U | 3.0 UJ | 2.8 UJ | 2.0 UJ | 2.9 UJ | 1.9 UJ |
| 2-Nitrophenol | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 3,3-Dichlorobenzidine | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 3-Nitroaniline | 1.2 U | 1.2 U | 3.0 UJ | 2.8 UJ | 2.0 UJ | 2.9 UJ | 1.9 UJ |
| 4,6-Dinitro-2-methylphenol | 1.2 U | 1.2 U | 3.0 UJ | 2.8 UJ | 2.0 UJ | 2.9 UJ | 1.9 UJ |
| 4-Bromophenyl phenyl ether | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 4-Chloro-3-methylphenol | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 4-Chloroaniline | 0.46 UJ | 0.22 J | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 4-Chlorophenyl phenyl ether | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 4-Methylphenol | 0.46 U | 0.068 J | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| 4-Nitroaniline | 1.2 U | 1.2 U | 3.0 UJ | 2.8 UJ | 2.0 UJ | 2.9 UJ | 1.9 UJ |
| 4-Nitrophenol | 1.2 U | 1.2 U | 3.0 UJ | 2.8 UJ | 2.0 UJ | 2.9 UJ | 1.9 UJ |
| Acenaphthene | 0.11 J | 0.32 J | 0.17 J | 1.1 UJ | 0.11 J | 1.1 UJ | 0.78 UJ |
| Acenaphthylene | 0.31 J | 0.80 | 0.27 J | 0.16 J | 0.11 J | 0.12 J | 0.78 UJ |
| Anthracene | 1.3 | 3.6 | 1.2 J | 0.59 J | 0.77 J | 0.50 J | 0.78 UJ |
| Benzo(a)anthracene | 4.6 DJ | 11 D | 4.6 J | 3.2 J | 2.6 J | 2.2 J | 0.27 J |
| Benzo[a]pyrene | 4.0 DJ | 9.1 DJ | 4.5 J | 3.2 J | 2.5 J | 1.1 J | 0.25 J |
| Benzo(b)fluoranthene | 5.3 DJ | 11 DJ | 5.9 J | 4.6 J | 4.0 J | 2.4 J | 0.39 J |
| Benzo(ghi)perylene | 0.94 J | 1.9 J | 1.5 J | 1.1 J | 1.2 J | 0.54 J | 0.081 J |
| Benzo(k)fluoranthene | 2.2 J | 3.5 J | 2.3 J | 1.5 J | 0.99 J | 1.2 J | 0.17 J |
| Butyl benzyl phthalate | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Carbazole | 0.46 U | 0.14 J | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Chrysene | 2.8 | 10 D | 4.5 J | 2.9 J | 2.7 J | 2.1 J | 0.30 J |
| Di-n-butyl phthalate | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-OD3 | WP-OD3 | WP-PL | WP-PL DUP | WP-PL | WP-PL1 | WP-PL1 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/08/2001 | 05/08/2001 | 05/08/2001 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 0 - 6 in. | 6 - 11 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.46 UJ | 0.49 UJ | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Dibenzo(a,h)anthracene | 0.34 J | 0.83 J | 0.81 J | 0.73 J | 0.59 J | 0.25 J | 0.78 UJ |
| Dibenzofuran | 0.065 J | 0.23 J | 0.13 J | 1.1 UJ | 0.28 J | 1.1 UJ | 0.78 UJ |
| Diethyl phthalate | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Dimethyl phthalate | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Fluoranthene | 7.3 D | 17 D | 5.7 J | 3.6 J | 4.2 J | 4.0 J | 0.55 J |
| Fluorene | 0.19 J | 0.45 J | 0.23 J | 0.16 J | 0.27 J | 1.1 UJ | 0.78 UJ |
| Hexachlorobenzene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Hexachlorobutadiene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Hexachlorocyclopentadiene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Hexachloroethane | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Indeno(1,2,3-cd)pyrene | 1.1 J | 2.2 J | 2.7 J | 2.0 J | 1.8 J | 0.67 J | 0.11 J |
| Isophorone | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| N-Nitrosodipropylamine | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| N-Nitrosodiphenylamine | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Naphthalene | 0.14 J | 0.75 | 0.28 J | 0.22 J | 0.29 J | 1.1 UJ | 0.78 UJ |
| Nitrobenzene | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Pentachlorophenol | 1.2 U | 1.2 U | 3.0 UJ | 2.8 UJ | 2.0 UJ | 2.9 UJ | 1.9 UJ |
| Phenanthrene | 3.3 | 7.1 DJ | 2.2 J | 1.2 J | 1.1 J | 1.2 J | 0.12 J |
| Phenol | 0.46 U | 0.083 J | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Pyrene | 8.2 D | 20 D | 8.4 J | 5.9 J | 5.6 J | 3.5 J | 0.55 J |
| Bis(2-chloroethoxy)methane | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Bis(2-chloroethyl)ether | 0.46 U | 0.49 U | 1.2 UJ | 1.1 UJ | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.46 U | 0.49 U | 0.70 J | 0.75 J | 0.83 UJ | 1.1 UJ | 0.78 UJ |
| Total organic carbon (mg/Kg) | 30500 e | 30500 | 115000 | 115000 | 82300 | 108000 J | 80500 J |
| Percent solids (%) | 72 | 68 | 25.6 | 24.7 | 39.5 | 29 | 43 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-PL1 | WP-PL2 | WP-PL2 | WP-PL2 | WP-PL3 | WP-PL3 | WP-T1A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/14/2003 |
| Sample Depth | 12 - 18 in. | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 1,2-Dichlorobenzene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 1,3-Dichlorobenzene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 1,4-Dichlorobenzene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Bis(2-chloroisopropyl) ether | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2,4,5-Trichlorophenol | 1.5 U | 3.2 UJ | 2.5 UJ | 1.9 UJ | 3.5 UJ | 2.4 UJ | 2.5 UJ |
| 2,4,6-Trichlorophenol | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2,4-Dichlorophenol | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2,4-Dimethylphenol | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2,4-Dinitrophenol | 1.5 U | 3.2 UJ | 2.5 UJ | 1.9 UJ | 3.5 UJ | 2.4 UJ | 2.5 UJ |
| 2,4-Dinitrotoluene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2,6-Dinitrotoluene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2-Chloronaphthalene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2-Chlorophenol | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2-Methylnaphthalene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2-Methylphenol | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 2-Nitroaniline | 1.5 U | 3.2 UJ | 2.5 UJ | 1.9 UJ | 3.5 UJ | 2.4 UJ | 2.5 UJ |
| 2-Nitrophenol | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 3,3-Dichlorobenzidine | 0.60 U | 1.3 UJ | 0.98 UJ | 0.77 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 3-Nitroaniline | 1.5 U | 3.2 UJ | 2.5 UJ | 1.9 UJ | 3.5 UJ | 2.4 UJ | 2.5 UJ |
| 4,6-Dinitro-2-methylphenol | 1.5 U | 3.2 UJ | 2.5 UJ | 1.9 UJ | 3.5 UJ | 2.4 UJ | 2.5 UJ |
| 4-Bromophenyl phenyl ether | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 4-Chloro-3-methylphenol | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 4-Chloroaniline | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 4-Chlorophenyl phenyl ether | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 4-Methylphenol | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| 4-Nitroaniline | 1.5 U | 3.2 UJ | 2.5 UJ | 1.9 UJ | 3.5 UJ | 2.4 UJ | 2.5 UJ |
| 4-Nitrophenol | 1.5 U | 3.2 UJ | 2.5 UJ | 1.9 UJ | 3.5 UJ | 2.4 UJ | 2.5 UJ |
| Acenaphthene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Acenaphthylene | 0.60 U | 0.18 J | 0.14 J | 0.78 UJ | 1.4 UJ | 0.13 J | 0.98 UJ |
| Anthracene | 0.60 U | 0.68 J | 0.32 J | 0.19 J | 0.17 J | 0.24 J | 0.20 J |
| Benzo(a)anthracene | 0.60 U | 2.6 J | 1.5 J | 0.89 J | 0.78 J | 1.1 J | 0.68 J |
| Benzo[a]pyrene | 0.60 U | 1.2 J | 0.82 J | 0.84 J | 0.54 J | 1.0 J | 0.32 J |
| Benzo(b)fluoranthene | 0.60 U | 3.6 J | 2.2 J | 1.1 J | 0.87 J | 1.8 J | 0.39 J |
| Benzo(ghi)perylene | 0.60 U | 0.71 J | 0.49 J | 0.31 J | 0.21 J | 0.46 J | 0.13 J |
| Benzo(k)fluoranthene | 0.60 U | 1.1 J | 0.77 J | 0.51 J | 0.43 J | 0.56 J | 0.23 J |
| Butyl benzyl phthalate | 0.60 U | 1.3 UJ | 0.98 UJ | 0.77 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Carbazole | 0.60 U | 1.3 UJ | 0.98 UJ | 0.77 UJ | 1.4 UJ | 0.11 J | 0.98 UJ |
| Chrysene | 0.60 U | 2.1 J | 1.4 J | 0.86 J | 0.78 J | 1.3 J | 0.95 J |
| Di-n-butyl phthalate | 0.60 U | 1.3 UJ | 0.98 UJ | 0.77 UJ | 0.20 J | 0.95 UJ | 0.98 UJ |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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FXP File: Q:\10653_NYSDEC\27258_THREESTAR\TABLEPRK.FXP
File Number: 10653.27258

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-PL1 | WP-PL2 | WP-PL2 | WP-PL2 | WP-PL3 | WP-PL3 | WP-T1A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/14/2003 |
| Sample Depth | 12 - 18 in. | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.60 U | 1.3 UJ | 0.98 UJ | 0.77 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Dibenzo(a,h)anthracene | 0.60 U | 0.28 J | 0.19 J | 0.12 J | 1.4 UJ | 0.17 J | 0.98 UJ |
| Dibenzofuran | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.11 J | 0.98 UJ |
| Diethyl phthalate | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Dimethyl phthalate | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Fluoranthene | 0.60 U | 4.5 J | 2.2 J | 1.5 J | 1.4 J | 2.5 J | 1.2 J |
| Fluorene | 0.60 U | 0.15 J | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.13 J | 0.98 UJ |
| Hexachlorobenzene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Hexachlorobutadiene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Hexachlorocyclopentadiene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Hexachloroethane | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Indeno(1,2,3-cd)pyrene | 0.60 U | 0.85 J | 0.57 J | 0.37 J | 0.22 J | 0.47 J | 0.13 J |
| Isophorone | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| N-Nitrosodipropylamine | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| N-Nitrosodiphenylamine | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Naphthalene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.11 J | 1.4 UJ | 0.22 J | 0.98 UJ |
| Nitrobenzene | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Pentachlorophenol | 1.5 U | 3.2 UJ | 2.5 UJ | 1.9 UJ | 3.5 UJ | 2.4 UJ | 2.5 UJ |
| Phenanthrene | 0.60 U | 1.5 J | 0.76 J | 0.39 J | 0.54 J | 1.2 J | 0.37 J |
| Phenol | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Pyrene | 0.60 U | 4.3 J | 2.4 J | 1.6 J | 1.2 J | 2.3 J | 1.3 J |
| Bis(2-chloroethoxy)methane | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Bis(2-chloroethyl)ether | 0.60 U | 1.3 UJ | 0.98 UJ | 0.78 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.60 U | 1.3 UJ | 0.98 UJ | 0.77 UJ | 1.4 UJ | 0.95 UJ | 0.98 UJ |
| Total organic carbon (mg/Kg) | 51700 | 58700 BJ | 64200 BJ | 77000 BJ | 93900 BJ | 118000 BJ | 50000 e J |
| Percent solids (%) | 56 | 26 | 34 | 43 | 24 | 35 | 34 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

CONTINUED

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-T1A | WP-T1A | WP-T1C | WP-T1C | WP-OD2 | WP-OD2 | WP-OD2 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 10 in. | 0 - 6 in. | 6 - 12 in. | 12 - 22 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 1,2-Dichlorobenzene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 1,3-Dichlorobenzene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 1,4-Dichlorobenzene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Bis(2-chloroisopropyl) ether | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2,4,5-Trichlorophenol | 1.9 UJ | 1.4 U | 1.2 U | 1.3 U | 2.8 UJ | 1.7 UJ | 1.3 U |
| 2,4,6-Trichlorophenol | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2,4-Dichlorophenol | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2,4-Dimethylphenol | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2,4-Dinitrophenol | 1.9 UJ | 1.4 U | 1.2 U | 1.3 U | 2.8 UJ | 1.7 UJ | 1.3 U |
| 2,4-Dinitrotoluene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2,6-Dinitrotoluene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2-Chloronaphthalene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2-Chlorophenol | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2-Methylnaphthalene | 0.085 J | 0.10 J | 0.092 J | 0.27 J | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2-Methylphenol | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 2-Nitroaniline | 1.9 UJ | 1.4 U | 1.2 U | 1.3 U | 2.8 UJ | 1.7 UJ | 1.3 U |
| 2-Nitrophenol | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 3,3-Dichlorobenzidine | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 3-Nitroaniline | 1.9 UJ | 1.4 U | 1.2 U | 1.3 U | 2.8 UJ | 1.7 UJ | 1.3 U |
| 4,6-Dinitro-2-methylphenol | 1.9 UJ | 1.4 U | 1.2 U | 1.3 U | 2.8 UJ | 1.7 UJ | 1.3 U |
| 4-Bromophenyl phenyl ether | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 4-Chloro-3-methylphenol | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 4-Chloroaniline | 0.78 UJ | 0.56 UJ | 0.48 UJ | 0.54 UJ | 1.1 UJ | 0.68 UJ | 0.53 UJ |
| 4-Chlorophenyl phenyl ether | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| 4-Methylphenol | 0.087 J | 0.070 J | 0.061 J | 0.11 J | 1.1 UJ | 0.68 UJ | 0.53 U |
| 4-Nitroaniline | 1.9 UJ | 1.4 U | 1.2 U | 1.3 U | 2.8 UJ | 1.7 UJ | 1.3 U |
| 4-Nitrophenol | 1.9 UJ | 1.4 U | 1.2 U | 1.3 U | 2.8 UJ | 1.7 UJ | 1.3 U |
| Acenaphthene | 0.72 J | 0.76 | 0.12 J | 0.33 J | 1.1 UJ | 0.16 J | 0.68 |
| Acenaphthylene | 0.59 J | 0.31 J | 0.088 J | 0.16 J | 1.1 UJ | 0.12 J | 0.19 J |
| Anthracene | 3.3 J | 3.2 DJ | 0.91 | 2.4 | 0.19 J | 0.32 J | 1.6 |
| Benzo(a)anthracene | 8.6 DJ | 6.8 DJ | 2.2 | 4.6 D | 0.89 J | 1.6 J | 3.4 |
| Benzo[a]pyrene | 8.8 DJ | 5.8 DJ | 2.1 DJ | 3.9 DJ | 0.51 J | 1.2 J | 3.0 DJ |
| Benzo(b)fluoranthene | 11 DJ | 7.0 DJ | 3.1 DJ | 5.3 DJ | 0.84 J | 1.8 J | 3.8 DJ |
| Benzo(ghi)perylene | 2.1 J | 1.9 DJ | 0.72 DJ | 1.2 DJ | 0.16 J | 0.36 J | 1.0 DJ |
| Benzo(k)fluoranthene | 4.7 J | 3.4 DJ | 0.86 DJ | 1.9 DJ | 0.46 J | 0.93 J | 1.6 DJ |
| Butyl benzyl phthalate | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Carbazole | 0.10 J | 0.082 J | 0.48 U | 0.089 J | 1.1 UJ | 0.68 UJ | 0.058 J |
| Chrysene | 4.6 J | 6.6 DJ | 1.6 | 2.9 | 1.2 J | 0.96 J | 2.3 |
| Di-n-butyl phthalate | 0.14 J | 0.098 J | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-T1A | WP-T1A | WP-T1C | WP-T1C | WP-OD2 | WP-OD2 | WP-OD2 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 10 in. | 0 - 6 in. | 6 - 12 in. | 12 - 22 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.78 UJ | 0.56 UJ | 0.48 UJ | R | 1.1 UJ | 0.29 J | 0.53 UJ |
| Dibenzo(a,h)anthracene | 0.81 J | 0.91 DJ | 0.34 DJ | 0.61 DJ | 1.1 UJ | 0.68 UJ | 0.44 DJ |
| Dibenzofuran | 0.21 J | 0.26 J | 0.14 J | 0.36 J | 1.1 UJ | 0.68 UJ | 0.095 J |
| Diethyl phthalate | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Dimethyl phthalate | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Fluoranthene | 15 DJ | 12 DJ | 3.9 D | 8.2 D | 1.9 J | 3.0 J | 6.7 D |
| Fluorene | 0.53 J | 0.58 | 0.19 J | 0.52 J | 1.1 UJ | 0.68 UJ | 0.29 J |
| Hexachlorobenzene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Hexachlorobutadiene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Hexachlorocyclopentadiene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Hexachloroethane | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Indeno(1,2,3-cd)pyrene | 2.3 J | 2.2 DJ | 0.82 DJ | 1.4 DJ | 0.19 J | 0.39 J | 1.2 DJ |
| Isophorone | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| N-Nitrosodipropylamine | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| N-Nitrosodiphenylamine | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Naphthalene | 0.39 J | 0.48 J | 0.77 | 0.93 | 1.1 UJ | 0.093 J | 0.095 J |
| Nitrobenzene | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Pentachlorophenol | 1.9 UJ | 1.4 U | 1.2 U | 1.3 U | 2.8 UJ | 1.7 UJ | 1.3 U |
| Phenanthrene | 6.1 DJ | 5.6 DJ | 2.2 | 4.8 D | 0.48 J | 0.61 J | 3.5 |
| Phenol | 0.091 J | 0.092 J | 0.049 J | 0.075 J | 1.1 UJ | 0.68 UJ | 0.53 U |
| Pyrene | 15 DJ | 13 DJ | 4.1 D | 8.8 D | 1.5 J | 2.2 J | 7.5 D |
| Bis(2-chloroethoxy)methane | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Bis(2-chloroethyl)ether | 0.78 UJ | 0.56 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.78 UJ | 0.58 U | 0.48 U | 0.54 U | 1.1 UJ | 0.68 UJ | 0.53 U |
| Total organic carbon (mg/Kg) | 50000 e J | 85400 J | 31100 e | 31100 | 41100 e J | 41100 e J | 41100 J |
| Percent solids (%) | 43 | 59 | 70 | 63 | 30 | 49 | 63 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-T2A | WP-T2A | WP-T2B | WP-T2B | WP-T2B | WP-T2C | WP-T2C |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 1,2-Dichlorobenzene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 1,3-Dichlorobenzene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 1,4-Dichlorobenzene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Bis(2-chloroisopropyl) ether | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2,4,5-Trichlorophenol | 3.1 UJ | 1.3 U | 2.5 UJ | 1.1 U | 1.2 U | 25 UJ | 17 U |
| 2,4,6-Trichlorophenol | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2,4-Dichlorophenol | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2,4-Dimethylphenol | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2,4-Dinitrophenol | 3.1 UJ | 1.3 U | 2.5 UJ | 1.1 U | 1.2 U | 25 UJ | 17 U |
| 2,4-Dinitrotoluene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2,6-Dinitrotoluene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2-Chloronaphthalene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2-Chlorophenol | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2-Methylnaphthalene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2-Methylphenol | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 2-Nitroaniline | 3.1 UJ | 1.3 U | 2.5 UJ | 1.1 U | 1.2 U | 25 UJ | 17 U |
| 2-Nitrophenol | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 3,3-Dichlorobenzidine | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 3-Nitroaniline | 3.1 UJ | 1.3 U | 2.5 UJ | 1.1 U | 1.2 U | 25 UJ | 17 U |
| 4,6-Dinitro-2-methylphenol | 3.1 UJ | 1.3 U | 2.5 UJ | 1.1 U | 1.2 U | 25 UJ | 17 U |
| 4-Bromophenyl phenyl ether | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 4-Chloro-3-methylphenol | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 4-Chloroaniline | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 4-Chlorophenyl phenyl ether | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 4-Methylphenol | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| 4-Nitroaniline | 3.1 UJ | 1.3 U | 2.5 UJ | 1.1 U | 1.2 U | 25 UJ | 17 U |
| 4-Nitrophenol | 3.1 UJ | 1.3 U | 2.5 UJ | 1.1 U | 1.2 U | 25 UJ | 17 U |
| Acenaphthene | 1.2 UJ | 0.17 J | 0.13 J | 0.064 J | 0.49 U | 10 UJ | 6.7 U |
| Acenaphthylene | 1.2 UJ | 0.16 J | 0.12 J | 0.10 J | 0.49 U | 10 UJ | 0.79 J |
| Anthracene | 0.35 J | 0.71 | 0.57 J | 0.37 J | 0.49 U | 6.0 J | 6.5 J |
| Benzo(a)anthracene | 1.9 J | 3.4 | 1.8 J | 1.2 | 0.10 J | 18 J | 13 |
| Benzo[a]pyrene | 0.90 J | 2.8 | 1.6 J | 0.91 J | 0.085 J | 15 J | 11 |
| Benzo(b)fluoranthene | 2.6 J | 3.7 D | 2.2 J | 1.4 J | 0.10 J | 20 J | 13 |
| Benzo(ghi)perylene | 0.60 J | 0.94 | 0.45 J | 0.28 J | 0.49 UJ | 5.8 J | 4.4 J |
| Benzo(k)fluoranthene | 0.57 J | 0.98 | 0.78 J | 0.37 J | 0.49 UJ | 6.0 J | 4.3 J |
| Butyl benzyl phthalate | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Carbazole | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Chrysene | 1.4 J | 2.5 | 1.6 J | 0.89 | 0.088 J | 15 J | 12 |
| Di-n-butyl phthalate | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-T2A | WP-T2A | WP-T2B | WP-T2B | WP-T2B | WP-T2C | WP-T2C |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 UJ | 0.49 UJ | 10 UJ | 6.7 U |
| Dibenzo(a,h)anthracene | 0.22 J | 0.35 J | 0.20 J | 0.13 J | 0.49 UJ | 2.3 J | 1.8 J |
| Dibenzofuran | 1.2 UJ | 0.068 J | 1.0 UJ | 0.045 J | 0.49 U | 10 UJ | 6.7 U |
| Diethyl phthalate | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Dimethyl phthalate | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Fluoranthene | 2.6 J | 4.8 D | 2.4 J | 2.0 | 0.15 J | 30 J | 25 |
| Fluorene | 1.2 UJ | 0.15 J | 0.14 J | 0.069 J | 0.49 U | 10 UJ | 6.7 U |
| Hexachlorobenzene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Hexachlorobutadiene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Hexachlorocyclopentadiene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Hexachloroethane | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Indeno(1,2,3-cd)pyrene | 0.62 J | 1.1 | 0.53 J | 0.36 J | 0.49 UJ | 6.9 J | 4.9 J |
| Isophorone | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| N-Nitrosodipropylamine | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| N-Nitrosodiphenylamine | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Naphthalene | 1.2 UJ | 0.15 J | 1.0 UJ | 0.097 J | 0.49 U | 10 UJ | 6.7 U |
| Nitrobenzene | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Pentachlorophenol | 3.1 UJ | 1.3 U | 2.5 UJ | 1.1 U | 1.2 U | 25 UJ | 17 U |
| Phenanthrene | 0.75 J | 1.3 | 1.0 J | 0.72 | 0.088 J | 12 J | 8.4 |
| Phenol | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Pyrene | 3.0 J | 5.3 D | 3.1 J | 2.3 | 0.19 J | 29 J | 20 |
| Bis(2-chloroethoxy)methane | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Bis(2-chloroethyl)ether | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 U | 0.49 U | 10 UJ | 6.7 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 1.2 UJ | 0.53 U | 1.0 UJ | 0.44 UJ | 0.49 U | 10 UJ | 6.7 U |
| Total organic carbon (mg/Kg) | 49600 BJ | 31400 B | 49000 J | 26400 J | 19100 | 45000 BJ | 59000 B |
| Percent solids (%) | 27 | 63 | 33 | 75 | 68 | 33 | 51 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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File Number: 10653.27258

# Table A-2

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-T2C | WP-OD1 | WP-OD1 | WP-OD1 | WP-T3A | WP-T3A DUP | WP-T3A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 12 - 19 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 1,2-Dichlorobenzene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 1,3-Dichlorobenzene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 1,4-Dichlorobenzene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Bis(2-chloroisopropyl) ether | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2,4,5-Trichlorophenol | 1.2 U | 3.1 UJ | 1.7 U | 1.6 U | 2.8 UJ | 2.9 UJ | 2.3 UJ |
| 2,4,6-Trichlorophenol | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2,4-Dichlorophenol | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2,4-Dimethylphenol | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2,4-Dinitrophenol | 1.2 U | 3.1 UJ | 1.7 U | 1.6 U | 2.8 UJ | 2.9 UJ | 2.3 UJ |
| 2,4-Dinitrotoluene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2,6-Dinitrotoluene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2-Chloronaphthalene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2-Chlorophenol | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2-Methylnaphthalene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2-Methylphenol | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 2-Nitroaniline | 1.2 U | 3.1 UJ | 1.7 U | 1.6 U | 2.8 UJ | 2.9 UJ | 2.3 UJ |
| 2-Nitrophenol | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 3,3-Dichlorobenzidine | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 3-Nitroaniline | 1.2 U | 3.1 UJ | 1.7 U | 1.6 U | 2.8 UJ | 2.9 UJ | 2.3 UJ |
| 4,6-Dinitro-2-methylphenol | 1.2 U | 3.1 UJ | 1.7 U | 1.6 U | 2.8 UJ | 2.9 UJ | 2.3 UJ |
| 4-Bromophenyl phenyl ether | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 4-Chloro-3-methylphenol | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 4-Chloroaniline | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 4-Chlorophenyl phenyl ether | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 4-Methylphenol | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| 4-Nitroaniline | 1.2 U | 3.1 UJ | 1.7 U | 1.6 U | 2.8 UJ | 2.9 UJ | 2.3 UJ |
| 4-Nitrophenol | 1.2 U | 3.1 UJ | 1.7 U | 1.6 U | 2.8 UJ | 2.9 UJ | 2.3 UJ |
| Acenaphthene | 0.48 U | 0.23 J | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Acenaphthylene | 0.48 U | 0.51 J | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Anthracene | 0.48 U | 3.0 J | 0.29 J | 0.63 U | 0.13 J | 0.17 J | 0.20 J |
| Benzo(a)anthracene | 0.48 U | 10 DJ | 1.3 | 0.63 U | 0.51 J | 0.62 J | 0.86 J |
| Benzo[a]pyrene | 0.49 | 9.1 J | 1.1 J | 0.63 U | 0.61 J | 0.41 J | 0.84 J |
| Benzo(b)fluoranthene | 0.48 U | 11 DJ | 1.5 J | 0.63 U | 0.93 J | 1.0 J | 1.1 J |
| Benzo(ghi)perylene | 0.48 U | 3.3 J | 0.52 J | 0.63 U | 0.27 J | 0.28 J | 0.33 J |
| Benzo(k)fluoranthene | 0.48 U | 3.1 J | 0.42 J | 0.63 U | 0.32 J | 0.26 J | 0.41 J |
| Butyl benzyl phthalate | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Carbazole | 0.48 U | 0.13 J | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Chrysene | 0.48 U | 6.8 J | 1.1 | 0.63 U | 0.48 J | 0.52 J | 0.75 J |
| Di-n-butyl phthalate | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-T2C | WP-OD1 | WP-OD1 | WP-OD1 | WP-T3A | WP-T3A DUP | WP-T3A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 12 - 19 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.48 U | 1.2 UJ | 0.67 UJ | 0.63 U | 0.14 J | 0.16 J | 0.93 UJ |
| Dibenzo(a,h)anthracene | 0.48 U | 1.1 J | 0.19 J | 0.63 U | 0.12 J | 1.1 UJ | 0.16 J |
| Dibenzofuran | 0.48 U | 0.15 J | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Diethyl phthalate | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Dimethyl phthalate | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Fluoranthene | 0.48 U | 16 DJ | 2.0 | 0.63 U | 0.77 J | 0.88 J | 1.1 J |
| Fluorene | 0.48 U | 0.40 J | 0.070 J | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Hexachlorobenzene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Hexachlorobutadiene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Hexachlorocyclopentadiene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Hexachloroethane | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Indeno(1,2,3-cd)pyrene | 0.48 U | 3.8 J | 0.53 J | 0.63 U | 0.31 J | 0.28 J | 0.39 J |
| Isophorone | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| N-Nitrosodipropylamine | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| N-Nitrosodiphenylamine | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Naphthalene | 0.48 U | 0.27 J | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Nitrobenzene | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Pentachlorophenol | 1.2 U | 3.1 UJ | 1.7 U | 1.6 U | 2.8 UJ | 2.9 UJ | 2.3 UJ |
| Phenanthrene | 0.48 U | 5.5 J | 0.44 J | 0.63 U | 0.30 J | 0.35 J | 0.48 J |
| Phenol | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Pyrene | 0.48 U | 15 DJ | 2.2 | 0.63 U | 0.79 J | 1.0 J | 1.4 J |
| Bis(2-chloroethoxy)methane | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Bis(2-chloroethyl)ether | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.48 U | 1.2 UJ | 0.67 U | 0.63 U | 1.1 UJ | 1.1 UJ | 0.93 UJ |
| Total organic carbon (mg/Kg) | 11000 B | 56500 BJ | 60700 B | 37600 B | 56400 J | 69300 BJ | 57700 J |
| Percent solids (%) | 70 | 27 | 51 | 53 | 30 | 29 | 36 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-2

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-T3A | WP-T3B | WP-T3B | WP-T3B | WP-T3C | WP-T3C |
|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 11 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | |
| 1,2,4-Trichlorobenzene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 1,2-Dichlorobenzene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 1,3-Dichlorobenzene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 1,4-Dichlorobenzene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Bis(2-chloroisopropyl) ether | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2,4,5-Trichlorophenol | 1.5 U | 2.9 UJ | 1.8 UJ | 1.5 U | 2.7 UJ | 1.9 UJ |
| 2,4,6-Trichlorophenol | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2,4-Dichlorophenol | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2,4-Dimethylphenol | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2,4-Dinitrophenol | 1.5 U | 2.9 UJ | 1.8 UJ | 1.5 U | 2.7 UJ | 1.9 UJ |
| 2,4-Dinitrotoluene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2,6-Dinitrotoluene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2-Chloronaphthalene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2-Chlorophenol | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2-Methylnaphthalene | 0.066 J | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2-Methylphenol | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 2-Nitroaniline | 1.5 U | 2.9 UJ | 1.8 UJ | 1.5 U | 2.7 UJ | 1.9 UJ |
| 2-Nitrophenol | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 3,3-Dichlorobenzidine | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 3-Nitroaniline | 1.5 U | 2.9 UJ | 1.8 UJ | 1.5 U | 2.7 UJ | 1.9 UJ |
| 4,6-Dinitro-2-methylphenol | 1.5 U | 2.9 UJ | 1.8 UJ | 1.5 U | 2.7 UJ | 1.9 UJ |
| 4-Bromophenyl phenyl ether | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 4-Chloro-3-methylphenol | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 4-Chloroaniline | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 4-Chlorophenyl phenyl ether | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 4-Methylphenol | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| 4-Nitroaniline | 1.5 U | 2.9 UJ | 1.8 UJ | 1.5 U | 2.7 UJ | 1.9 UJ |
| 4-Nitrophenol | 1.5 U | 2.9 UJ | 1.8 UJ | 1.5 U | 2.7 UJ | 1.9 UJ |
| Acenaphthene | 0.099 J | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Acenaphthylene | 0.15 J | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.087 J |
| Anthracene | 1.6 | 1.1 UJ | 0.088 J | 0.62 U | 1.1 UJ | 0.15 J |
| Benzo(a)anthracene | 2.3 | 0.42 J | 0.50 J | 0.62 U | 0.27 J | 0.65 J |
| Benzo[a]pyrene | 2.1 | 0.34 J | 0.48 J | 0.62 U | 0.45 J | 0.66 J |
| Benzo(b)fluoranthene | 2.9 | 0.75 J | 0.67 J | 0.62 U | 0.51 J | 0.97 J |
| Benzo(ghi)perylene | 0.49 J | 0.27 J | 0.20 J | 0.62 U | 0.11 J | 0.23 J |
| Benzo(k)fluoranthene | 0.95 | 0.20 J | 0.21 J | 0.62 U | 0.18 J | 0.32 J |
| Butyl benzyl phthalate | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Carbazole | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Chrysene | 2.4 | 0.54 J | 0.49 J | 0.62 U | 0.35 J | 0.64 J |
| Di-n-butyl phthalate | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Semivolatile Organic Compound Concentrations

| Sample ID | WP-T3A | WP-T3B | WP-T3B | WP-T3B | WP-T3C | WP-T3C |
|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 11 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | |
| Di-n-octyl phthalate | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Dibenzo(a,h)anthracene | 0.23 J | 1.1 UJ | 0.098 J | 0.62 U | 1.1 UJ | 0.095 J |
| Dibenzofuran | 0.093 J | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Diethyl phthalate | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Dimethyl phthalate | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Fluoranthene | 4.9 | 0.77 J | 0.75 J | 0.62 U | 0.51 J | 0.96 J |
| Fluorene | 0.16 J | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Hexachlorobenzene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Hexachlorobutadiene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Hexachlorocyclopentadiene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Hexachloroethane | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Indeno(1,2,3-cd)pyrene | 0.63 | 0.28 J | 0.24 J | 0.62 U | 0.13 J | 0.25 J |
| Isophorone | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| N-Nitrosodipropylamine | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| N-Nitrosodiphenylamine | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Naphthalene | 0.23 J | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.099 J |
| Nitrobenzene | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Pentachlorophenol | 1.5 U | 2.9 UJ | 1.8 UJ | 1.5 U | 2.7 UJ | 1.9 UJ |
| Phenanthrene | 2.0 | 0.31 J | 0.17 J | 0.62 U | 0.17 J | 0.38 J |
| Phenol | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Pyrene | 4.0 | 0.84 J | 0.82 J | 0.62 U | 0.55 J | 1.2 J |
| Bis(2-chloroethoxy)methane | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Bis(2-chloroethyl)ether | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.62 U | 1.1 UJ | 0.72 UJ | 0.62 U | 1.1 UJ | 0.74 UJ |
| Total organic carbon (mg/Kg) | 44200 J | 39600 BJ | 38000 BJ | 19700 B | 72000 J | 63800 J |
| Percent solids (%) | 54 | 29 | 46 | 54 | 31 | 45 |

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.


CONTINUED

# Table A-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-LK1 | WP-LK2 | WP-LK3 | WP-LK4 | WP-LK5 | WP-LK01-A | WP-LK01-A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Background | Background | Background | Background | Background | Background |
| Sample Date | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/10/2001 | 05/10/2001 |
| Sample Depth | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 19200 J | 14500 J | 14300 J | 16000 J | 17600 J | 14500 J | 11400 J |
| Antimony | 2.4 UJN | 3.8 UJN | 3.1 UJN | 1.8 UJN | 1.2 UJN | 1.1 UJN | 3.2 JN |
| Arsenic | 4.9 BJ | 4.0 BJ | 6.3 BJ | 4.7 BJ | 4.7 BJ | 4.6 J | 6.6 J |
| Barium | 120 BJ | 88 BJ | 92 BJ | 98 BJ | 100 BJ | 94.1 J | 73.8 J |
| Beryllium | 0.86 BJ | 0.67 BJ | 0.64 BJ | 0.70 BJ | 0.81 BJ | 0.57 J | 0.53 J |
| Cadmium | 1.3 BJ | 1.4 BJ | 0.80 BJ | 0.93 BJ | 1.2 BJ | 0.19 UJ | 0.16 J |
| Calcium | 10200 J | 11900 J | 18800 J | 11600 J | 11100 J | 7600 J | 6330 J |
| Chromium | 27 J | 26 J | 21 J | 22 J | 24 J | 18.4 J | 14.6 J |
| Chromium (Hexavalent) | 54 U | 86 U | 14 U | 41 U | 28 U | 17.9 U | 11.5 U |
| Cobalt | 14 BJ | 11 BJ | 8.8 BJ | 11 BJ | 13 BJ | 8.6 J | 9.3 J |
| Copper | 51 J | 90 J | 90 J | 83 J | 64 J | 36.7 J | 30.5 J |
| Iron | 32800 J | 31800 J | 26900 J | 29600 J | 32700 J | 29800 J | 23500 J |
| Lead | 66 J | 187 J | 79 J | 99 J | 126 J | 49.4 J | 41.5 J |
| Magnesium | 8570 J | 6950 BJ | 8150 J | 7310 J | 8700 J | 7130 J | 5540 J |
| Manganese | 707 J | 579 J | 551 J | 1000 J | 637 J | 594 J | 566 J |
| Mercury | 0.31 J | 0.57 J | 0.29 J | 0.33 J | 0.30 J | 0.35 UJ | 0.26 UJ |
| Nickel | 33 BJ | 29 BJ | 26 BJ | 26 BJ | 30 J | 25.2 J | 21.5 J |
| Potassium | 1740 BJ | 1510 BJ | 1420 BJ | 1350 BJ | 1360 BJ | 1090 J | 852 J |
| Selenium | 3.0 UJ | 4.8 UJ | 3.9 UJ | 2.3 UJ | 1.6 UJ | 2.5 J | 1.2 J |
| Silver | 1.4 UJ | 2.2 UJ | 1.8 UJ | 1.1 UJ | 0.72 UJ | 0.57 UJ | 0.42 UJ |
| Sodium | 330 BJ | 386 BJ | 357 BJ | 212 BJ | 328 BJ | 124 J | 82.2 J |
| Thallium | 3.5 UJ | 5.5 UJ | 4.4 UJ | 2.6 UJ | 1.8 UJ | 2.8 UJN | 2.1 UJN |
| Vanadium | 29 BJ | 38 BJ | 29 BJ | 22 BJ | 26 BJ | 19.8 J | 18.8 J |
| Zinc | 221 J | 359 J | 224 J | 228 J | 230 J | 204 J | 136 J |
| Cyanide, total | 2.7 UJ | 4.3 UJ | 3.5 UJ | 2.0 UJ | 1.4 UJ | 1.9 UJ | 1.4 UJ |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | --- |
| Percent solids (%) | 18 | 12 | 14 | 25 | 36 | 22.4 | 34.9 |
| pH | --- | --- | --- | --- | --- | 7.3 | 7.5 |
| Total organic carbon (mg/Kg) | 102000 J | 91600 J | 63300 J | 42100 J | 46100 J | 99100 | 47000 |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-LK01-A | WP-LK01-B | WP-LK01-B | WP-LK01-B DUP | WP-LK01-B | WP-LK01-C | WP-LK01-C |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Background | Background | Background | Background | Background | Background |
| Sample Date | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 |
| Sample Depth | 19 - 25 in. | 0 - 6 in. | 6 - 12 in. | 6 - 12 in. | 25 - 31 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 13700 J | 14200 J | 11700 J | 13300 J | 13100 J | 14600 J | 13200 J |
| Antimony | 0.59 UJN | 1.2 UJN | 0.92 UJN | 1 UJN | 0.58 UJN | 1.1 UJN | 0.73 UJN |
| Arsenic | 5 J | 5 J | 5.2 J | 4.3 J | 4.9 J | 4.1 J | 4.8 J |
| Barium | 82.4 J | 89.5 J | 72.7 J | 83.1 J | 80.1 J | 90.3 J | 80.6 J |
| Beryllium | 0.62 J | 0.53 J | 0.42 J | 0.53 J | 0.55 J | 0.57 J | 0.55 J |
| Cadmium | 0.34 J | 0.21 UJ | 0.16 UJ | 0.18 UJ | 0.36 J | 0.2 UJ | 0.2 J |
| Calcium | 9540 J | 7030 J | 5980 J | 6640 J | 5350 J | 7240 J | 6750 J |
| Chromium | 17.2 J | 17.7 J | 14.7 J | 16.5 J | 16.5 J | 18.3 J | 16.6 J |
| Chromium (Hexavalent) | 8.73 U | 16 U | 12.3 U | 11.9 U | 8.35 U | 13.9 U | 11.2 U |
| Cobalt | 9.2 J | 7.9 J | 6.5 J | 7.6 J | 8.9 J | 8.3 J | 8.5 J |
| Copper | 37.8 J | 34.2 J | 30.2 J | 34.2 J | 37 J | 36.7 J | 33.8 J |
| Iron | 28500 J | 27000 J | 24300 J | 27200 J | 27500 J | 28600 J | 26500 J |
| Lead | 61.7 J | 45.9 J | 41.4 J | 46.3 J | 58.5 J | 46.5 J | 43.9 J |
| Magnesium | 6390 J | 6850 J | 5720 J | 6440 J | 5800 J | 6990 J | 6410 J |
| Manganese | 636 J | 460 J | 541 J | 640 J | 616 J | 569 J | 613 J |
| Mercury | 0.2 J | 0.4 UJ | 0.3 UJ | 0.33 UJ | 0.21 J | 0.37 UJ | 0.23 UJ |
| Nickel | 22.9 J | 23.5 J | 21.8 J | 24.1 J | 21.8 J | 24.3 J | 23.9 J |
| Potassium | 932 J | 1110 J | 888 J | 956 J | 888 J | 1140 J | 996 J |
| Selenium | 1.4 J | 1.6 UJ | 1.7 J | 2.1 J | 1.6 J | 1.5 UJ | 2 J |
| Silver | 0.31 UJ | 0.64 UJ | 0.48 UJ | 0.53 UJ | 0.3 UJ | 0.59 UJ | 0.38 UJ |
| Sodium | 66.7 J | 145 J | 112 J | 108 J | 62.1 J | 148 J | 96.7 J |
| Thallium | 1.5 UJN | 3.2 UJN | 2.4 UJN | 2.6 UJN | 1.5 UJN | 2.9 UJN | 1.9 UJN |
| Vanadium | 18.2 J | 18.9 J | 20.1 J | 21.9 J | 17.9 J | 18.7 J | 21.7 J |
| Zinc | 145 J | 168 J | 141 J | 162 J | 136 J | 162 J | 135 J |
| Cyanide, total | 1.1 UJ | 2.2 UJ | 1.6 UJ | 1.8 UJ | 1 UJ | 3.2 J | 1.3 UJ |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | 3.2 U | --- |
| Percent solids (%) | 45.8 | 25 | 32.4 | 33.5 | 47.9 | 28.8 | 35.7 |
| pH | 7.9 | 7.6 | 7.7 | 7.7 | 8.1 | 7.5 | 7.8 |
| Total organic carbon (mg/Kg) | 33800 | 66800 | 62000 | 55200 | 54700 | 58700 | 55500 |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-LK01-C | WP-01-A | WP-04.45-9 | WP-09A | WP-11A | LG-OUT | WP-LGOUT2 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Background | Section 1 | Section 1 | Section 1 | Section 1 | Section 1 | Section 1 |
| Sample Date | 05/10/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/13/2003 |
| Sample Depth | 26 - 32 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 12900 J | 10000 | 10700 | 7850 | 4650 | 7350 | 10100 |
| Antimony | 0.58 UJN | 0.52 JN | 1.2 JN | 0.51 JN | 0.63 JN | 2.3 JN | 0.90 BNJ |
| Arsenic | 4.3 J | 6.5 | 8.9 | 18.5 | 10.2 | 9.9 | 6.6 |
| Barium | 77.7 J | 53.5 | 78.8 | 61.2 | 27.8 J | 80.1 | 118 |
| Beryllium | 0.53 J | 0.45 J | 0.43 J | 0.45 J | 0.27 J | 0.36 J | 0.45 B |
| Cadmium | 0.31 J | 1 J | 1.3 J | 0.34 J | 0.54 J | 2.4 | 1.7 |
| Calcium | 9730 J | 24900 | 4140 | 6120 | 1460 | 10800 | 13000 |
| Chromium | 16.4 J | 19.2 | 25.8 | 24.8 J | 25.9 J | 29.2 | 23 |
| Chromium (Hexavalent) | 8.03 U | 4.94 U | 5.46 U | 6.1 U | 6.13 U | 5.18 U | 13 U |
| Cobalt | 8.5 J | 7.6 J | 7.9 J | 7.9 J | 5.3 J | 6.5 J | 7.9 B |
| Copper | 36.4 J | 47.6 | 91.4 | 40.9 | 172 | 88 | 63 |
| Iron | 27600 J | 34400 | 43200 | 28000 | 14400 | 30600 | 33700 |
| Lead | 58.9 J | 93.6 | 152 | 73.2 | 225 | 235 | 141 |
| Magnesium | 6190 J | 18900 | 7180 | 4480 | 1960 | 6490 | 7210 |
| Manganese | 666 J | 912 J | 1790 J | 902 JN | 440 JN | 566 J | 345 |
| Mercury | 0.19 UJ | 0.51 | 0.15 J | 0.17 J | 0.44 | 1.1 | 0.34 |
| Nickel | 22 J | 21.8 | 26 | 17.1 | 12.7 | 34.2 | 56 |
| Potassium | 890 J | 636 J | 709 J | 759 J | 297 J | 617 J | 861 B |
| Selenium | 1.5 J | 0.94 J | 1.9 | 1.5 | 1.2 J | 1.1 J | 0.74 U |
| Silver | 0.3 UJ | 0.17 U | 0.27 J | 0.19 U | 0.2 U | 0.19 U | 0.34 U |
| Sodium | 67.7 J | 68.7 J | 81 J | 99.2 J | 84 J | 90.3 J | 99 B |
| Thallium | 1.5 UJN | 0.86 UJN | 0.96 UJN | 0.93 UJ | 0.98 UJ | 0.92 UJN | 0.85 U |
| Vanadium | 17.6 J | 14 | 17.6 | 24.2 | 10.3 J | 16.7 | 20 |
| Zinc | 132 J | 163 | 210 | 77.8 | 196 | 285 | 262 |
| Cyanide, total | 1 UJ | 0.6 U | 0.66 U | 0.65 U | 1.1 | 0.64 U | 0.33 BJN |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | 1.1 U | --- | --- |
| Percent solids (%) | 49.8 | 81 | 73.2 | 65.6 | 65.2 | 77.2 | 75 |
| pH | 7.6 | 8.2 | 8.1 | 8.1 | 8.4 | 8.3 | --- |
| Total organic carbon (mg/Kg) | 38800 | 18600 | 22100 | 65500 | 76500 | 56000 | 12400 J |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-MW4 | WP-MW4 DUP | WP-16 | WP-18 | WP-18 | WP-M2 | WP-M2 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 1 | Section 1 | Section 1 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/14/2003 | 05/14/2003 |
| Sample Depth | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 12000 | 12600 | 10800 | 9880 | 10100 | 15400 J | 10600 |
| Antimony | 0.87 BNJ | 25 NJ | 0.87 JN | 0.41 UJN | 0.43 UJN | 1.7 BNJ | 0.66 UJN |
| Arsenic | 6.3 | 8.4 | 7 | 5 | 5.6 | 6.6 BJ* | 15 J |
| Barium | 62 | 74 | 57.1 | 31 J | 33.5 J | 93 BJ | 46 B |
| Beryllium | 0.48 B | 0.52 B | 0.43 J | 0.48 J | 0.47 J | 0.77 BJ | 0.45 B |
| Cadmium | 1.2 B | 1.2 B | 1.9 | 0.2 J | 0.098 J | 1.8 BJ | 2.6 |
| Calcium | 5390 | 9830 | 2130 | 2500 | 2900 | 9540 J | 2350 |
| Chromium | 18 | 17 | 17 | 16.7 | 16.4 | 34 J | 482 |
| Chromium (Hexavalent) | 12 U | 13 U | 5.09 U | 5.85 U | 6.26 U | 36 U | 15 U |
| Cobalt | 8.4 B | 9.5 B | 7.3 J | 9 J | 9 J | 14 BJ | 10 B |
| Copper | 53 | 62 | 61 | 16.4 | 16.2 | 58 J | 71 |
| Iron | 35600 | 41000 | 33400 | 27000 | 26500 | 35600 J | 25900 |
| Lead | 130 | 1450 | 66.5 | 23.6 | 20.2 | 129 J | 210 |
| Magnesium | 7290 | 7330 | 6880 | 4830 | 4960 | 8490 J | 5830 |
| Manganese | 541 | 579 | 489 J | 293 J | 244 J | 874 J | 324 |
| Mercury | 0.16 | 0.14 | 0.17 J | 0.15 J | 0.44 J | 0.83 J | 34 |
| Nickel | 25 | 26 | 23.2 | 21 | 20.2 | 32 J | 24 |
| Potassium | 817 B | 710 B | 748 J | 1180 J | 1140 J | 1150 BJ | 766 B |
| Selenium | 0.69 U | 0.71 U | 1 J | 1 J | 0.94 J | 2.0 UJ | 0.84 U |
| Silver | 0.32 U | 0.33 U | 0.18 U | 0.21 U | 0.22 U | 0.94 UJ | 0.39 U |
| Sodium | 83 B | 74 B | 50.8 J | 87.9 J | 78.6 J | 159 BJ | 58 U |
| Thallium | 0.79 U | 0.81 U | 0.87 UJN | 1.1 UJN | 1.1 UJN | 2.3 UJ | 1.1 B |
| Vanadium | 17 | 18 | 15.6 | 16.2 | 15.9 | 24 BJ | 18 |
| Zinc | 231 | 246 | 309 | 74.3 | 68.6 | 325 J | 396 |
| Cyanide, total | 0.34 BJN | 0.35 BJN | 0.6 U | 0.74 U | 0.76 U | 1.3 BJN | 5.1 JN |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | 5.1 U |
| Percent solids (%) | 81 | 79 | 78.6 | 68.4 | 63.9 | 28 | 66 |
| pH | --- | --- | 8.2 | 7.5 | 7.4 | --- | --- |
| Total organic carbon (mg/Kg) | 25400 | 12100 | 8770 | 23400 | 24400 | 11300 e BJ | 11300 e BJ |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-M2 | WP-M3 | WP-M3 | WP-DOT | WP-DOT | WP-DOT | WP-29A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | 12 - 17 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 10900 | 9500 J | 10900 | 14400 | 12400 | 11700 | 9600 |
| Antimony | 0.55 UJN | 1.1 UJN | 92 NJ | 5.4 BNJ | 27 NJ | 0.60 UJN | 13 BNJ |
| Arsenic | 14 J | 5.5 J* | 33 J | 9.5 J | 103 J | 35 J | 5.7 J |
| Barium | 37 B | 53 BJ | 63 | 33 B | 68 | 54 B | 80 |
| Beryllium | 0.45 B | 0.50 BJ | 0.60 B | 0.53 B | 0.61 B | 0.50 B | 0.43 B |
| Cadmium | 1.2 B | 1.4 BJ | 23 | 4.2 | 53 | 7.4 | 3.6 |
| Calcium | 1170 B | 17000 J | 13100 | 3820 | 4810 | 2290 | 4220 |
| Chromium | 465 | 27 J | 280 | 50 | 2270 | 2130 | 55 |
| Chromium (Hexavalent) | 13 U | 25 U | 15 U | 16 U | 16 U | 14 U | 17 U |
| Cobalt | 9.4 B | 10 BJ | 11 B | 13 B | 9.7 B | 9.9 B | 12 B |
| Copper | 51 | 77 J | 187 | 44 | 426 | 214 | 56 |
| Iron | 28200 | 23100 J | 25000 | 35900 | 26500 | 26500 | 21900 |
| Lead | 174 | 182 J | 399 | 113 | 803 | 452 | 106 |
| Magnesium | 5670 | 11400 J | 9670 | 8960 | 7060 | 5950 | 5970 |
| Manganese | 285 | 527 J | 418 | 339 | 320 | 229 | 272 |
| Mercury | 68 | 0.73 J | 27 | 0.86 | 186 | 88 | 4.6 |
| Nickel | 22 | 24 J | 23 | 33 | 22 | 22 | 27 |
| Potassium | 647 B | 821 BJ | 1000 B | 724 B | 937 B | 844 B | 705 B |
| Selenium | 0.71 U | 1.4 UJ | 1.2 B | 0.88 U | 0.92 U | 0.76 U | 0.96 U |
| Silver | 0.33 U | 0.66 UJ | 0.40 U | 0.41 U | 0.43 U | 0.35 U | 0.44 U |
| Sodium | 37 U | 138 BJ | 99 U | 80 U | 156 U | 106 U | 85 U |
| Thallium | 0.85 B | 1.6 UJ | 0.98 U | 1.0 B | 1.2 B | 0.87 U | 1.2 B |
| Vanadium | 13 | 22 BJ | 16 | 18 | 16 B | 15 | 15 B |
| Zinc | 195 | 294 J | 1780 | 732 | 4650 | 1210 | 466 |
| Cyanide, total | 1.7 JN | 1.3 UJN | 16 JN | 0.52 BJN | 26 JN | 2.7 JN | 0.32 BJN |
| Cyanide, amenable to chlorination | 1.7 U | --- | 16 U | --- | 26 U | 2.7 U | --- |
| Percent solids (%) | 79 | 39 | 65 | 64 | 61 | 73 | 59 |
| pH | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | 11300 BJ | 63800 BJ | 50000 e BJ | 13400 BJ | 13400 e BJ | 13400 e BJ | 50000 e BJ |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-29A | WP-29A DUP | WP-29A | WP-29 | WP-29 | WP-29 | WP-CKOUT |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/14/2003 |
| Sample Depth | 6 - 12 in. | 6 - 12 in. | 12 - 17 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 13000 | 11600 | 18700 | 11800 | 10500 | 12800 | 11400 |
| Antimony | 91 NJ | 105 NJ | 0.73 UJN | 159 JN | 3 JN | 0.48 UJN | 1.7 BNJ |
| Arsenic | 162 J | 114 | 31 J | 20 | 26.6 | 43.9 | 18 |
| Barium | 82 | 70 B | 44 B | 68.8 J | 31.1 J | 80.7 | 130 |
| Beryllium | 0.69 B | 0.60 B | 0.73 B | 0.53 J | 0.44 J | 0.6 J | 0.59 B |
| Cadmium | 79 | 68 | 7.0 | 26.5 | 32.1 | 9.9 | 1.8 |
| Calcium | 6140 | 5380 | 2280 | 5840 | 2360 | 3900 | 3200 |
| Chromium | 2000 | 1490 | 1040 | 267 J | 620 J | 4120 J | 64 |
| Chromium (Hexavalent) | 19 U | 18 U | 17 U | 7.12 U | 6.43 U | 6.87 U | 14 U |
| Cobalt | 10 B | 8.9 B | 13 B | 10.8 J | 6.6 J | 9.4 J | 12 B |
| Copper | 504 | 391 | 173 | 154 | 115 | 462 | 154 |
| Iron | 26900 | 23900 | 41600 | 26900 | 25500 | 30300 | 30000 |
| Lead | 1050 | 859 | 348 | 376 | 321 | 637 | 182 |
| Magnesium | 6910 | 6410 | 10600 | 7320 | 5570 | 6190 | 4860 |
| Manganese | 369 | 316 | 254 | 366 JN | 208 JN | 322 JN | 2390 |
| Mercury | 144 | 130 J | 95 | 31.9 | 86.8 | 118 | 9.6 J |
| Nickel | 23 | 20 | 37 | 24.6 | 18 | 21.3 | 25 |
| Potassium | 1080 B | 901 B | 883 B | 1000 J | 679 J | 1180 J | 888 B |
| Selenium | 1.1 U | 1.3 B | 0.93 U | 1.4 J | 0.49 J | 2.1 | 1.8 |
| Silver | 0.49 U | 0.47 U | 0.43 U | 0.29 U | 0.2 U | 0.25 J | 0.37 U |
| Sodium | 119 U | 92 U | 64 U | 112 J | 47.8 J | 97.6 J | 114 U |
| Thallium | 1.4 B | 1.2 U | 1.1 U | 1.4 UJ | 0.97 UJ | 1.2 UJ | 2.2 B |
| Vanadium | 17 B | 15 B | 24 | 15.5 J | 12.1 J | 16.4 J | 19 |
| Zinc | 6500 | 5410 | 926 | 1980 | 2610 | 1330 | 836 |
| Cyanide, total | 34 JN | 34 JN | 6.2 JN | 27.7 | 6 | 6.1 | 0.27 BJN |
| Cyanide, amenable to chlorination | 34 U | 34 U | 6.2 U | 27.7 U | 6 U | 6.1 U | --- |
| Percent solids (%) | 53 | 55 | 60 | 56.2 | 62.2 | 58.2 | 70 |
| pH | --- | --- | --- | 8.4 | 7.8 | 7.6 | --- |
| Total organic carbon (mg/Kg) | 62900 BJ | 70100 BJ | 50000 e BJ | 21700 | 7330 | 105000 | 35900 |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-OD3 | WP-OD3 | WP-PL | WP-PL DUP | WP-PL | WP-PL1 | WP-PL1 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/08/2001 | 05/08/2001 | 05/08/2001 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 0 - 6 in. | 6 - 11 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 9310 | 11300 | 12500 J | 11900 J | 14000 J | 16000 J | 16700 J |
| Antimony | 1.7 BNJ | 2.9 BNJ | 6.3 JN | 4.5 JN | 3.4 JN | 7.1 BNJ | 4.7 BNJ |
| Arsenic | 6.4 | 7.0 | 16.4 J | 9.6 J | 105 | 13 J | 28 J |
| Barium | 58 | 58 B | 73.9 J | 70.4 J | 87.3 J | 90 BJ | 106 J |
| Beryllium | 0.41 B | 0.54 B | 0.63 J | 0.59 J | 0.67 J | 0.79 BJ | 0.83 BJ |
| Cadmium | 1.7 | 2.3 | 8.5 J | 6.4 J | 19.1 | 4.6 J | 2.3 BJ |
| Calcium | 1780 | 1880 | 6040 J | 5930 J | 4230 | 7220 J | 5050 J |
| Chromium | 48 | 89 | 544 J | 412 J | 3760 J | 335 J | 474 J |
| Chromium (Hexavalent) | 14 U | 15 U | 15.6 U | 16.2 U | 10.1 U | 35 U | 24 U |
| Cobalt | 8.2 B | 9.7 B | 13.3 J | 11.9 J | 9.6 J | 14 BJ | 12 BJ |
| Copper | 68 | 104 | 183 J | 158 J | 345 | 109 J | 104 J |
| Iron | 24600 | 23100 | 28400 J | 25600 J | 27800 | 30000 J | 26200 J |
| Lead | 130 | 243 | 279 J | 281 J | 629 | 181 J | 213 J |
| Magnesium | 5110 | 5250 | 5700 J | 5350 J | 4990 | 6570 J | 5670 J |
| Manganese | 690 | 171 | 386 JN | 408 JN | 354 JN | 456 J | 276 J |
| Mercury | 1.2 J | 2.4 J | 17 J | 9 J | 182 | 8.5 J | 14 J |
| Nickel | 19 | 22 | 40.7 J | 37 J | 22.9 | 37 J | 25 J |
| Potassium | 599 B | 887 B | 1330 J | 1230 J | 1140 J | 1470 BJ | 1170 BJ |
| Selenium | 0.78 U | 0.82 U | 3.3 J | 1.7 J | 3.5 | 2.0 UJ | 1.4 BJ |
| Silver | 0.36 U | 0.38 U | 1.2 J | 1.1 J | 0.55 J | 0.91 UJ | 0.61 UJ |
| Sodium | 49 U | 72 U | 189 J | 176 J | 147 J | 185 BJ | 133 BJ |
| Thallium | 1.4 B | 1.5 B | 2.7 UJ | 2.5 UJ | 1.8 UJ | 2.2 UJ | 1.5 UJ |
| Vanadium | 13 B | 15 | 21.2 J | 20.5 J | 17.2 J | 25 BJ | 20 BJ |
| Zinc | 244 | 307 | 825 J | 654 J | 1820 | 501 J | 275 J |
| Cyanide, total | 0.69 UJN | 0.28 BJN | 7.3 J | 1.7 UJ | 41.6 | 0.87 BJ | 0.52 BJ |
| Cyanide, amenable to chlorination | --- | --- | 2.2 | --- | 12.7 | --- | --- |
| Percent solids (%) | 72 | 68 | 25.6 | 24.7 | 39.5 | 29 | 43 |
| pH | --- | --- | 7.2 | 7.7 | 7.4 | --- | --- |
| Total organic carbon (mg/Kg) | 30500 e | 30500 | 115000 | 115000 | 82300 | 108000 J | 80500 J |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-PL1 | WP-PL2 | WP-PL2 | WP-PL2 | WP-PL3 | WP-PL3 | WP-T1A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 2 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/14/2003 |
| Sample Depth | 12 - 18 in. | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 16600 | 15000 J | 15700 J | 13200 J | 15900 J | 17100 J | 13700 J |
| Antimony | 0.79 UJN | 1.7 UJN | 1.3 UJN | 7.8 BNJ | 1.8 UJN | 21 BNJ | 1.3 UJN |
| Arsenic | 4.5 | 3.4 BJ | 5.6 BJ | 20 J | 4.3 BJ | 34 J | 6.8 J |
| Barium | 105 | 79 BJ | 86 BJ | 77 BJ | 87 BJ | 103 BJ | 68 BJ |
| Beryllium | 0.80 B | 0.74 BJ | 0.78 BJ | 0.63 BJ | 0.79 BJ | 0.82 BJ | 0.67 BJ |
| Cadmium | 0.40 B | 4.7 J | 5.0 J | 4.7 J | 4.9 J | 8.9 J | 1.9 BJ |
| Calcium | 4340 | 6420 J | 5450 J | 3670 J | 7350 J | 5310 J | 5910 J |
| Chromium | 24 | 204 J | 211 J | 574 J | 244 J | 1170 J | 53 J |
| Chromium (Hexavalent) | 18 U | 38 U | 30 U | 24 U | 42 U | 28 U | 29 U |
| Cobalt | 12 B | 13 BJ | 13 BJ | 9.7 BJ | 14 BJ | 13 BJ | 17 BJ |
| Copper | 24 | 162 J | 195 J | 112 J | 146 J | 225 J | 70 J |
| Iron | 24300 | 25500 J | 27000 J | 22600 J | 27800 J | 27900 J | 28700 J |
| Lead | 19 | 297 J | 405 J | 193 J | 258 J | 435 J | 87 J |
| Magnesium | 5800 | 6200 J | 6190 J | 4750 J | 6590 J | 5940 J | 6250 J |
| Manganese | 299 | 335 J | 301 J | 256 J | 349 J | 335 J | 527 J |
| Mercury | 0.30 | 8.1 J | 8.5 J | 20 J | 9.5 J | 27 J | 1.7 J |
| Nickel | 24 | 41 J | 36 J | 21 J | 43 J | 29 J | 35 J |
| Potassium | 1040 B | 1490 BJ | 1350 BJ | 954 BJ | 1540 BJ | 1360 BJ | 1190 BJ |
| Selenium | 1.1 B | 2.1 UJ | 2.0 BJ | 1.3 UJ | 2.3 UJ | 1.9 BJ | 1.6 UJ |
| Silver | 0.47 U | 0.98 UJ | 0.97 BJ | 0.61 UJ | 1.1 UJ | 0.74 UJ | 0.76 UJ |
| Sodium | 100 B | 221 BJ | 189 BJ | 134 BJ | 249 BJ | 199 BJ | 137 BJ |
| Thallium | 1.1 U | 2.4 UJ | 1.9 UJ | 1.5 UJ | 3.0 BJ | 1.8 UJ | 3.3 BJ |
| Vanadium | 18 | 22 BJ | 25 BJ | 16 BJ | 25 BJ | 24 BJ | 24 BJ |
| Zinc | 79 | 488 J | 515 J | 431 J | 492 J | 887 J | 240 J |
| Cyanide, total | 0.65 B | 1.9 UJ | 0.49 BJ | 8.0 J | 0.68 BJ | 11 J | 0.65 BJ |
| Cyanide, amenable to chlorination | --- | --- | --- | 1.7 | --- | 11 U | --- |
| Percent solids (%) | 56 | 26 | 34 | 43 | 24 | 35 | 34 |
| pH | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | 51700 | 58700 BJ | 64200 BJ | 77000 BJ | 93900 BJ | 118000 BJ | 50000 e J |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-T1A | WP-T1A | WP-T1C | WP-T1C | WP-OD2 | WP-OD2 | WP-OD2 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 10 in. | 0 - 6 in. | 6 - 12 in. | 12 - 22 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 12900 J | 13500 | 9690 | 11500 | 12600 J | 11700 J | 12700 |
| Antimony | 3.7 BNJ | 0.75 UJN | 40 NJ | 52 NJ | 1.5 UJN | 0.91 UJN | 0.70 UJN |
| Arsenic | 8.0 J | 13 | 6.2 | 22 | 5.3 BJ | 5.1 J | 16 |
| Barium | 69 BJ | 57 B | 42 B | 60 B | 66 BJ | 60 BJ | 48 B |
| Beryllium | 0.66 BJ | 0.62 B | 0.46 B | 0.58 B | 0.61 BJ | 0.54 BJ | 0.56 B |
| Cadmium | 4.5 J | 1.6 B | 3.3 | 13 | 2.3 BJ | 2.2 J | 4.0 |
| Calcium | 4730 J | 2700 | 4590 | 4060 | 5310 J | 3120 J | 1950 |
| Chromium | 148 J | 242 | 74 | 274 | 68 J | 78 J | 351 |
| Chromium (Hexavalent) | 23 U | 17 U | 14 U | 16 U | 33 U | 21 U | 16 U |
| Cobalt | 14 BJ | 11 B | 10 B | 10 B | 14 BJ | 12 BJ | 12 B |
| Copper | 117 J | 48 | 61 | 132 | 69 J | 63 J | 55 |
| Iron | 25900 J | 26000 | 22400 | 24900 | 25300 J | 24900 J | 27800 |
| Lead | 210 J | 101 | 92 | 230 | 96 J | 111 J | 102 |
| Magnesium | 5960 J | 5920 | 5590 | 5550 | 6150 J | 5370 J | 5780 |
| Manganese | 351 J | 284 | 363 | 306 | 433 J | 305 J | 284 |
| Mercury | 4.6 J | 3.1 J | 4.8 J | 20 J | 1.9 J | 2.5 J | 19 J |
| Nickel | 35 J | 23 | 22 | 22 | 36 J | 31 J | 24 |
| Potassium | 1090 BJ | 1020 B | 756 B | 916 B | 1260 BJ | 951 BJ | 1080 B |
| Selenium | 1.5 BJ | 0.95 U | 0.80 U | 0.90 U | 1.8 UJ | 1.2 UJ | 0.90 U |
| Silver | 0.61 UJ | 0.44 U | 0.37 U | 0.42 U | 0.86 UJ | 0.53 UJ | 0.42 U |
| Sodium | 102 BJ | 69 U | 124 U | 115 U | 156 BJ | 90 BJ | 381 U |
| Thallium | 3.0 BJ | 1.1 B | 1.0 B | 1.5 B | 2.4 BJ | 1.3 UJ | 1.6 B |
| Vanadium | 25 J | 16 B | 14 B | 15 B | 24 BJ | 21 J | 16 B |
| Zinc | 452 J | 192 | 323 | 1050 | 266 J | 250 J | 442 |
| Cyanide, total | 0.84 BJN | 0.33 BN | 3.9 N | 4.3 N | 1.7 UJN | 0.34 UJN | 0.80 UN |
| Cyanide, amenable to chlorination | --- | --- | 3.9 U | 4.3 U | --- | --- | --- |
| Percent solids (%) | 43 | 59 | 70 | 63 | 30 | 49 | 63 |
| pH | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | 50000 e J | 85400 J | 31100 e | 31100 | 41100 e J | 41100 e J | 41100 J |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

# Table A-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-T2A | WP-T2A | WP-T2B | WP-T2B | WP-T2B | WP-T2C | WP-T2C |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 13100 J | 10300 | 14700 J | 11800 | 11400 | 11900 J | 14000 |
| Antimony | 1.6 UJN | 8.9 BNJ | 1.4 UJN | 0.58 UJN | 0.65 UJN | 1.3 UJN | 0.87 UJN |
| Arsenic | 5.3 BJ | 7.5 | 6.5 J | 3.8 | 2.2 B | 7.7 J | 40 |
| Barium | 70 BJ | 45 B | 78 BJ | 28 B | 41 B | 65 BJ | 60 B |
| Beryllium | 0.70 BJ | 0.44 B | 0.69 BJ | 0.38 B | 0.44 B | 0.61 BJ | 0.64 B |
| Cadmium | 1.9 BJ | 2.8 | 1.5 BJ | 1.1 B | 0.56 B | 4.6 J | 5.6 |
| Calcium | 6070 J | 2290 | 7300 J | 1630 | 1740 | 6760 J | 3170 |
| Chromium | 58 J | 119 | 34 J | 27 | 17 | 64 J | 826 |
| Chromium (Hexavalent) | 15 U | 6.3 U | 31 U | 13 U | 15 U | 31 U | 20 U |
| Cobalt | 14 BJ | 11 B | 18 BJ | 14 | 10 B | 18 BJ | 14 B |
| Copper | 69 J | 46 | 50 J | 22 | 14 | 90 J | 129 |
| Iron | 27500 J | 22400 | 29600 J | 26900 | 23300 | 25700 J | 27800 |
| Lead | 86 J | 91 | 106 J | 40 | 26 | 125 J | 287 |
| Magnesium | 6270 J | 4830 | 7780 J | 7170 | 5240 | 6670 J | 6280 |
| Manganese | 633 J | 228 | 506 J | 248 | 247 | 421 J | 290 |
| Mercury | 1.4 J | 3.9 | 0.46 J | 0.17 | 0.18 | 1.7 J | 33 |
| Nickel | 32 J | 21 | 35 J | 26 | 20 | 37 J | 29 |
| Potassium | 1400 BJ | 896 B | 1540 BJ | 740 B | 960 B | 1310 BJ | 1270 B |
| Selenium | 2.0 UJ | 0.89 U | 1.7 UJ | 0.74 U | 0.82 U | 1.7 UJ | 1.1 U |
| Silver | 0.95 UJ | 0.41 U | 0.80 UJ | 0.34 U | 0.38 U | 0.80 UJ | 0.51 U |
| Sodium | 184 BJ | 76 B | 195 BJ | 56 B | 88 B | 163 BJ | 124 B |
| Thallium | 2.3 UJ | 1.0 U | 2.0 UJ | 0.86 BJ | 1.5 BJ | 2.0 UJ | 1.3 U |
| Vanadium | 22 BJ | 13 B | 23 BJ | 13 B | 13 B | 22 BJ | 18 B |
| Zinc | 265 J | 311 | 238 J | 155 | 82 | 470 J | 588 |
| Cyanide, total | 1.8 UJ | 0.44 B | 1.5 UJ | 0.33 B | 0.74 U | 1.5 UJ | 1.5 |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | 1.5 U |
| Percent solids (%) | 27 | 63 | 33 | 75 | 68 | 33 | 51 |
| pH | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | 49600 BJ | 31400 B | 49000 J | 26400 J | 19100 | 45000 BJ | 59000 B |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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DBF File: Q:\10653_NYSDEC\27258_THREESTAR\TEMPDATA.DBF
FXP File: Q:\10653_NYSDEC\27258_THREESTAR\TABLEPRK.FXP

File Number: 10653.27258

# Table A-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-T2C | WP-OD1 | WP-OD1 | WP-OD1 | WP-T3A | WP-T3A DUP | WP-T3A |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 12 - 19 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 13400 | 12200 J | 17000 | 15800 | 15800 J | 14600 J | 19000 J |
| Antimony | 0.63 UJN | 1.6 UJN | 0.87 UJN | 0.83 UJN | 1.5 UJN | 1.5 UJN | 1.2 UJN |
| Arsenic | 3.8 | 16 J | 21 | 5.0 | 6.1 BJ | 6.1 BJ | 10 J |
| Barium | 45 B | 67 BJ | 87 | 81 | 92 BJ | 84 BJ | 95 BJ |
| Beryllium | 0.50 B | 0.69 BJ | 0.83 B | 0.79 B | 0.82 BJ | 0.73 BJ | 0.94 BJ |
| Cadmium | 0.42 B | 5.8 J | 1.8 B | 0.58 B | 2.8 BJ | 2.4 BJ | 3.7 J |
| Calcium | 1710 | 6940 J | 3700 | 3130 | 8830 J | 8110 J | 10200 J |
| Chromium | 31 | 247 J | 566 | 23 | 66 J | 60 J | 110 J |
| Chromium (Hexavalent) | 5.7 U | 15 U | 20 U | 19 U | 34 U | 34 U | 28 U |
| Cobalt | 10 B | 20 BJ | 14 B | 12 B | 17 BJ | 15 BJ | 19 BJ |
| Copper | 18 | 89 J | 89 | 23 | 84 J | 73 J | 99 J |
| Iron | 25500 | 28000 J | 29200 | 26800 | 30800 J | 28300 J | 38100 J |
| Lead | 37 | 138 J | 218 | 66 | 106 J | 94 J | 136 J |
| Magnesium | 6130 | 6070 J | 6320 | 5930 | 8070 J | 7860 J | 12900 J |
| Manganese | 242 | 450 J | 366 | 374 | 469 J | 445 J | 492 J |
| Mercury | 0.095 | 8.3 J | 20 | 0.11 | 1.1 J | 1.3 J | 2.7 J |
| Nickel | 23 | 47 J | 29 | 26 | 42 J | 38 J | 48 J |
| Potassium | 990 B | 1490 BJ | 1560 B | 1470 B | 1900 BJ | 1720 BJ | 1840 BJ |
| Selenium | 0.80 U | 2.1 UJ | 1.1 U | 1.1 U | 1.9 UJ | 1.9 UJ | 1.5 UJ |
| Silver | 0.37 U | 0.97 UJ | 0.51 U | 0.49 U | 0.88 UJ | 0.90 UJ | 0.72 UJ |
| Sodium | 99 B | 222 BJ | 185 B | 165 B | 223 BJ | 207 BJ | 180 BJ |
| Thallium | 0.91 U | 3.1 BJ | 1.7 BJ | 2.2 BJ | 2.2 UJ | 2.2 UJ | 1.8 UJ |
| Vanadium | 15 | 28 BJ | 23 | 22 | 38 J | 31 BJ | 51 J |
| Zinc | 73 | 611 J | 251 | 84 | 316 J | 281 J | 364 J |
| Cyanide, total | 0.27 B | 1.9 UJ | 0.60 B | 0.95 U | 1.7 UJ | 1.7 UJ | 1.4 UJ |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | --- |
| Percent solids (%) | 70 | 27 | 51 | 53 | 30 | 29 | 36 |
| pH | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | 11000 B | 56500 BJ | 60700 B | 37600 B | 56400 J | 69300 BJ | 57700 J |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

# Table A-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations

| Sample ID | WP-T3A | WP-T3B | WP-T3B | WP-T3B | WP-T3C | WP-T3C |
|---|---|---|---|---|---|---|
| Location Cross Reference | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 | Section 3 |
| Sample Date | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 11 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | |
| Aluminum | 15900 | 14500 J | 16500 J | 16600 | 15700 J | 15400 J |
| Antimony | 2.4 BNJ | 1.5 UJN | 0.96 UJN | 0.82 UJN | 1.4 UJN | 1.3 BNJ |
| Arsenic | 30 | 5.0 BJ | 8.4 J | 6.4 | 5.8 BJ | 9.3 J |
| Barium | 86 | 94 BJ | 91 J | 81 | 92 BJ | 91 J |
| Beryllium | 0.76 B | 0.79 BJ | 0.82 BJ | 0.80 B | 0.89 BJ | 0.81 BJ |
| Cadmium | 5.3 | 1.7 BJ | 1.5 BJ | 0.61 B | 2.6 BJ | 3.4 J |
| Calcium | 4460 | 11500 J | 4860 J | 3150 | 8620 J | 5800 J |
| Chromium | 322 | 44 J | 159 J | 53 | 60 J | 115 J |
| Chromium (Hexavalent) | 18 U | 14 U | 8.7 U | 7.4 U | 32 U | 22 U |
| Cobalt | 13 B | 14 BJ | 15 BJ | 14 B | 15 BJ | 14 BJ |
| Copper | 81 | 56 J | 53 J | 29 | 79 J | 78 J |
| Iron | 27900 | 30200 J | 30200 J | 29600 | 31500 J | 31100 J |
| Lead | 160 | 67 J | 94 J | 188 | 94 J | 125 J |
| Magnesium | 6970 | 7180 J | 7110 J | 6520 | 7830 J | 6830 J |
| Manganese | 400 | 702 J | 495 J | 430 | 508 J | 466 J |
| Mercury | 13 | 0.77 J | 0.44 J | 0.13 | 0.84 J | 4.9 J |
| Nickel | 27 | 31 J | 34 J | 29 | 41 J | 33 J |
| Potassium | 1610 B | 1750 BJ | 1650 BJ | 1640 B | 2010 BJ | 1590 BJ |
| Selenium | 1.1 B | 2.0 UJ | 1.2 UJ | 1.0 U | 1.8 UJ | 1.5 BJ |
| Silver | 0.48 U | 0.91 UJ | 0.57 UJ | 0.48 U | 0.83 UJ | 0.58 UJ |
| Sodium | 129 B | 195 BJ | 144 BJ | 132 B | 249 BJ | 179 BJ |
| Thallium | 1.2 U | 2.3 BJ | 2.5 BJ | 2.0 BJ | 2.1 UJ | 1.4 UJ |
| Vanadium | 21 | 25 BJ | 28 J | 23 | 42 J | 28 J |
| Zinc | 508 | 222 J | 179 J | 92 | 269 J | 353 J |
| Cyanide, total | 2.7 | 1.7 UJ | 1.1 UJ | 0.93 U | 1.6 UJ | 0.36 BJ |
| Cyanide, amenable to chlorination | 2.7 U | --- | --- | --- | --- | --- |
| Percent solids (%) | 54 | 29 | 46 | 54 | 31 | 45 |
| pH | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | 44200 J | 39600 BJ | 38000 BJ | 19700 B | 72000 J | 63800 J |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.



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# Table A-4
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Sediment Samples
## Pesticides/PCB Data

| Sample ID | WP-LK01-A | WP-LK01-A | WP-LK01-A | WP-LK01-B | WP-LK01-B | WP-LK01-B | WP-LK01-C |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 |
| Sample Depth | 0 - 72 in. | 6 - 144 in. | 19 - 300 in. | 0 - 72 in. | 6 - 144 in. | 25 - 372 in. | 0 - 72 in. |
| Units | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| Compound | | | | | | | |
| 4,4'-DDD | 13 UJ | 9.5 UJ | 9.2 J | 15 UJ | 11 UJ | 12 J | 14 UJ |
| 4,4'-DDE | 13 UJ | 9.5 UJ | 9.4 J | 15 UJ | 6.7 J | 13 JP | 14 UJ |
| 4,4'-DDT | 13 UJ | 9.5 UJ | 7 UJ | 15 UJ | 11 UJ | 6.9 UJ | 14 UJ |
| Aldrin | 6.5 UJ | 4.7 UJ | 3.5 UJ | 7.3 UJ | 5.5 UJ | 3.4 UJ | 6.8 UJ |
| Aroclor 1016 | 130 UJ | 95 UJ | 70 UJ | 150 UJ | 110 UJ | 69 UJ | 140 UJ |
| Aroclor 1221 | 260 UJ | 190 UJ | 140 UJ | 290 UJ | 220 UJ | 140 UJ | 67 UJ |
| Aroclor 1232 | 130 UJ | 95 UJ | 70 UJ | 150 UJ | 110 UJ | 69 UJ | 140 UJ |
| Aroclor 1242 | 130 UJ | 95 UJ | 70 UJ | 150 UJ | 110 UJ | 69 UJ | 140 UJ |
| Aroclor 1248 | 130 UJ | 95 UJ | 70 UJ | 150 UJ | 110 UJ | 69 UJ | 140 UJ |
| Aroclor 1254 | 130 UJ | 95 UJ | 70 UJ | 150 UJ | 110 UJ | 69 UJ | 140 UJ |
| Aroclor 1260 | 130 UJ | 95 UJ | 70 UJ | 150 UJ | 110 UJ | 69 UJ | 140 UJ |
| Dieldrin | 13 UJ | 9.5 UJ | 3.2 J | 15 UJ | 11 UJ | 6.9 UJ | 14 UJ |
| Endosulfan I | 6.5 UJ | 4.7 UJ | 3.5 UJ | 7.3 UJ | 5.5 UJ | 3.4 UJ | 6.8 UJ |
| Endosulfan II | 13 UJ | 9.5 UJ | 7 UJ | 15 UJ | 11 UJ | 6.9 UJ | 14 UJ |
| Endosulfan sulfate | 13 UJ | 9.8 JNP | 7 UJ | 15 UJ | 11 UJ | 6.9 UJ | 14 UJ |
| Endrin | 13 UJ | 5.7 JP | 7 UJ | 15 UJ | 11 UJ | 6.9 UJ | 14 UJ |
| Endrin aldehyde | 13 UJ | 9.5 UJ | 7 UJ | 15 UJ | 11 UJ | 6.9 UJ | 14 UJ |
| Endrin ketone | 13 UJ | 9.5 UJ | 7 UJ | 15 UJ | 11 UJ | 6.9 UJ | 14 UJ |
| Heptachlor | 6.5 UJ | 4.7 UJ | 3.5 UJ | 7.3 UJ | 5.5 UJ | 3.4 UJ | 6.8 UJ |
| Heptachlor epoxide | 6.5 UJ | 4.7 UJ | 3.5 UJ | 7.3 UJ | 5.5 UJ | 3.4 UJ | 6.8 UJ |
| Methoxychlor | 65 UJ | 47 UJ | 35 UJ | 73 UJ | 55 UJ | 34 UJ | 67 UJ |
| Toxaphene | 650 UJ | 470 UJ | 350 UJ | 730 UJ | 550 UJ | 340 UJ | 670 UJ |
| alpha-BHC | 6.5 UJ | 4.7 UJ | 3.5 UJ | 7.3 UJ | 5.5 UJ | 3.4 UJ | 6.8 UJ |
| alpha-Chlordane | 6.5 UJ | 4.7 UJ | 3.5 UJ | BJ UJ | 3.6 JP | 3.4 UJ | 6.8 UJ |
| beta-BHC | 6.5 UJ | 4.7 UJ | 3.5 UJ | 7.3 UJ | 5.5 UJ | 3.4 UJ | 6.8 UJ |
| delta-BHC | 6.5 UJ | 4.7 UJ | 3.5 UJ | 7.3 UJ | 5.5 UJ | 3.4 UJ | 6.8 UJ |
| gamma-BHC (Lindane) | 6.5 UJ | 4.7 UJ | 3.5 UJ | 7.3 UJ | 5.5 UJ | 3.4 UJ | 6.8 UJ |
| gamma-Chlordane | 6.5 UJ | 4.7 UJ | 3.5 UJ | 7.3 UJ | 5.5 UJ | 2 J | 6.8 UJ |

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.

# Table A-4
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Sediment Samples
## Pesticides/PCB Data

| Sample ID | WP-LK01-C | WP-LK01-C | WP-01-A | WP-04.45-9 | WP-09A | WP-11A | LG-OUT |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 05/10/2001 | 05/10/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 |
| Sample Depth | 6 - 144 in. | 26 - 384 in. | 0 - 72 in. | 0 - 72 in. | 0 - 72 in. | 0 - 72 in. | 0 - 72 in. |
| Units | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| Compound | | | | | | | |
| 4,4'-DDD | 8.6 UJ | 6.9 UJ | 4 U | 4.4 U | 4.3 U | 4.5 U | 2.9 JP |
| 4,4'-DDE | 7.8 J | 8 JP | 4 U | 4.4 U | 4.3 U | 4.5 U | 4.3 U |
| 4,4'-DDT | 8.6 UJ | 6.9 UJ | 4 U | 6.6 BPJ | 4.3 U | 4.5 U | 5.4 BPJN |
| Aldrin | 4.3 UJ | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| Aroclor 1016 | 86 UJ | 69 UJ | 40 U | 44 U | 43 U | 45 U | 43 U |
| Aroclor 1221 | 170 UJ | 140 UJ | 80 U | 89 U | 86 U | 90 U | 85 U |
| Aroclor 1232 | 86 UJ | 69 UJ | 40 U | 44 U | 43 U | 45 U | 43 U |
| Aroclor 1242 | 86 UJ | 69 UJ | 40 U | 44 U | 43 U | 45 U | 43 U |
| Aroclor 1248 | 86 UJ | 69 UJ | 40 U | 44 U | 43 U | 45 U | 43 U |
| Aroclor 1254 | 86 UJ | 69 UJ | 40 U | 44 U | 43 U | 45 U | 43 U |
| Aroclor 1260 | 86 UJ | 69 UJ | 40 U | 44 U | 43 U | 45 U | 43 U |
| Dieldrin | 8.6 UJ | 6.9 UJ | 4 U | 4.4 U | 6.8 PNJ | 4.5 U | 4.3 U |
| Endosulfan I | 4.3 UJ | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| Endosulfan II | 8.6 UJ | 6.9 UJ | 4 U | 4.4 U | 4.3 U | 4.5 U | 4.3 U |
| Endosulfan sulfate | 8.6 UJ | 6.9 UJ | 4 U | 4.4 U | 4.3 U | 4.5 U | 4.3 U |
| Endrin | 8.6 UJ | 6.9 UJ | 4 U | R | R | 4.5 U | R |
| Endrin aldehyde | R | 6.9 UJ | 4 U | 4.4 U | 4.3 U | 4.5 U | 4.3 U |
| Endrin ketone | 8.6 UJ | 6.9 UJ | 4 U | 4.4 U | 4.3 U | 4.5 U | R |
| Heptachlor | 4.3 UJ | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| Heptachlor epoxide | 4.3 UJ | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| Methoxychlor | 43 UJ | 34 UJ | 20 U | 22 U | 22 UJ | 23 UJ | 21 U |
| Toxaphene | 430 UJ | 340 UJ | 200 U | 220 U | 220 U | 230 U | 210 U |
| alpha-BHC | 4.3 UJ | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| alpha-Chlordane | 2.5 JP | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| beta-BHC | 4.3 UJ | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| delta-BHC | 4.3 UJ | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| gamma-BHC (Lindane) | 4.3 UJ | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| gamma-Chlordane | 4.3 UJ | 3.4 UJ | 2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.



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FXP File: Q:\10653_NYSDEC\27258_ThreeStar\appswsed.prg

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# Table A-4
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Sediment Samples
## Pesticides/PCB Data

| Sample ID | WP-16 | WP-18 | WP-18 | WP-29 | WP-29 | WP-29 | WP-PL |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/08/2001 |
| Sample Depth | 0 - 72 in. | 0 - 72 in. | 6 - 144 in. | 0 - 72 in. | 6 - 144 in. | 12 - 216 in. | 0 - 72 in. |
| Units | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| Compound | | | | | | | |
| 4,4'-DDD | 4 U | 4.9 U | 2.5 JP | 6.6 U | 4.5 U | 5.7 U | 12 JP |
| 4,4'-DDE | 4 U | 4.9 U | 3.9 U | 6.6 U | 4.5 U | 5.7 U | 12 UJ |
| 4,4'-DDT | 4 U | 4.9 U | 3.9 U | 6.6 U | 4.5 U | 5.7 U | 12 UJ |
| Aldrin | 2 U | 2.5 U | 2 U | 3.3 U | 2.2 U | 2.8 U | 6.2 UJ |
| Aroclor 1016 | 40 U | 49 U | 39 U | 66 U | 45 U | 33 U | 120 UJ |
| Aroclor 1221 | 80 U | 98 U | 78 U | 130 U | 90 U | 67 U | 250 UJ |
| Aroclor 1232 | 40 U | 49 U | 39 U | 66 U | 45 U | 33 U | 120 UJ |
| Aroclor 1242 | 40 U | 49 U | 39 U | 66 U | 45 U | 33 U | 120 UJ |
| Aroclor 1248 | 40 U | 49 U | 39 U | 66 U | 45 U | 33 U | 120 UJ |
| Aroclor 1254 | 40 U | 49 U | 39 U | 66 U | 45 U | 33 U | 120 UJ |
| Aroclor 1260 | 40 U | 49 U | 39 U | 66 U | 45 U | 33 U | 120 UJ |
| Dieldrin | 4 U | 5.3 JP | 3.9 U | 6.6 U | 4.5 U | 5.7 U | 12 UJ |
| Endosulfan I | 2 U | 2.5 U | 2 U | 3.3 U | 2.2 U | 2.8 U | 6.2 UJ |
| Endosulfan II | 4 U | 4.9 U | 3.9 U | 6.6 U | 3 BJ | 6.4 BPJN | 6.8 BJ |
| Endosulfan sulfate | 4 U | 4.9 U | 3.9 U | 6.6 U | 4.5 U | 5.7 U | 12 UJ |
| Endrin | 4 U | 3.3 J | 3.9 U | 6.6 U | 4.5 U | 5.7 U | R |
| Endrin aldehyde | 4 U | 4.9 U | 3.9 U | 6.6 U | 4.5 U | 5.7 U | 12 UJ |
| Endrin ketone | 4 U | 4.9 U | 4.6 PJN | 6.6 U | 13 PJ | 32 JN | 7 JP |
| Heptachlor | 2 U | 2.5 U | 2 U | 3.3 U | 2.2 U | 2.8 U | 6.2 UJ |
| Heptachlor epoxide | 2 U | 2.5 U | 1 JP | 3.3 U | 2.2 U | 2.8 U | 6.2 UJ |
| Methoxychlor | 20 U | 25 U | 20 U | 66 UJ | 22 UJ | 17 UJ | 62 UJ |
| Toxaphene | 200 U | 250 U | 200 U | 660 U | 220 U | 170 U | 170 UJ |
| alpha-BHC | 2 U | 2.5 U | 2 U | 3.3 U | 2.2 U | 2.8 JP | 6.2 UJ |
| alpha-Chlordane | 2 U | 2.5 U | 2 U | 3.3 U | 2.2 U | 2.8 U | 6.2 UJ |
| beta-BHC | 2 U | 2.5 U | 2 U | 3.3 U | 2.2 U | 2.8 U | 6.2 UJ |
| delta-BHC | 2 U | 2.5 U | 2 U | 3.3 U | 2.2 U | 2.8 U | 6.2 UJ |
| gamma-BHC (Lindane) | 2 U | 2.5 U | 2 U | 3.3 U | 2.2 U | 2.8 U | 6.2 UJ |
| gamma-Chlordane | 2 U | 2.5 U | 2 U | 3.3 U | 2.2 U | R | 6.2 UJ |

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.



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# Table A-4
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Sediment Samples
## Pesticides/PCB Data

| | |
|---|---|
| Sample ID | WP-PL |
| Location Cross Reference | |
| Sample Date | 05/08/2001 |
| Sample Depth | 6 - 132 in. |
| Units | ug/Kg |
| **Compound** | |
| 4,4'-DDD | 8.4 UJ |
| 4,4'-DDE | 8.4 UJ |
| 4,4'-DDT | 8.4 UJ |
| Aldrin | 4.2 UJ |
| Aroclor 1016 | 84 UJ |
| Aroclor 1221 | 170 UJ |
| Aroclor 1232 | 84 UJ |
| Aroclor 1242 | 84 UJ |
| Aroclor 1248 | 84 UJ |
| Aroclor 1254 | 84 UJ |
| Aroclor 1260 | 84 UJ |
| Dieldrin | 8.4 UJ |
| Endosulfan I | 4.2 UJ |
| Endosulfan II | 4.9 BJP |
| Endosulfan sulfate | 8.4 UJ |
| Endrin | 8.4 UJ |
| Endrin aldehyde | 8.4 UJ |
| Endrin ketone | 8.4 UJ |
| Heptachlor | 4.2 UJ |
| Heptachlor epoxide | 4.2 UJ |
| Methoxychlor | 42 UJ |
| Toxaphene | 420 UJ |
| alpha-BHC | 4.2 UJ |
| alpha-Chlordane | 4.2 UJ |
| beta-BHC | 4.2 UJ |
| delta-BHC | 4.2 UJ |
| gamma-BHC (Lindane) | 4.2 UJ |
| gamma-Chlordane | 4.2 UJ |

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.

# Table A-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Surface Water Samples
## Volatile Organic Compound Data

| Sample ID | Wappingers Lake | Site Bridge 1 | Site Bridge 2 | WP13-SW | WP18-SW | WP35-SW |
|---|---|---|---|---|---|---|
| Location Cross Reference | Route 9D | WP5-SW | WP10-SW | | | |
| Sample Date | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 |
| Sample Depth | | | | | | |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Compound | | | | | | |
| Chloromethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Bromomethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Vinyl chloride | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Chloroethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Methylene chloride | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Acetone | 10 U | 3 J | 10 U | 10 U | 10 U | 10 U |
| Carbon disulfide | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,1-Dichloroethene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,1-Dichloroethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| cis-1,2-Dichloroethene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| trans-1,2-Dichloroethene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Chloroform | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,2-Dichloroethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2-Butanone (MEK) | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,1,1-Trichloroethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Carbon tetrachloride | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Bromodichloromethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,2-Dichloropropane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| cis-1,3-Dichloropropylene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Trichloroethene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Benzene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Dibromochloromethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| trans-1,3-Dichloropropene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,1,2-Trichloroethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Bromoform | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 4-Methyl-2-pentanone (MIBK) | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2-Hexanone | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Tetrachloroethene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,1,2,2-Tetrachloroethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Toluene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Chlorobenzene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Ethylbenzene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Styrene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Xylene (total) | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |

NOTES: U - not detected, J - estimated value.



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File Number: 10653.27258

# Table A-6
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Surface Water Samples
## Semi-Volatile Organic Compound Data

| Sample ID | Wappingers Lake | Site Bridge 1 | Site Bridge 2 | WP13-SW | WP18-SW | WP35-SW |
|---|---|---|---|---|---|---|
| Location Cross Reference | Route 9D | WP5-SW | WP10-SW | | | |
| Sample Date | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 |
| Sample Depth | | | | | | |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Compound | | | | | | |
| Bis(2-chloroethyl)ether | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Phenol | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2-Chlorophenol | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,3-Dichlorobenzene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,4-Dichlorobenzene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,2-Dichlorobenzene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Bis(2-chloroisopropyl) ether | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2-Methylphenol | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Hexachloroethane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| N-Nitrosodipropylamine | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 4-Methylphenol | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Nitrobenzene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Isophorone | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2-Nitrophenol | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2,4-Dimethylphenol | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Bis(2-chloroethoxy)methane | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2,4-Dichlorophenol | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 1,2,4-Trichlorobenzene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Naphthalene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 4-Chloroaniline | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Hexachlorobutadiene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 4-Chloro-3-methylphenol | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2-Methylnaphthalene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Hexachlorocyclopentadiene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2,4,6-Trichlorophenol | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2,4,5-Trichlorophenol | 25 U | 25 U | 25 U | 25 U | 25 U | 25 U |
| 2-Chloronaphthalene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2-Nitroaniline | 25 U | 25 U | 25 U | 25 U | 25 U | 25 U |
| Acenaphthylene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Dimethyl phthalate | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2,6-Dinitrotoluene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Acenaphthene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 3-Nitroaniline | 25 U | 25 U | 25 U | 25 U | 25 U | 25 U |
| 2,4-Dinitrophenol | 25 U | 25 U | 25 U | 25 U | 25 U | 25 U |
| Dibenzofuran | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 2,4-Dinitrotoluene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 4-Nitrophenol | 25 U | 25 U | 25 U | 25 U | 25 U | 25 U |
| Fluorene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 4-Chlorophenyl phenyl ether | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Diethyl phthalate | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |

NOTES: U - not detected, J - estimated value.



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# Table A-6
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Surface Water Samples
## Semi-Volatile Organic Compound Data

| Sample ID | Wappingers Lake | Site Bridge 1 | Site Bridge 2 | WP13-SW | WP18-SW | WP35-SW |
|---|---|---|---|---|---|---|
| Location Cross Reference | Route 9D | WP5-SW | WP10-SW | | | |
| Sample Date | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 |
| Sample Depth | | | | | | |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Compound | | | | | | |
| 4-Nitroaniline | 25 U | 25 U | 25 U | 25 U | 25 U | 25 U |
| 4,6-Dinitro-2-methylphenol | 25 U | 25 U | 25 U | 25 U | 25 U | 25 U |
| N-Nitrosodiphenylamine | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 4-Bromophenyl phenyl ether | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Hexachlorobenzene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Pentachlorophenol | 25 U | 25 U | 25 U | 25 U | 25 U | 25 U |
| Phenanthrene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Anthracene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Di-n-butyl phthalate | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Carbazole | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Fluoranthene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Pyrene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Butyl benzyl phthalate | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| 3,3-Dichlorobenzidine | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Benzo(a)anthracene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Chrysene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Di-n-octyl phthalate | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Benzo(b)fluoranthene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Benzo(k)fluoranthene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Benzo[a]pyrene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Indeno(1,2,3-cd)pyrene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Dibenzo(a,h)anthracene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Benzo(ghi)perylene | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |

NOTES: U - not detected, J - estimated value.



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# Table A-7
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Surface Water Samples
## Pesticides/PCB Data

| Sample ID | Wappingers Lake | Site Bridge 1 | Site Bridge 2 | WP13-SW | WP18-SW | WP35-SW |
|---|---|---|---|---|---|---|
| Location Cross Reference | Route 9D | WP5-SW | WP10-SW | | | |
| Sample Date | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 | 07/12/2001 |
| Sample Depth | | | | | | |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Compound | | | | | | |
| 4,4'-DDD | 0.11 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| 4,4'-DDE | 0.11 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| 4,4'-DDT | 0.11 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Aldrin | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |
| Aroclor 1016 | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Aroclor 1221 | 2.2 U | 2 U | 2 U | 2 U | 2 U | 2 U |
| Aroclor 1232 | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Aroclor 1242 | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Aroclor 1248 | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Aroclor 1254 | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Aroclor 1260 | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Dieldrin | 0.11 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Endosulfan I | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |
| Endosulfan II | 0.11 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Endosulfan sulfate | 0.11 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Endrin | 0.11 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Endrin aldehyde | 0.11 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Endrin ketone | 0.11 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Heptachlor | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |
| Heptachlor epoxide | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |
| Methoxychlor | 0.56 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.51 U |
| Toxaphene | 5.6 U | 5 U | 5 U | 5 U | 5 U | 5.1 U |
| alpha-BHC | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |
| alpha-Chlordane | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |
| beta-BHC | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |
| delta-BHC | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |
| gamma-BHC (Lindane) | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |
| gamma-Chlordane | 0.056 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.051 U |

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.



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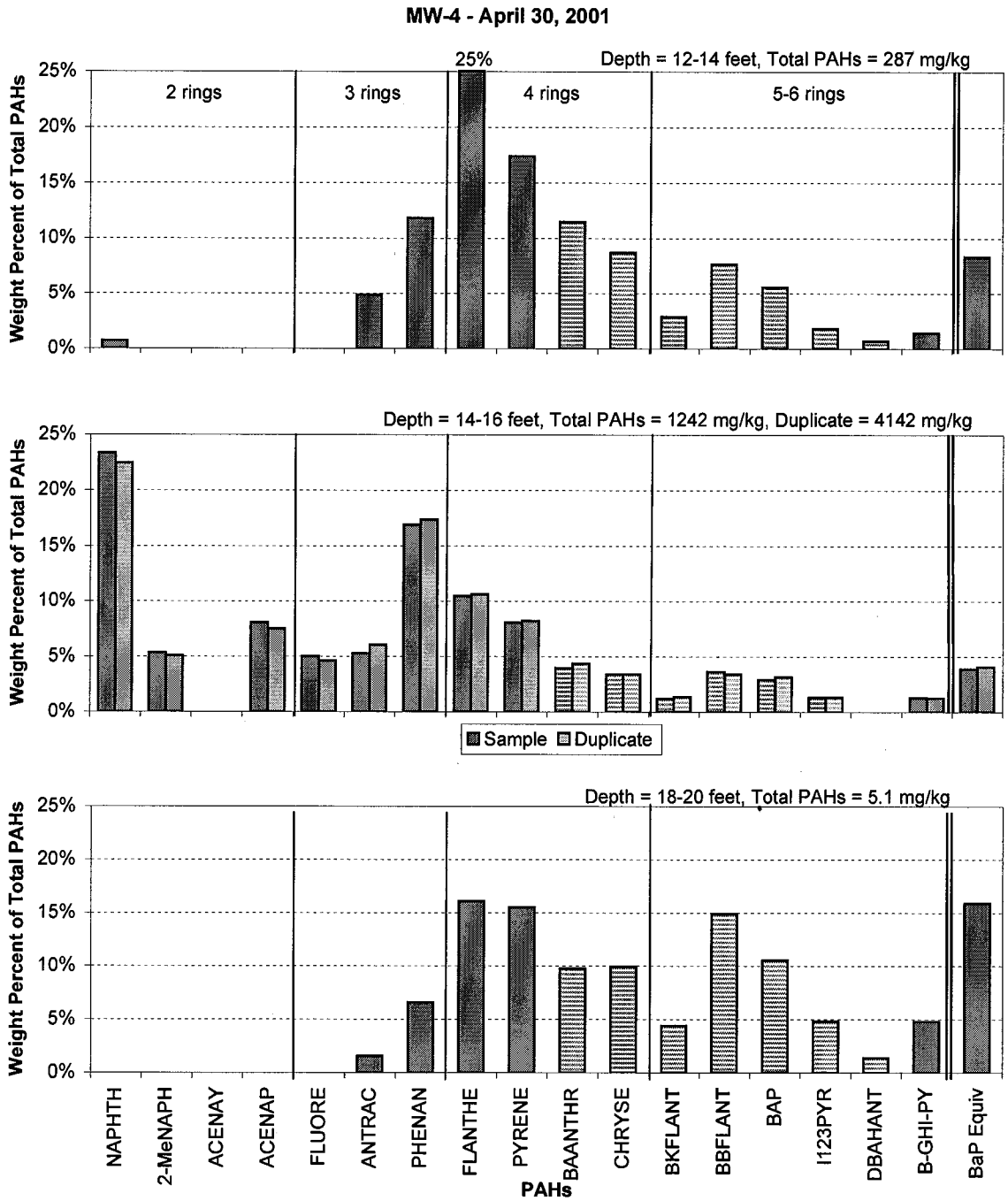
# APPENDIX F

# PAH Composition Evaluation

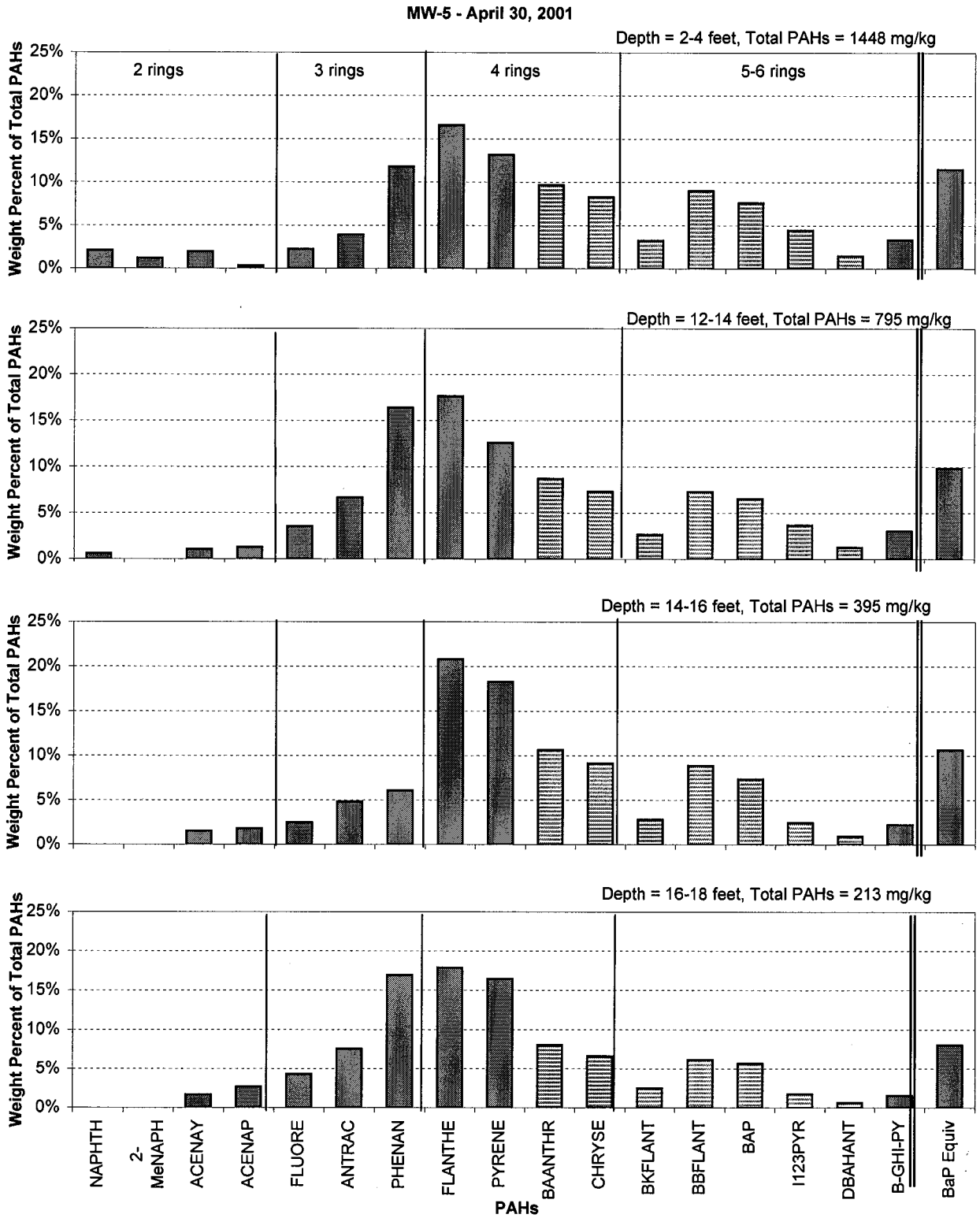
# PAH Composition Evaluation: Composition of materials on Three Star Site

Figure 1.
Weight Percent Distribution of PAHs - MW-4



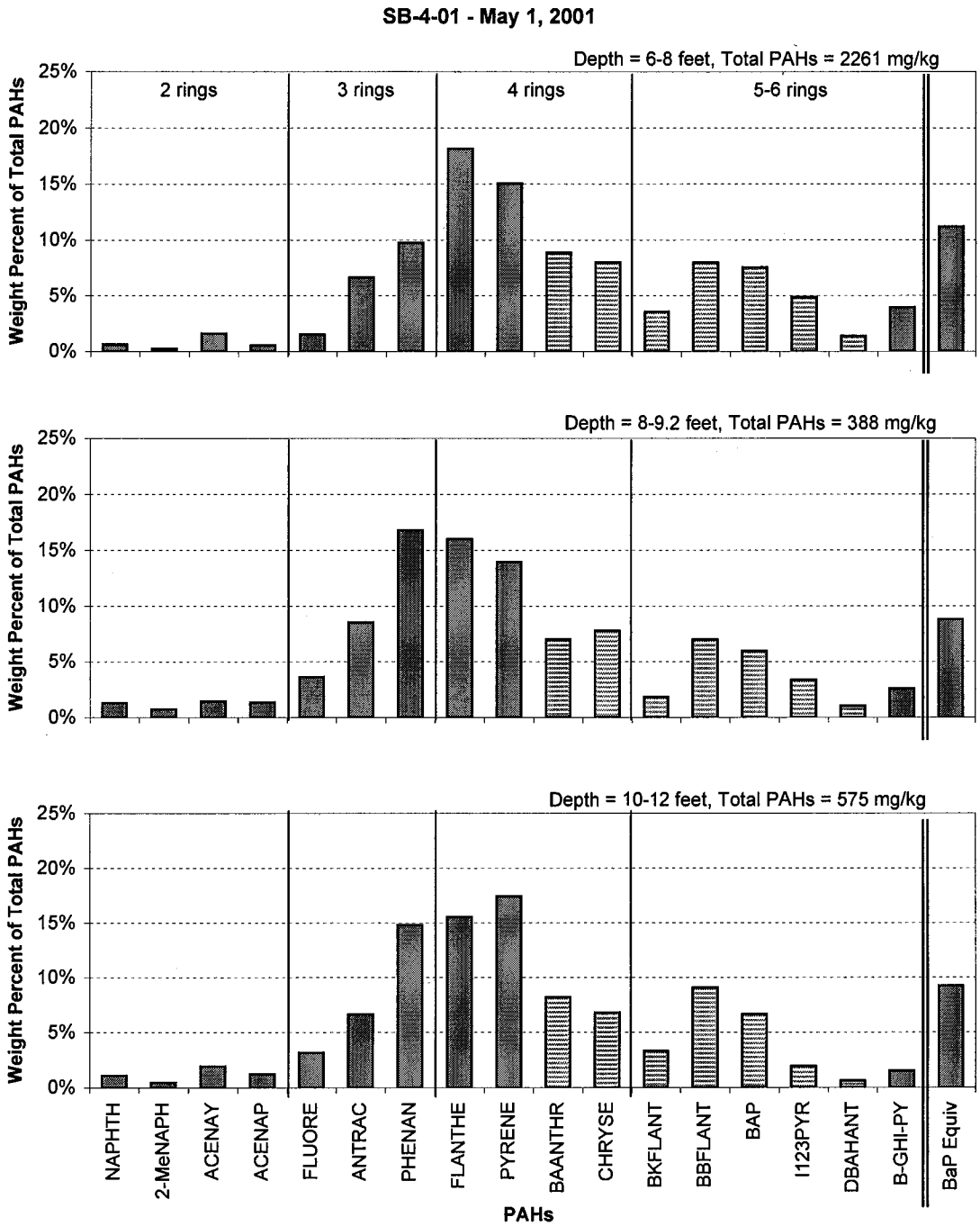

Notes:
Abbreviations are defined in the text accompanying this graphic.
Data bars with horizontal pattern represent carcinogenic PAHs.
Numbers above groups of bars indicate the number of benzene rings in each compound.

Figure 2.
Weight Percent Distribution of PAHs - MW-5



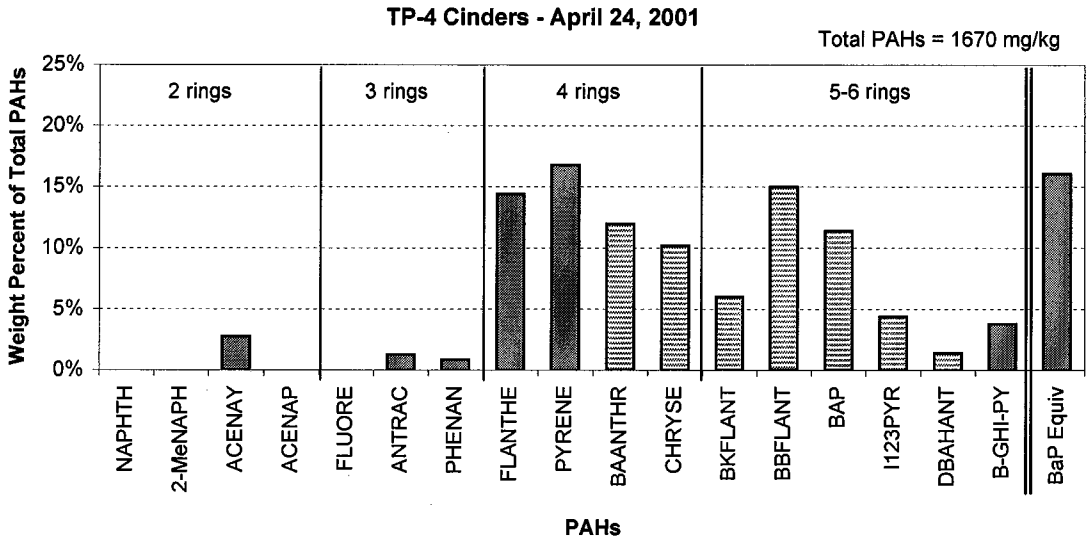

Notes:
Abbreviations are defined in the text accompanying this graphic.
Data bars with horizontal pattern represent carcinogenic PAHs.
Numbers above groups of bars indicate the number of benzene rings in each compound.

Figure 3.
Weight Percent Distribution of PAHs - SB-4-01




Notes:
Abbreviations are defined in the text accompanying this graphic.
Data bars with horizontal pattern represent carcinogenic PAHs.
Numbers above groups of bars indicate the number of benzene rings in each compound.

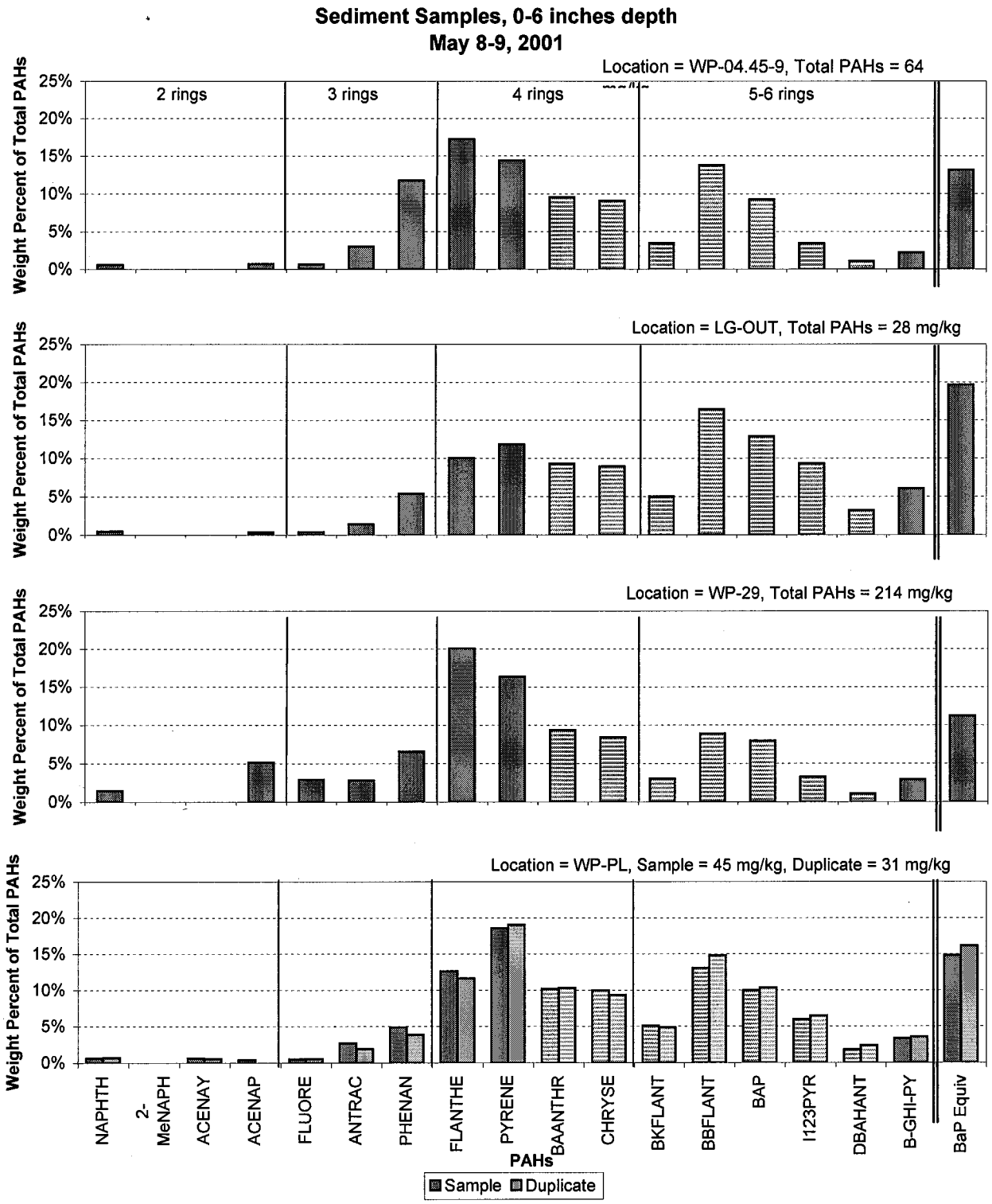
Figure 4.
Weight Percent Distribution of PAHs - TP-4 Cinders




Notes:
Abbreviations are defined in the text accompanying this graphic.
Data bars with horizontal pattern represent carcinogenic PAHs.
Numbers above groups of bars indicate the number of benzene rings in each compound.

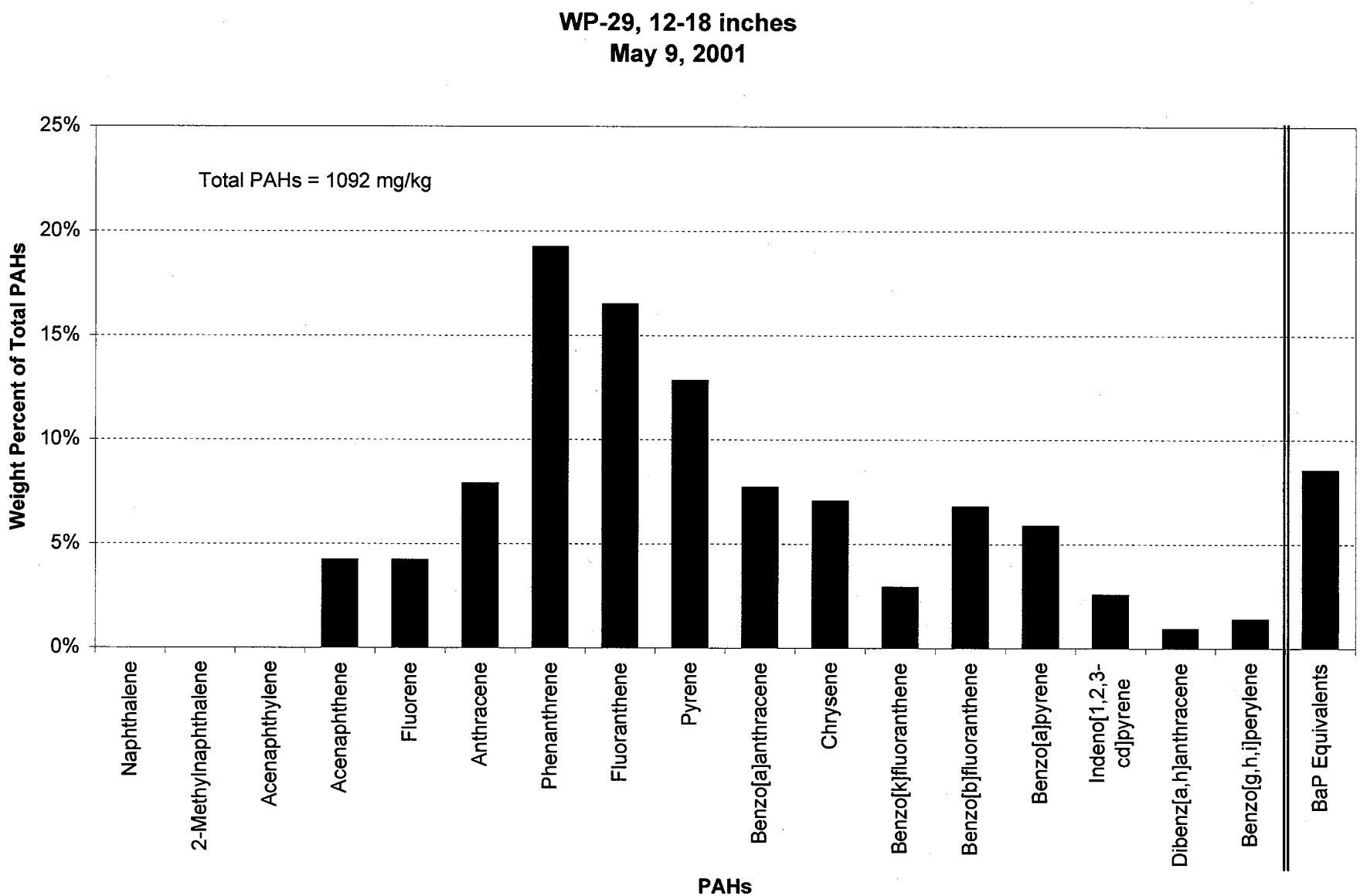
# PAH Composition Evaluation: Surface sediment

Figure 5.
Weight Percent Distribution of PAHs - Sediments




Notes:
Abbreviations are defined in the text accompanying this graphic.
Data bars with horizontal pattern represent carcinogenic PAHs.
Numbers above groups of bars indicate the number of benzene rings in each compound.

# PAH Composition Evaluation: Deeper sediment


WP-29, 12-18 inches
May 9, 2001
Total PAHs = 1092 mg/kg
Weight Percent of Total PAHs
25%
20%
15%
10%
5%
0%
Naphthalene
2-Methylnaphthalene
Acenaphthylene
Acenaphthene
Fluorene
Anthracene
Phenanthrene
Fluoranthene
Pyrene
Benzo[a]anthracene
Chrysene
Benzo[k]fluoranthene
Benzo[b]fluoranthene
Benzo[a]pyrene
Indeno[1,2,3-cd]pyrene
Dibenz[a,h]anthracene
Benzo[g,h,i]perylene
BaP Equivalents
PAHs

# APPENDIX G

# Screening Level Ecological Risk Assessment Report

FINAL REPORT

# Fish and Wildlife Impact Analysis Step IIC - Wappingers Creek Three Star Anodizing Site Wappingers Falls, New York

New York State Department of Environmental Conservation
Albany, New York

October 2007

Job No. 10653/27258

# FINAL REPORT

## Fish and Wildlife Impact Analysis
## Step IIC - Wappingers Creek
## Three Star Anodizing Site
## Wappingers Falls, New York

***New York State Department of Environmental Conservation***
***Albany, New York***

Chief Scientist
O'Brien & Gere Engineers, Inc.

October 2007

O'BRIEN & GERE

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1 Step 1 FWIA

# 1. Introduction

This report presents the results of a Step IIC Fish and Wildlife Impact Analysis (FWIA) completed for Wappingers Creek by O'Brien & Gere Engineers, Inc. (O'Brien & Gere). This FWIA of Wappingers Creek is associated with the Remedial Investigation (RI) of the Three Star Anodizing Site (Three Star Site). This FWIA report is presented as an appendix to the RI report for Wappingers Creek (Creek RI). The results of on-site investigation of the Three Star Site and FWIA are reported in a separate RI report (O'Brien & Gere 2007a).

The FWIA was conducted according to the New York State Department of Environmental Conservation (NYSDEC) protocols, appearing in the document entitled *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites* (NYSDEC 1994; FWIA Guidance). Step I of a FWIA consists of a description of the physical and biological features of a site. Results of the Step I FWIA for Wappingers Creek, completed in 2002, are presented in Attachment 1. The purpose of this Step IIC Report is to evaluate the potential impacts of site-related constituents on fish and wildlife resources in a *Toxic Effects Analysis*. Therefore, the specific objectives of this Step IIC FWIA are to:

- identify potentially complete pathways between site-related constituents and fish and wildlife resources
- compare site chemical data to applicable ecologically-based criteria or screening values
- evaluate potential risk to ecological receptors via screening-level risk calculations.

## 1.1. FWIA Project Background

The RI for the Three Star Site, which included the RI of Wappingers Creek, was completed in two phases. Following the NYSDEC's review and comment on the Draft Phase I RI Report (O'Brien & Gere 2002a), which included the FWIA Step I report, discussions were held between the NYSDEC and O'Brien & Gere concerning the performance of additional steps of the FWIA. Based on these discussions, a streamlined FWIA Step II approach was prepared and presented to the NYSDEC for review in the Phase II RI Work Plan Addendum (O'Brien & Gere 2002b). This report presents the results of the Step II FWIA evaluation of Wappingers Creek, and utilizes surface water and sediment data collected for the RI.

As detailed in the final Phase II RI Work Plan Addendum (O'Brien & Gere 2002b), the FWIA Step II performed for the creek consists of a streamlined screening-level ecological risk assessment (SLERA). The SLERA presents a comparison of site media data to ecologically-based screening values to identify constituents of potential ecological concern (COPEC). Following the screening step, risk calculations are performed to estimate a receptor's exposure to the COPEC. Subsequent sections of this report present additional details concerning the SLERA approach. The same approach was used to complete the SLERA for the Three Star Site (O'Brien & Gere 2007a).

## 1.2. Report Organization

The Step II FWIA/SLERA is organized into the following sections:

1. *Introduction.* This section presents general information about the performance of the FWIA, the objectives of the study and the format of the report.

2. *Study area characterization.* This section presents a summary of the FWIA Step I findings related to fish and wildlife resources of the site and vicinity and describes the site areas within the scope of this study. An exposure pathway assessment is also presented.

3. *Comparison of site data to screening values.* This section presents the results of comparisons of site media data to regulatory and ecologically-based screening criteria and/or benchmark values.

4. *Screening-level risk calculation.* This section presents the methods and results of conservative risk calculations prepared to evaluate potential site risk to upper trophic level receptors potentially utilizing the site.

5. *Conclusions.* This section presents the FWIA Step II conclusions regarding the screening-level risk assessment.

# 2. Study Area Characterization

This section summarizes the physical and biological components of the site and study area under current conditions. A detailed characterization of the physical and biological components of the study area was provided in the Step I FWIA (Attachment 1).

## 2.1. Site Description

The tidal portion of Wappingers Creek (tidal creek) is the subject of this FWIA and comprises the approximately 1.5 mile length between the Site and the Hudson River (Figure 1-1). Upstream of the tidal creek is Wappingers Falls and Wappingers Lake. At the downstream of end of the tidal creek is the confluence with the Hudson River. The Three Star Site is located on an oxbow of the tidal creek and consists of an 8.5 acre industrial facility on the south bank of Wappingers Creek, approximately 1,000 feet downstream of Wappingers Falls. In the vicinity of the Three Star Site, the creek is generally less than 100 feet wide. Downstream of the Three Star Site, the creek widens and typically ranges from 250 to 750 feet wide. A backwater area with a shoal is located along the south shore of the creek, approximately 1,000 feet downstream of the Three Star Site. An embayment that is approximately 300 feet in diameter is located on the north side of the creek, approximately 2,000 feet downstream of the Three Star Site.

The Three Star Site is located on the 100-year flood and primarily consists of two buildings, paved parking areas, and access roadways. Additional buildings that were on the Three Star Site were destroyed by a fire that occurred in May 2004. The Three Star Site was the location of industrial activities for over 150 years. For the RI, it is operationally divided into two areas consisting of the Main Site and the former manufactured gas plant site (MGP site). Primary past uses of the Main Site included dye operations, metal plating and a number of other smaller industrial activities. The MGP site is located along the west portion of the Three Star Site. In general, most of the on-site areas do not support large or diverse wildlife communities, due to the amount of development and/or their proximity to anthropogenic disturbances.

A former raceway currently contains a pipe used to convey stormwater runoff from the Village of Wappingers Falls to an on-site lagoon that discharges to Wappingers Creek. The lagoon bisects the site with the Main Site located west of it and the MGP site located to the east. As described in the RI Report, the lagoon is reportedly unlined and covers approximately 0.5 acres. During operation of dye manufacturing facility and Three Star Anodizing Company, the lagoon/raceway reportedly received industrial wastes. Wastes from other industrial operations that have taken place at the Three Star Site may have also drained in the direction of the lagoon and the creek.

## 2.2. Study Area Description

Consistent with the FWIA Guidance, the study area evaluated for the Creek FWIA included in the description of cover types is defined as the Three Star Site property and the area within a half-mile radius of the Three Star Site. In addition to the half-mile radius around the Three Star Site that was evaluated for cover type descriptions, the Creek RI included sampling of representative locations throughout the 1.5 mile length of the tidal creek.

Natural and cultural covertypes exist within the study area. The cultural designation reflects the extent of human disturbance to the study area for land uses such as roadways, railroad beds, commercial businesses, industrial facilities, residences, and parks. In general, these areas do not support large or diverse wildlife communities due to their proximity to anthropogenic disturbances. The natural terrestrial covertypes of the study area, existing primarily west of the Three Star Site, are representative of forested communities. The tidal creek represents a deepwater estuarine habitat that bisects a major portion of the study area as it flows from northeast to southwest.

Other water bodies located in the vicinity of the Three Star Site provide additional open water aquatic habitat. Wappingers Lake is located approximately 1,500 feet upstream of the Three Star Site. For the Creek RI, surface water and sediment samples were collected from the lake to represent background conditions for the creek. In addition, there is a stream located in Reese Park located approximately 2000 feet southwest of the Three Star Site, and numerous wetland habitats exist at multiple locations within in the study area.

## 2.3. Exposure Pathway Summary

This exposure pathway summary was completed according to FWIA Guidance for Step IIA, Exposure Pathway Analysis (NYSDEC 1994). This subsection discusses potential routes of exposure to site-related contaminants for wildlife receptors along the creek. Exposure is the contact of a receptor (*e.g.*, flora and fauna inhabiting or utilizing the site) with a chemical or physical agent. An exposure pathway is a mechanism by which a receptor may be exposed to a chemical or physical agent at, or originating from, a source. The three primary potential routes of exposure are inhalation, ingestion, and dermal contact.

Exposure pathways may be classified as either *complete* or *incomplete*. An exposure pathway is *complete* when receptors exist that could contact a physical or chemical agent under specified conditions. An *incomplete* pathway exists if there are no receptors or no exposures that could occur under the specified conditions. For *complete* exposure pathways, further evaluation is required.

Sampling and analyses completed for the Creek RI identified chemical constituents in surface water and sediment. Therefore, complete exposure pathways potentially exist for terrestrial and aquatic receptors inhabiting and/or utilizing these media from the creek. Potentially complete exposures exist via direct contact and via the food chain for wildlife foraging from the sample areas, potentially exposed ecological receptors include, but are not limited to benthic invertebrates, fish, predatory birds, small mammals, songbirds, reptiles and amphibians. The conclusion section of this study presents the potential significance of the FWIA screening in terms of ecological risk.

# 3. Comparison of Site Data to Screening Values

This section presents the comparison of site chemical data to regulatory and ecologically-based criteria and/or screening values corresponding to Step IIB (Criteria Specific Analysis) of the FWIA Guidance (NYSDEC 1994). Both the methods used for the comparison and the results of the comparison are presented. Constituents that were detected at concentrations above the applicable screening values are identified as COPEC and are evaluated further via a screening-level risk calculation (Section 4). Although background media data were collected for the Creek RI, comparisons of tidal creek data to the background data were not performed as part of the COPEC selection process. Presented in the following subsections are descriptions of the creek data (surface water and sediment), sources of screening values, and the COPEC selection process.

## 3.1. Creek Data

Data utilized for the FWIA comparisons consist of surface water and sediment samples collected by O'Brien & Gere during field efforts related to the RI, as summarized in Section 2 of the Creek RI Report (O'Brien & Gere 2007b). The concentrations of VOCs, SVOCs, and inorganic constituents that were detected in sediment samples collected from the creek are presented in Tables 3-1, 3-2, and 3-3, respectively. For the purposes of this study, sediment samples that included the zero- to six-inch depth interval were evaluated in the screening process as the sedimentary zone of highest ecological importance. The concentrations of VOCs and SVOCs, and inorganic constituents detected in the surface water of the creek are present in Tables 3-4 and 3-5, respectively.

## 3.2. Screening Methods and Values

In accordance with Step IIB of the FWIA Guidance, the identification of COPEC for the site is based on comparisons of maximum detected concentrations to conservative ecologically-based screening criteria. Presented in the following subsections is a discussion of the media-specific screening values utilized in the COPEC identification process. Table 3-6 presents a summary of the sources of the screening values referenced in this report.

### 3.2.1. Surface Water Screening Comparison

The maximum concentrations of constituents detected in the surface water of Wappingers Creek were compared to the screening values presented in the *Technical and Operational Guidance Series Number 1.1.1. New York State Ambient Water Quality Standards and Guidance Values* (NYSDEC 1998) and the *National Recommended Ambient Water Quality* (USEPA 2002). The screening values presented in these references are described in Table 3-6. If a detected constituent concentration exceeded either the NYSDEC or the USEPA screening value, then it was selected as a COPEC. Additionally, detected constituents without available screening values were also selected as COPEC.

### 3.2.2. Sediment Screening Comparison

As described in the Creek RI report, the maximum concentrations of constituents detected in sediment samples collected from the bed of Wappingers Creek were compared to the screening values presented in *Technical Guidance for Screening Contaminated Sediments* (NYSDEC 1999). The screening values presented in the NYSDEC sediment document are included in Table 3-6.

As a conservative measure, the NYSDEC lowest effect level (LEL) was selected as the screening value for this study. For constituents without NYSDEC screening values, alternative screening values were researched and summarized from the available literature. The primary source of alternative sediment screening values is the USEPA Assessment and Remediation of Contaminated Sediment Program (ARCS) database accessed from the Oak Ridge National Laboratory web site (ORNL 2002). For constituents without NYSDEC guidance values, the *No Effects* concentration presented in the ARCS database was selected as the alternative screening value for this study, as a conservative measure.

If a concentration of detected constituent exceeded the NYSDEC or the alternative ecological screening value, then the constituent was selected as a COPEC. Additionally, detected constituents without NYSDEC or alternative ecological screening values were selected as COPEC.

## 3.3. COPEC Summary

The objective of COPEC identification process is to identify the specific constituents in the environmental media that are present at concentrations that exceed conservative screening values and, therefore, may require further evaluation as part of additional FWIA tasks. As described above, the identification of COPEC for the site was based on comparisons of maximum concentrations of constituents detected in a given media to NYSDEC or ecologically-based screening values. If the maximum concentration of a constituent in a given medium exceeded the lowest screening value, the constituent was identified as a COPEC. In addition, consistent with the FWIA Guidance, constituents for which screening values do not exist were included as COPEC. It should be recognized that evaluation of site data for exceedance of the screening values is the first step in the screening process. Exceedence of screening values does not, in itself, indicate a risk to wildlife, but suggests that further evaluation of potential exposures to those constituents may be necessary.

The results of the screening process completed in the Creek RI identified the COPEC for surface water and sediment through bracketing of the constituent concentrations presented in data summary tables (Tables 3-1 through 3-5). For sediment, organic constituents consisting of polycyclic aromatic hydrocarbons (PAHs) and dibenzofuran, and 11 inorganic constituents were identified as COPEC (Tables 3-1 through 3-3). For surface water, background levels of aluminum, iron, and silver detected during storm event sampling were identified as COPEC (Table 3-5). As presented in Section 3.2 previously, the maximum detected COPEC concentrations were selected for the FWIA risk evaluation process that is discussed in Section 4.

# 4. Screening Level Risk Calculations

The identification of COPEC for the creek, as presented in Section 3, included the comparison of constituent concentrations detected in creek media to applicable ecological screening values. Exceedence of a screening value indicates that a constituent requires further consideration of potential impacts to ecological receptors from direct contact exposures. In addition to direct contact exposures, exposures to site-related constituents by upper trophic level receptors may occur via ingestion of COPEC in forage. Therefore, constituents exceeding direct contact screening values were also evaluated for their potential to bioaccumulate and cause ecological effects to higher trophic level receptors.

Food chain models provide a simplified approach for assessing the transfer of COPEC from a source to receptors representing different trophic levels. The body burden of chemical via feeding and direct contact is estimated as the total daily intake (TDI, mg/kg/day). In food chain modeling, TDI of COPEC by the selected receptors is estimated based on site specific data and receptor specific information (such as feeding habits, habitat utilization, life history information). The site specific data typically consist of constituent concentrations present in media such as soil or sediment, water, or food base (forage) to which the selected receptors may be exposed. For this study, maximum concentrations of sediment and surface water data from the creek were used in the model. To estimate the levels present in forage, conservative, literature-derived, biota-sediment accumulation factors (BSAFs), bioaccumulation factors (BAFs), or bio-concentration factors were applied.

The output of the food chain model is a hazard quotient (HQ). To derive a HQ, the receptor's TDI is compared to conservative toxicity reference values (TRVs, mg/kg/day). The HQ is a unitless ratio of a receptor's TDI to the TRV. A HQ less than one indicates that adverse effects are not likely to the receptor. A HQ of one or greater does not necessarily indicate ecological impact, but suggests that the exposure pathway requires further evaluation. The derivations of the TDIs and TRVs used in the food chain model are presented below:

- TDI is the sum of potential exposures via ingestion from surface water, sediment, and forage. For the receptors selected for this study (mink and great blue heron), forage considered in the model included exclusively trophic level 4 fish.

- The TRVs used in the food chain model are conservative literature-derived toxicologic effect concentrations referred to as no observed adverse effect levels (NOAELs). The NOAELs are chemical and organism specific and typically based on laboratory toxicity studies. For the food chain model presented in this FWIA, literature research conducted by Oak Ridge National Laboratory, and summarized by Sample *et al.* (1996), was the primary reference for the NOAELs selected as TRVs. Sample *et al.* (1996) presents data related to the toxicity of chemicals to wildlife, including the extrapolation of laboratory-derived values for a specific species to a variety of other wildlife species. The TRV extrapolations presented in Sample *et al.* (1996) were based on ratios of body size, water ingestion, and food consumption.

In performing the food chain calculations, the maximum constituent concentration detected in sediment and surface water was applied to model potential exposures. The media concentrations were multiplied by biota uptake factors to estimate constituent specific concentrations in the forage. The biota uptake factors were compiled from literature sources or available databases. Conservative

life history parameters (*e.g.* highest ingestion rates, lowest body weights), as presented in Wildlife Exposure Factors Handbook (USEPA 1993) were also utilized in the screening risk calculation.

For this report, a food chain model was developed for an aquatic ecosystem in two steps. First, the constituent concentrations in the forage were estimated for benthic invertebrates and piscivorous fish. Then, the forage estimates were incorporated into food chain models for the selected upper trophic level ecological receptors, as described below.

## 4.1. Selected Ecological Receptors

Ecological receptors evaluated for the FWIA of the creek consisted of the mink and the great blue heron as described in the following subsections.

### 4.1.1. Mink

The mink *(Mustela vison)* is a small nocturnal mammal that lives along rivers, creeks, lakes, ponds and marshes. The mink may use old muskrat burrows, abandoned beaver dens or hollow logs for dens. Mink may also dig out its own den along stream banks (Whitaker 1980). Mink hunt in and along the water and kill their prey by biting the neck (Whitaker 1980). The preferred food of mink is muskrats, but they also eat fish, frogs, young snapping turtles, snakes, small mammals, and marsh-dwelling birds. Mink may eat their prey on the spot or cache excess prey in their den (Whitaker 1980). The home range of the mink has been estimated to range between eight to 20 hectares in Montana rivers and from one to five kilometers along streams in Sweden (USEPA 1993).

Although no mink or indicators of their presence were observed during the wildlife survey of the study area, mink likely utilize the aquatic habitats in the vicinity of the creek. Selection of mink as a representative mammal provides a conservative evaluation for mammalian exposures to site COPECs. The mink is thought to be one of the most sensitive mammals to certain COPEC exposures. The mink was selected for the FWIA to evaluate food chain exposures to predacious mammals potentially utilizing the site.

### 4.1.2. Great Blue Heron

Great blue heron *(Ardea herodias)* are the most widespread of all the North American herons. They live in both salt water and fresh water and tend to frequent shallow waters of lakeshores, ponds, bays, oceans, marshes, tidal flats, sandbars, and streams (Terres 1980). Great blue heron perch and nest in trees, but spend the majority of time ashore or in shallow water. The great blue heron lives separate from other herons, except for when it nests communally in rookeries during breeding.

Great blue heron have been observed foraging up to 24 kilometers from their nest site (USEPA 1993). Herons prefer to fish just before dawn and dusk. This is accomplished by standing in shallow water or a perch and waiting for prey to come within striking distance or dropping into deep water to strike at schools of fish (Terres 1980). Small fish are swallowed whole and large fish are speared and swallowed.

Herons may also hunt in meadows and fields. Besides fish, the great blue heron will eat frogs, salamanders, snakes, shrimp, crabs, crayfish, grasshoppers, dragonflies, aquatic insects, small mammals, and the occasional rail and phalarope (Terres 1980).

## 4.2. Hazard Quotient Summary

Hazard quotient estimates calculated from the food chain model for Wappingers Creek are presented in Table 4-1. The table below summarizes the HQ ranges estimated for COPEC of the mink and great blue heron.

*HQ ranges estimated for COPEC of the mink and great blue heron.*

| HQ | Mink | Great Blue Heron |
|---|---|---|
| 1 to 10 | chromium<br>thallium<br>zinc<br>2,4-dimethylphenol<br>fluorene | cadmium<br>chromium<br>cyanide<br>zinc<br>2,4-dimethylphenol<br>phenol |
| 10 to 100 | aluminum<br>antimony<br>arsenic<br>cadmium<br>selenium<br>phenol<br>pyrene | mercury |
| Greater than 100 | mercury<br>benzo(a)pyrene<br>benzo(b)fluoranthene<br>chrysene<br>Indeno(1,2,3-c,d)pyrene | antimony<br>benzo(b)fluoranthene<br>chrysene<br>pyrene |

Source: O'Brien & Gere Engineers, Inc.

The HQ values, estimated using conservative exposure estimates, and toxicity values provide a mechanism to assess if additional evaluation is necessary to estimate actual adverse impacts to exposed receptors. The interpretation of HQ results was presented previously in this Section. In most cases, there is insufficient dose-response data to directly compare HQs associated with different constituents. Therefore, it is not reasonable to infer that the constituent with an HQ of 100 is associated with ten times more risk than the HQ of ten. The numerical designation is a convention designed to facilitate evaluation of potential effect. In fact, the relative risk is not known and can not be directly correlated with the magnitude of the HQ.

Based on the screening-level HQ estimates, the COPEC identified above may require further evaluation as part of additional FWIA tasks, due to their potential for food chain exposures to the identified receptors. The other constituents identified on Table 4-1 resulted in HQs less than one. As shown on that table, TRVs were unavailable in the reviewed literature for cobalt, iron, magnesium, sodium, dibenzo (a,h)anthracene and carbazole. Therefore, HQs could not be calculated for those constituents.

# 5. Summary and Conclusions

This FWIA evaluated the physical and biological characteristics, potential ecological exposure pathways, and potential risks to selected receptors of Wappingers Creek. Results of Step I of the FWIA are presented elsewhere in this appendix. This report presents the methods and findings of the Step II FWIA through Step IIC, the *Toxic Effects Analysis*. This report was prepared as a streamlined screening level assessment incorporating maximum concentrations of constituents detected in surface water and sediment to conservatively estimate potential exposure of selected receptors.

A summary of the results of this analysis along with the conclusions of this assessment as they pertain to Wappingers Creek are presented below:

- Wappingers Creek provides aquatic/wetland habitats.
- Maximum concentrations of chemical constituents in creek media (surface water and sediment) were detected above conservative, ecologically-based screening values.
- Benthic macroinvertebrates and water column organisms may be exposed to COPEC where maximum concentrations of constituents occur in sediment.
- Higher trophic level organisms may also be exposed to COPEC by indirect accumulation of constituents via the food chain.
- The exposure concentrations for sediment were generally much higher than those for surface water indicating that sediment concentrations were primarily responsible for elevated HQs that were observed.
- Sediment COPEC resulting in HQ's greater than one consisted of SVOCs and inorganic constituents. Specifically, the SVOCs consisted of 2-dimethylphenol, phenol, and PAHs; the inorganic constituents primarily consisted of antimony, cadmium, chromium, mercury, and zinc. Additional inorganic constituents were also identified as COPEC for the individual species (mink or great blue heron).
- For both the mink and great blue heron, the maximum HQs were associated with potential exposure to PAHs.
- Inorganic COPEC that resulted in the highest calculated HQs values were mercury (mink) and antimony (great blue heron).

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# Table 3-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID | NYS Sediment Values | WP-LK01-A | | WP-LK01-A | | WP-LK01-A | | WP-LK01-B | | WP-LK01-B | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Date | | 05/10/2001 0 - 6 in. | | 05/10/2001 6 - 12 in. | | 05/10/2001 19 - 25 in. | | 05/10/2001 0 - 6 in. | | 05/10/2001 6 - 12 in. | |
| Compound | ug/g OC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 2-Butanone (MEK) | NS | 0.02 J | 0.2 | 0.02 J | 0.3 | 0.03 J | 0.8 | 0.01 J | 0.2 | 0.03 J | 0.5 |
| Acetone | 0.03 (W) | --- | --- | --- | --- | 0.07 J | [2] | --- | --- | --- | --- |
| Carbon disulfide | NS | 0.005 J | 0.05 | --- | --- | --- | --- | --- | --- | 0.009 J | 0.1 |
| Chloromethane | NS | --- | --- | --- | --- | --- | --- | --- | --- | 0.01 J | 0.2 |
| Methylene chloride | 0.09 (W) | --- | --- | --- | --- | 0.01 J | [0.3] | --- | --- | --- | --- |
| Tetrachloroethene | 0.8 (H) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | 49 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | 2.0 (H) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene (total) | 92 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | 0.6 (W) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | 0.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | |
| Total BTEX | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total Chlorinated VOCs | NS | --- | --- | --- | --- | 0.01 | 0.3 | --- | --- | --- | --- |
| Total VOCs | NS | 0.02 | 0.2 | 0.02 | 0.4 | 0.1 | 3 | 0.01 | 0.1 | 0.05 | 0.8 |
| Total organic carbon (mg/Kg) | NA | 99100 | --- | 47000 | --- | 33800 | --- | 66800 | --- | 62000 | --- |
| % TOC | NA | 10 | --- | 4.7 | --- | 3.4 | --- | 6.7 | --- | 6.2 | --- |
| Percent solids (%) | NA | 22 | --- | 35 | --- | 46 | --- | 25 | --- | 32 | --- |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, — - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999). Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 3-1

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | WP-LK01-B DUP 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC | WP-LK01-B 05/10/2001 25 - 31 in. C mg/Kg | SC ug/gOC | WP-LK01-C 05/10/2001 0 - 6 in. C mg/Kg | SC ug/gOC | WP-LK01-C 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC | WP-LK01-C 05/10/2001 26 - 32 in. C mg/Kg | SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Butanone (MEK) | NS | 0.04 J | 0.7 | 0.02 J | 0.3 | 0.02 J | 0.3 | 0.04 J | 0.6 | 0.03 J | 0.6 |
| Acetone | 0.03 (W) | --- | --- | --- | --- | --- | --- | 0.1 J | [2] | 0.1 J | [2] |
| Carbon disulfide | NS | 0.006 J | 0.1 | 0.004 J | 0.07 | --- | --- | --- | --- | --- | --- |
| Chloromethane | NS | --- | --- | 0.002 J | 0.04 | 0.004 J | 0.07 | --- | --- | --- | --- |
| Methylene chloride | 0.09 (W) | 0.006 J | [0.1] | --- | --- | --- | --- | 0.003 J | 0.05 | --- | --- |
| Tetrachloroethene | 0.8 (H) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | 49 | --- | --- | --- | --- | 0.004 J | 0.07 | --- | --- | --- | --- |
| Trichloroethene | 2.0 (H) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene (total) | 92 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | 0.6 (W) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | 0.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | |
| Total BTEX | NS | --- | --- | --- | --- | 0.004 | 0.07 | --- | --- | --- | --- |
| Total Chlorinated VOCs | NS | 0.006 | 0.1 | --- | --- | --- | --- | 0.003 | 0.05 | --- | --- |
| Total VOCs | NS | 0.05 | 0.9 | 0.02 | 0.4 | 0.02 | 0.3 | 0.1 | 2 | 0.1 | 3 |
| Total organic carbon (mg/Kg) | NA | 55200 | --- | 54700 | --- | 58700 | --- | 55500 | --- | 38800 | --- |
| % TOC | NA | 5.5 | --- | 5.5 | --- | 5.9 | --- | 5.6 | --- | 3.9 | --- |
| Percent solids (%) | NA | 34 | --- | 48 | --- | 29 | --- | 36 | --- | 50 | --- |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999). Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 3-1
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | LG-OUT 05/09/2001 0 - 6 in. C mg/Kg | LG-OUT SC ug/gOC | WP-LGOUT2 05/13/2003 0 - 6 in. C mg/Kg | WP-LGOUT2 SC ug/gOC | WP-16 05/09/2001 0 - 6 in. C mg/Kg | WP-16 SC ug/gOC | WP-18 05/09/2001 0 - 6 in. C mg/Kg | WP-18 SC ug/gOC | WP-18 05/09/2001 6 - 12 in. C mg/Kg | WP-18 SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Butanone (MEK) | NS | --- | --- | --- | --- | --- | --- | 0.008 J | 0.3 | 0.007 J | 0.3 |
| Acetone | 0.03 (W) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon disulfide | NS | --- | --- | --- | --- | --- | --- | 0.005 J | 0.2 | 0.002 J | 0.08 |
| Chloromethane | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene chloride | 0.09 (W) | --- | --- | --- | --- | 0.002 J | [0.2] | 0.004 J | [0.2] | --- | --- |
| Tetrachloroethene | 0.8 (H) | 0.02 | 0.4 | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | 49 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | 2.0 (H) | 0.02 | 0.4 | 0.001 J | 0.08 | --- | --- | --- | --- | --- | --- |
| Xylene (total) | 92 | 0.002 J | 0.04 | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | 0.6 (W) | 0.003 J | 0.05 | 0.002 J | 0.2 | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | 0.6 | 0.002 J | 0.04 | 0.001 J | 0.08 | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | |
| Total BTEX | NS | 0.002 | 0.04 | --- | --- | --- | --- | --- | --- | --- | --- |
| Total Chlorinated VOCs | NS | 0.05 | 0.9 | 0.004 | 0.3 | 0.002 | 0.2 | 0.004 | 0.2 | --- | --- |
| Total VOCs | NS | 0.05 | 0.9 | 0.004 | 0.3 | 0.002 | 0.2 | 0.02 | 0.9 | 0.009 | 0.4 |
| Total organic carbon (mg/Kg) | NA | 56000 | --- | 12400 J | --- | 8770 | --- | 23400 | --- | 24400 | --- |
| % TOC | NA | 5.6 | --- | 1.2 J | --- | 0.9 | --- | 2.3 | --- | 2.4 | --- |
| Percent solids (%) | NA | 77 | --- | 75 | --- | 79 | --- | 68 | --- | 64 | --- |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, — - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999). Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 3-1

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID | NYS Sediment Values | WP-29 | | WP-29 | | WP-29 | | WP-PL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Date | | 05/09/2001 0 - 6 in. | | 05/09/2001 6 - 12 in. | | 05/09/2001 12 - 18 in. | | 05/08/2001 6 - 11 in. | | | |
| Compound | ug/g OC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 2-Butanone (MEK) | NS | 0.008 J | 0.4 | 0.03 J | 5 | 0.08 J | 0.7 | 0.03 J | 0.3 | | |
| Acetone | 0.03 (W) | --- | --- | 0.09 J | [12] | --- | --- | 0.06 J | [0.7] | | |
| Carbon disulfide | NS | --- | --- | 0.003 J | 0.4 | 0.01 J | 0.1 | --- | --- | | |
| Chloromethane | NS | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Methylene chloride | 0.09 (W) | --- | --- | 0.02 | [2] | --- | --- | --- | --- | | |
| Tetrachloroethene | 0.8 (H) | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Toluene | 49 | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Trichloroethene | 2.0 (H) | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Xylene (total) | 92 | --- | --- | --- | --- | --- | --- | --- | --- | | |
| cis-1,2-Dichloroethene | 0.6 (W) | --- | --- | --- | --- | --- | --- | --- | --- | | |
| trans-1,2-Dichloroethene | 0.6 | --- | --- | --- | --- | --- | --- | --- | --- | | |
| | | | | | | | | | | | |
| Total BTEX | NS | --- | --- | --- | --- | --- | --- | --- | --- | | |
| Total Chlorinated VOCs | NS | --- | --- | 0.02 | 3 | --- | --- | --- | --- | | |
| Total VOCs | NS | 0.008 | 0.4 | 0.1 | 14 | 0.09 | 0.9 | 0.09 | 1 | | |
| Total organic carbon (mg/Kg) | NA | 21700 | --- | 7330 | --- | 105000 | --- | --- | --- | | |
| % TOC | NA | 2.2 | --- | 0.7 | --- | 11 | --- | --- | --- | | |
| Percent solids (%) | NA | 56 | --- | 62 | --- | 58 | --- | --- | --- | | |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location.
When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999).
Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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File Number: 10653.27258

# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-LK1 05/12/2003 0 - 6 in. C mg/Kg | WP-LK1 SC ug/gOC | WP-LK2 05/12/2003 0 - 6 in. C mg/Kg | WP-LK2 SC ug/gOC | WP-LK3 05/12/2003 0 - 6 in. C mg/Kg | WP-LK3 SC ug/gOC | WP-LK4 05/12/2003 0 - 6 in. C mg/Kg | WP-LK4 SC ug/gOC | WP-LK5 05/12/2003 0 - 6 in. C mg/Kg | WP-LK5 SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | 12 | --- | --- | --- | --- | --- | 0.3 J | 4 | 0.2 J | 5 | 0.3 J | 7 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.2 J | [2] | --- | --- | 0.3 J | [4] | 0.2 J | [5] | 0.4 J | [8] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.4 J | [4] | 0.4 J | [4] | 0.5 J | [9] | 0.4 J | [9] | 0.6 J | [13] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | --- | --- | --- | --- | 0.2 J | 4 | 0.2 J | 5 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 J | [5] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.3 J | [3] | 0.3 J | [3] | 0.4 J | [6] | 0.3 J | [7] | 0.4 J | [10] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 0.4 J | 4 | 0.5 J | 5 | 0.6 J | 9 | 0.5 J | 11 | 0.7 J | 14 |
| Fluorene | 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | --- | --- | --- | --- | 0.2 J | [4] | 0.2 J | [5] |
| Naphthalene | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | --- | --- | --- | --- | --- | --- | 0.2 J | 4 | 0.2 J | 5 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 0.4 J | 4 | 0.5 J | 5 | 0.6 J | 10 | 0.5 J | 11 | 0.8 J | 17 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 102000 J | --- | 91600 J | --- | 63300 J | --- | 42100 J | --- | 46100 J | --- |
| % TOC | NA | --- | 10 J | --- | 9.2 J | --- | 6.3 J | --- | 4.2 J | --- | 4.6 J | --- |
| Percent solids (%) | NA | --- | 18 | --- | 12 | --- | 14 | --- | 25 | --- | 36 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 1.7 | --- | 1.7 | --- | 2.6 | --- | 2.5 | --- | [4.1] | --- |
| Total Carcinogenic PAHs | NS | NS | 0.9 | --- | 0.7 | --- | 1.5 | --- | 1.2 | --- | 2.2 | --- |
| Total SVOCs | NS | --- | 1.7 | --- | 1.7 | --- | 2.6 | --- | 2.5 | --- | 4.1 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.3 | [3] | 0.04 | 0.4 | 0.4 | [6] | 0.3 | [7] | 0.5 | [11] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.)



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-LK01-A 05/10/2001 0 - 6 in. C mg/Kg | WP-LK01-A 05/10/2001 0 - 6 in. SC ug/gOC | WP-LK01-A 05/10/2001 6 - 12 in. C mg/Kg | WP-LK01-A 05/10/2001 6 - 12 in. SC ug/gOC | WP-LK01-A 05/10/2001 19 - 25 in. C mg/Kg | WP-LK01-A 05/10/2001 19 - 25 in. SC ug/gOC | WP-LK01-B 05/10/2001 0 - 6 in. C mg/Kg | WP-LK01-B 05/10/2001 0 - 6 in. SC ug/gOC | WP-LK01-B 05/10/2001 6 - 12 in. C mg/Kg | WP-LK01-B 05/10/2001 6 - 12 in. SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | 12 | --- | 0.4 J | 4 | 0.2 J | 4 | 0.1 J | 4 | 0.4 J | 6 | 0.3 J | 4 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {0.5 J} | [5] | 0.2 J | [4] | 0.1 J | [3] | {0.5 J} | [7] | 0.3 J | [4] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 1.0 J | [10] | 0.4 J | [9] | 0.2 J | [6] | 0.8 J | [12] | 0.5 J | [9] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | --- | --- | --- | --- | 0.2 J | 2 | --- | --- |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.3 J | [3] | --- | --- | 0.08 J | [2] | 0.3 J | [5] | 0.2 J | [3] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.6 J | [6] | 0.3 J | [6] | 0.2 J | [5] | 0.6 J | [9] | 0.3 J | [5] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 1.0 J | 10 | 0.4 J | 9 | 0.2 J | 7 | 0.9 J | 13 | 0.5 J | 9 |
| Fluorene | 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | --- | --- | --- | --- | 0.3 J | [4] | --- | --- |
| Naphthalene | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 0.4 J | 4 | 0.2 J | 5 | 0.1 J | 4 | 0.5 J | 7 | 0.3 J | 4 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 1.3 J | 13 | 0.6 J | 13 | 0.3 J | 10 | 1.2 J | 18 | 0.8 J | 13 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 1.1 J | 11 | 0.5 J | 11 | 0.3 J | 9 | 0.6 J | 8 | 0.4 J | 6 |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 99100 | --- | 47000 | --- | 33800 | --- | 66800 | --- | 62000 | --- |
| % TOC | NA | --- | 10 | --- | 4.7 | --- | 3.4 | --- | 6.7 | --- | 6.2 | --- |
| Percent solids (%) | NA | --- | 22 | --- | 35 | --- | 46 | --- | 25 | --- | 32 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [5.4 ] | --- | 2.4 | --- | 1.4 | --- | [5.5 ] | --- | 3.2 | --- |
| Total Carcinogenic PAHs | NS | NS | 2.7 | --- | 1.1 | --- | 0.7 | --- | 2.8 | --- | 1.6 | --- |
| Total SVOCs | NS | --- | 6.5 | --- | 2.9 | --- | 1.7 | --- | 6.1 | --- | 3.6 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.6 | [6] | 0.3 | [6] | 0.1 | [3] | 0.6 | [9] | 0.4 | [6] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc).



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-LK01-B DUP 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC | WP-LK01-B 05/10/2001 25 - 31 in. C mg/Kg | SC ug/gOC | WP-LK01-C 05/10/2001 0 - 6 in. C mg/Kg | SC ug/gOC | WP-LK01-C 05/10/2001 6 - 12 in. C mg/Kg | SC ug/gOC | WP-LK01-C 05/10/2001 26 - 32 in. C mg/Kg | SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | 12 | --- | 0.3 J | 5 | 0.09 J | 2 | 0.4 J | 7 | 0.2 J | 4 | 0.1 J | 3 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.3 J | [5] | 0.09 J | [2] | 0.4 J | [7] | 0.2 J | [4] | 0.2 J | [5] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.5 J | [9] | 0.2 J | [3] | 0.8 J | [14] | 0.4 J | [7] | 0.2 J | [6] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | --- | --- | 0.2 J | 3 | 0.1 J | 2 | 0.4 J | 10 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.2 J | [3] | --- | --- | 0.3 J | [5] | 0.1 J | [2] | --- | --- |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.4 J | [7] | 0.1 J | [3] | 0.6 J | [11] | 0.3 J | [5] | 0.2 J | [5] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 0.6 J | 10 | 0.2 J | 3 | 0.9 J | 16 | 0.4 J | 8 | 0.3 J | 7 |
| Fluorene | 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | --- | --- | 0.3 J | [5] | 0.1 J | [2] | 0.1 J | [3] |
| Naphthalene | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 0.3 J | 5 | 0.1 J | 2 | 0.4 J | 7 | 0.2 J | 4 | 0.2 J | 4 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 0.7 J | 13 | 0.3 J | 5 | 1.0 J | 17 | 0.5 J | 9 | 0.4 J | 10 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 0.5 J | 8 | 0.2 J | 3 | 0.5 J | 8 | 0.3 J | 6 | 0.2 J | 4 |
| Total organic carbon (mg/Kg) | NA | --- | 55200 | --- | 54700 | --- | 58700 | --- | 55500 | --- | 38800 | --- |
| % TOC | NA | --- | 5.5 | --- | 5.5 | --- | 5.9 | --- | 5.6 | --- | 3.9 | --- |
| Percent solids (%) | NA | --- | 34 | --- | 48 | --- | 29 | --- | 36 | --- | 50 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 3.1 | --- | 1.0 | --- | [5.4] | --- | 2.6 | --- | 2.0 | --- |
| Total Carcinogenic PAHs | NS | NS | 1.5 | --- | 0.5 | --- | 2.8 | --- | 1.3 | --- | 0.9 | --- |
| Total SVOCs | NS | --- | 3.5 | --- | 1.2 | --- | 5.9 | --- | 2.9 | --- | 2.2 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.3 | [5] | 0.1 | [2] | 0.6 | [10] | 0.3 | [5] | 0.2 | [5] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc).



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values | Ecological Screening Values | WP-01-A 05/09/2001 0 - 6 in. | | WP-04.45-9 05/09/2001 0 - 6 in. | | WP-09A 05/09/2001 0 - 6 in. | | WP-11A 05/09/2001 0 - 6 in. | | LG-OUT 05/09/2001 0 - 6 in. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/g OC | mg/kg | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.1 J | 3 |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.4 J | 19 | --- | --- | --- | --- | 0.1 J | 2 |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | 1.9 J | 86 | 0.1 J | 2 | --- | --- | 0.4 J | 7 |
| Benzo(a)anthracene | 12 | --- | --- | --- | 6.1 | [276] | 0.3 J | 4 | 0.3 J | 4 | 2.6 | [46] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | --- | --- | {5.9 } | [267] | 0.3 J | [4] | 0.4 J | [5] | {3.6 } | [64] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.05 J | [3] | {8.8 } | [398] | 0.5 | [7] | 0.5 | [6] | {4.6 } | [82] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | 1.4 J | 63 | 0.1 J | 2 | 0.2 J | 3 | 1.7 | 30 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 2.2 | [100] | 0.2 J | [2] | 0.2 J | [2] | 1.4 | [25] |
| Carbazole | NS | NS | --- | --- | 1.2 J | 54 | 0.05 J | 0.8 | --- | --- | 0.2 J | 4 |
| Chrysene | 1.3 (H) | --- | --- | --- | 5.8 | [262] | 0.4 J | [6] | 0.3 J | [4] | 2.5 | [45] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | 0.7 J | [30] | --- | --- | --- | --- | 0.9 | [16] |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.5 J | 21 | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 0.05 J | 3 | 11 | 498 | 0.6 | 10 | 0.5 | 6 | 2.8 | 50 |
| Fluorene | 8 | --- | --- | --- | 0.4 J | [19] | 0.05 J | 0.8 | --- | --- | 0.1 J | 2 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | 2.2 J | [100] | 0.2 J | [3] | 0.3 J | [3] | 2.6 | [46] |
| Naphthalene | 30 | --- | --- | --- | 0.4 J | 17 | --- | --- | --- | --- | 0.1 J | 2 |
| Phenanthrene | 120 | --- | --- | --- | 7.5 | [339] | 0.6 | 9 | 0.2 J | 2 | 1.5 | 27 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 0.05 J | 3 | 9.2 | 416 | 0.8 | 11 | 0.5 | 7 | 3.3 | 59 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 0.1 J | 5 | --- | --- | 0.5 | 7 | 0.1 J | 2 | 0.6 J | 10 |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 18600 | --- | 22100 | --- | 65500 | --- | 76500 | --- | 56000 | --- |
| % TOC | NA | --- | 1.9 | --- | 2.2 | --- | 6.6 | --- | 7.7 | --- | 5.6 | --- |
| Percent solids (%) | NA | --- | 81 | --- | 73 | --- | 66 | --- | 65 | --- | 77 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 0.2 | --- | [64 ] | --- | 4.0 | --- | 3.4 | --- | [28 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 0.05 | --- | 32 | --- | 1.8 | --- | 2.0 | --- | 18 | --- |
| Total SVOCs | NS | --- | 0.2 | --- | 66 | --- | 4.6 | --- | 3.6 | --- | 29 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.005 | 0.3 | 8.4 | [380] | 0.4 | [6] | 0.5 | [7] | 5.5 | [98] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc).



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-LGOUT2 05/13/2003 0 - 6 in. C mg/Kg | WP-LGOUT2 SC ug/gOC | WP-MW4 05/13/2003 0 - 6 in. C mg/Kg | WP-MW4 SC ug/gOC | WP-MW4 DUP 05/13/2003 0 - 6 in. C mg/Kg | WP-MW4 DUP SC ug/gOC | WP-16 05/09/2001 0 - 6 in. C mg/Kg | WP-16 SC ug/gOC | WP-18 05/09/2001 0 - 6 in. C mg/Kg | WP-18 SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | 0.07 J | 5 | --- | --- | 0.2 J | [16] | 0.05 J | 5 | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | 0.09 J | 8 | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | 0.05 J | 2 | 0.1 J | 12 | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | 0.05 J | 2 | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.04 J | 2 | 0.2 J | 15 | 0.09 J | 10 | 0.1 J | 6 |
| Acenaphthylene | NS | --- | --- | --- | 0.5 | 19 | 0.4 J | 31 | --- | --- | --- | --- |
| Anthracene | 107 | --- | 0.2 J | 12 | 0.8 | 31 | 1.2 | 99 | 0.3 J | 31 | 0.3 J | 14 |
| Benzo(a)anthracene | 12 | --- | 0.7 | [52] | 3.8 D | [150] | 4.7 D | [388] | 0.8 | [94] | 1.0 | [41] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {0.7 } | [52] | {3.7 D} | [146] | {4.5 D} | [372] | {0.7 } | [76] | {0.7 } | [32] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.8 | [65] | {4.5 D} | [177] | {6.2 D} | [512] | 0.9 | [105] | 1.0 | [43] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.3 J | 26 | 1.2 | 47 | 1.5 | 124 | 0.3 J | 33 | 0.2 J | 10 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.3 J | [23] | 1.4 | [55] | 2.0 | [165] | 0.3 J | [35] | 0.4 J | [15] |
| Carbazole | NS | NS | 0.09 J | 7 | 0.1 J | 6 | 0.4 J | 35 | 0.1 J | 14 | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.6 | [48] | 2.9 | [114] | 4.2 D | [347] | 0.8 | [91] | 0.8 | [36] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 0.1 J | 10 | 0.6 | [23] | 0.7 | [57] | 0.2 J | [18] | 0.1 J | 5 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.1 J | 5 | 0.3 J | 21 | 0.06 J | 7 | --- | --- |
| Fluoranthene | 1020 | --- | 1.0 | 78 | 6.4 D | 252 | 9.0 D | 744 | 1.5 | 171 | 1.7 | 73 |
| Fluorene | 8 | --- | --- | --- | 0.2 J | 8 | 0.3 J | [25] | 0.1 J | [14] | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.4 J | [29] | 1.6 | [63] | 1.9 | [157] | 0.5 | [54] | 0.3 J | [13] |
| Naphthalene | 30 | --- | 0.05 J | 4 | 0.2 J | 6 | 0.4 | [36] | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 0.6 | 52 | 2.4 | 94 | 4.4 D | [364] | 1.3 | [148] | 0.6 | 24 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 1.1 | 89 | 5.4 D | 213 | 7.2 D | 595 | 1.5 | 171 | 1.6 | 68 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | 0.3 J | 29 | 0.2 J | 7 |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 12400 J | --- | 25400 | --- | 12100 | --- | 8770 | --- | 23400 | --- |
| % TOC | NA | --- | 1.2 J | --- | 2.5 | --- | 1.2 | --- | 0.9 | --- | 2.3 | --- |
| Percent solids (%) | NA | --- | 75 | --- | 81 | --- | 79 | --- | 79 | --- | 68 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [6.7 ] | --- | [12 ] | --- | [8.7 ] | --- | [9.2 ] | --- | [8.9 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 3.5 | --- | 6.5 | --- | 4.6 | --- | 4.2 | --- | 4.3 | --- |
| Total SVOCs | NS | --- | 6.9 | --- | 12 | --- | 9.7 | --- | 9.7 | --- | 9.0 | --- |
| BaP Equivalents | 1.3 (H) | NS | 1.0 | [81] | 0.8 | [31] | 0.9 | [74] | 1.1 | [125] | 1.1 | [47] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc).



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values | Ecological Screening Values | WP-18 05/09/2001 6 - 12 in. | | WP-M2 05/14/2003 0 - 6 in. | | WP-M2 05/14/2003 6 - 12 in. | | WP-M2 05/14/2003 12 - 17 in. | | WP-M3 05/14/2003 0 - 6 in. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/g OC | mg/kg | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | 0.04 J | 4 | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | 1.4 J | 124 | 1.0 | 88 | 0.1 J | 1 |
| Anthracene | 107 | --- | --- | --- | --- | --- | 1.7 J | 150 | 0.2 J | 19 | 0.1 J | 2 |
| Benzo(a)anthracene | 12 | --- | 0.08 J | 3 | 0.3 J | 30 | 5.8 | [513] | 1.0 | 88 | 0.3 J | 5 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.07 J | [3] | 1.4 J | [124] | 17 | [1504] | 4.2 D | [372] | 1.3 | [20] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.1 J | [6] | {1.1 J} | [97] | {14 } | [1239] | {3.6 D} | [319] | {1.2 } | [19] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | 2.0 J | [177] | {17 } | [1504] | {4.4 D} | [389] | 1.8 | [28] |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 0.7 J | 58 | {4.3 J} | 381 | 1.2 JD | 106 | 0.6 J | 10 |
| Carbazole | NS | NS | --- | --- | 0.6 J | [52] | {6.8 } | [602] | 1.7 JD | [150] | 0.7 J | [11] |
| Chrysene | 1.3 (H) | --- | 0.09 J | [4] | --- | --- | --- | --- | 0.2 J | 14 | --- | --- |
| Di-n-butyl phthalate | NS | --- | --- | --- | 1.2 J | [106] | 14 | [1239] | 3.7 D | [327] | 1.5 | [24] |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.2 J | [20] | 1.9 J | [168] | 0.5 JD | [47] | 0.2 J | 4 |
| Fluoranthene | 1020 | --- | 0.2 J | 8 | --- | --- | 0.7 J | 62 | 0.3 J | 28 | --- | --- |
| Fluorene | 8 | --- | --- | --- | 2.4 | 212 | 33 | [2920] | 8.4 D | 743 | 2.4 | 38 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | --- | --- | 1.6 J | [142] | 0.5 | [45] | --- | --- |
| Naphthalene | 30 | --- | --- | --- | 0.7 J | [58] | 5.1 J | [451] | 1.4 JD | [124] | 0.6 J | [10] |
| Phenanthrene | 120 | --- | --- | --- | --- | --- | 1.2 J | [106] | 0.3 J | 30 | --- | --- |
| Phenol | 0.5 (t) | --- | 0.06 J | 2 | 0.8 J | 74 | 11 | [973] | 1.6 | [142] | 1.0 | 16 |
| Pyrene | 961 | --- | --- | --- | --- | --- | --- | --- | 0.1 J | [10] | --- | --- |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 0.3 J | 12 | 2.7 J | 239 | 29 | [2566] | 7.7 D | 681 | 2.9 | 45 |
| | | | 0.1 J | 6 | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 24400 | --- | 11300 e BJ | --- | 11300 e BJ | --- | 11300 BJ | --- | 63800 BJ | --- |
| % TOC | NA | --- | 2.4 | --- | 1.1 e BJ | --- | 1.1 e BJ | --- | 1.1 BJ | --- | 6.4 BJ | --- |
| Percent solids (%) | NA | --- | 64 | --- | 28 | --- | 66 | --- | 79 | --- | 39 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 0.9 | --- | 3.6 | --- | [165 ] | --- | [4.7 ] | --- | [9.6 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 0.4 | --- | 7.2 | --- | 76 | --- | 20 | --- | 2.8 | --- |
| Total SVOCs | NS | --- | 1.1 | --- | 3.6 | --- | 166 | --- | 5.3 | --- | 9.6 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.09 | [4] | 1.8 | [159] | 20 | [1770] | 5.2 | [460] | 0.1 | [2] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc).



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# Table 3-2

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-M3 05/14/2003 6 - 12 in. C mg/Kg | WP-M3 SC ug/gOC | WP-DOT 05/14/2003 0 - 6 in. C mg/Kg | WP-DOT SC ug/gOC | WP-DOT 05/14/2003 6 - 12 in. C mg/Kg | WP-DOT SC ug/gOC | WP-DOT 05/14/2003 12 - 18 in. C mg/Kg | WP-DOT SC ug/gOC | WP-29A 05/14/2003 0 - 6 in. C mg/Kg | WP-29A SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.4 | [28] |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 J | 4 |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | [26] |
| 2-Methylnaphthalene | 34 | --- | 1.0 J | 19 | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | 2.7 J | 54 | --- | --- | 4.9 J | 366 | 6.6 J | 493 | 0.3 J | 5 |
| Acenaphthylene | NS | --- | --- | --- | 1.2 J | 90 | --- | --- | --- | --- | 0.3 J | 6 |
| Anthracene | 107 | --- | 5.1 | 102 | 4.5 J | [336] | 17 | [1269] | 31 | [2313] | 1.1 J | 22 |
| Benzo(a)anthracene | 12 | --- | 8.7 | [174] | 13 | [970] | 27 | [2015] | 27 | [2015] | 3.8 | [76] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {8.1 } | [162] | {10 } | [746] | {20 } | [1493] | {21 } | [1567] | {3.6 DJ} | [72] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | {9.5 } | [190] | {12 } | [896] | {25 } | [1866] | {24 } | [1791] | {4.7 DJ} | [94] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 2.5 J | 50 | 2.8 J | 209 | {8.6 J} | 642 | {7.0 J} | 522 | 1.1 DJ | 22 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 4.0 J | [80] | 4.0 J | [299] | {7.7 J} | [575] | {8.3 J} | [619] | 1.8 DJ | [36] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 8.6 | [172] | 10 | [746] | 22 | [1642] | 24 | [1791] | 3.4 | [68] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 1.2 J | [24] | 1.2 J | [90] | 3.6 J | [269] | 2.8 J | [209] | 0.5 DJ | 9 |
| Dibenzofuran | NS | 5.1 (2) | 1.4 J | 28 | --- | --- | 2.5 J | 187 | 3.1 J | 231 | 0.1 J | 3 |
| Fluoranthene | 1020 | --- | 18 | 360 | 24 | [1791] | 61 | [4552] | 65 | [4851] | 6.0 | 120 |
| Fluorene | 8 | --- | 1.9 J | [38] | 0.6 J | [44] | 6.6 J | [493] | 9.2 J | [687] | 0.3 J | 6 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 3.2 J | [64] | 3.6 J | [269] | 9.3 J | [694] | 7.6 J | [567] | 1.2 DJ | [24] |
| Naphthalene | 30 | --- | 2.6 J | [52] | 0.5 J | [40] | 3.1 J | [231] | 2.6 J | [194] | 0.3 J | 7 |
| Phenanthrene | 120 | --- | 14 | [280] | 6.9 | [515] | 45 | [3358] | 80 | [5970] | 2.4 | 48 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 15 | 300 | 20 | [1493] | 47 | [3507] | 54 | [4030] | 6.0 | 120 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 63800 e BJ | --- | 13400 BJ | --- | 13400 e BJ | --- | 13400 e BJ | --- | 62900 e BJ | --- |
| % TOC | NA | --- | 6.4 e BJ | --- | 1.3 BJ | --- | 1.3 e BJ | --- | 1.3 e BJ | --- | 6.3 e BJ | --- |
| Percent solids (%) | NA | --- | 65 | --- | 64 | --- | 61 | --- | 73 | --- | 59 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [106 ] | --- | [114 ] | --- | [308 ] | --- | [370 ] | --- | [24 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 43 | --- | 54 | --- | 115 | --- | 115 | --- | 7.2 | --- |
| Total SVOCs | NS | --- | 107 | --- | 114 | --- | 310 | --- | 373 | --- | 27 | --- |
| BaP Equivalents | 1.3 (H) | NS | 12 | [240] | 14 | [1045] | 30 | [2239] | 30 | [2239] | 0.4 | [8] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc'd).



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# Table 3-2

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-29A 05/14/2003 6 - 12 in. C mg/Kg | WP-29A 05/14/2003 6 - 12 in. SC ug/gOC | WP-29A DUP 05/14/2003 6 - 12 in. C mg/Kg | WP-29A DUP 05/14/2003 6 - 12 in. SC ug/gOC | WP-29A 05/14/2003 12 - 17 in. C mg/Kg | WP-29A 05/14/2003 12 - 17 in. SC ug/gOC | WP-29 05/09/2001 0 - 6 in. C mg/Kg | WP-29 05/09/2001 0 - 6 in. SC ug/gOC | WP-29 05/09/2001 6 - 12 in. C mg/Kg | WP-29 05/09/2001 6 - 12 in. SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | 1.9 J | 30 | 2.7 J | [39] | --- | --- | --- | --- | 1.1 J | [150] |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | 6.6 | 105 | 12 J | 171 | 9.6 J | 192 | 11 J | 507 | 9.1 | 1241 |
| Acenaphthylene | NS | --- | 0.8 J | 13 | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | 14 | [223] | 32 | [456] | 29 | [580] | 6.0 J | [276] | 15 | [2046] |
| Benzo(a)anthracene | 12 | --- | 19 | [302] | 33 | [471] | 30 | [600] | 20 J | [922] | 13 | [1774] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {16 } | [254] | {27 } | [385] | {23 } | [460] | {17 J} | [783] | {9.3 } | [1269] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | {20 } | [318] | {29 } | [414] | {28 } | [560] | {19 J} | [876] | {11 } | [1501] |
| Benzo(ghi)perylene | NS | 3.8 (1) | {4.2 J} | 67 | {9.5 J} | 136 | {7.2 J} | 144 | {6.2 J} | 286 | 2.6 J | 355 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | {8.1 } | [129] | {13 J} | [185] | {8.0 J} | [160] | {6.5 J} | [300] | 3.7 J | [505] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | 5.2 J | 240 | --- | --- |
| Chrysene | 1.3 (H) | --- | 18 | [286] | 31 | [442] | 25 | [500] | 18 J | [829] | 11 | [1501] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 1.9 J | [30] | 3.8 J | [54] | 3.1 J | [62] | 2.3 J | [106] | 1.7 J | [232] |
| Dibenzofuran | NS | 5.1 (2) | 2.9 J | 46 | {6.0 J} | 86 | 3.7 J | 74 | 2.3 J | 106 | {5.4 J} | 737 |
| Fluoranthene | 1020 | --- | 45 | 715 | 71 | 1013 | 72 | [1440] | 43 J | [1982] | 34 | [4638] |
| Fluorene | 8 | --- | 6.2 J | [99] | 14 J | [200] | 11 J | [220] | 6.2 J | [286] | 8.9 J | [1214] |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 5.3 J | [84] | 10 J | [143] | 9.0 J | [180] | 6.9 J | [318] | 4.7 J | [641] |
| Naphthalene | 30 | --- | 5.5 J | [87] | 6.8 J | [97] | 2.6 J | [52] | 3.1 J | [143] | 2.1 J | [286] |
| Phenanthrene | 120 | --- | 44 | [700] | 86 | [1227] | 87 | [1740] | 14 J | [645] | 42 | [5730] |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 36 | 572 | 64 | 913 | 59 | [1180] | 35 J | [1613] | 28 | [3820] |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 62900 BJ | --- | 70100 BJ | --- | 62900 e BJ | --- | 21700 | --- | 7330 | --- |
| % TOC | NA | --- | 6.3 BJ | --- | 7.0 BJ | --- | 6.3 e BJ | --- | 2.2 | --- | 0.7 | --- |
| Percent solids (%) | NA | --- | 53 | --- | 55 | --- | 60 | --- | 56 | --- | 62 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [253 ] | --- | [445 ] | --- | [404 ] | --- | [214 ] | --- | [197 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 88 | --- | 147 | --- | 126 | --- | 89 | --- | 54 | --- |
| Total SVOCs | NS | --- | 255 | --- | 451 | --- | 407 | --- | 221 | --- | 203 | --- |
| BaP Equivalents | 1.3 (H) | NS | 23 | [366] | 38 | [542] | 33 | [660] | 24 | [1106] | 14 | [1910] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 3-2

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-29 05/09/2001 12 - 18 in. C mg/Kg | WP-29 SC ug/gOC | WP-CKOUT 05/14/2003 0 - 6 in. C mg/Kg | WP-CKOUT SC ug/gOC | WP-OD3 05/14/2003 0 - 6 in. C mg/Kg | WP-OD3 SC ug/gOC | WP-OD3 05/14/2003 6 - 12 in. C mg/Kg | WP-OD3 SC ug/gOC | WP-PL 05/08/2001 0 - 6 in. C mg/Kg | WP-PL SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | 0.1 J | 4 | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | 0.2 J | 7 | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | 0.07 J | 2 | --- | --- |
| Acenaphthene | NS | --- | 46 J | 438 | --- | --- | 0.1 J | 4 | 0.3 J | 10 | 0.2 J | 1 |
| Acenaphthylene | NS | --- | --- | --- | 0.06 J | 2 | 0.3 J | 10 | 0.8 | 26 | 0.3 J | 2 |
| Anthracene | 107 | --- | 86 | [819] | 0.2 J | 4 | 1.3 | 43 | 3.6 | [118] | 1.2 J | 10 |
| Benzo(a)anthracene | 12 | --- | 84 | [800] | 0.9 | [26] | 4.6 DJ | [151] | 11 D | [361] | 4.6 J | [40] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {64 } | [610] | {0.9 } | [26] | {4.0 DJ} | [131] | {9.1 DJ} | [298] | {4.5 J} | [39] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | {74 } | [705] | 1.4 | [39] | {5.3 DJ} | [174] | {11 DJ} | [361] | {5.9 J} | [51] |
| Benzo(ghi)perylene | NS | 3.8 (1) | {15 J} | 143 | 0.3 J | 7 | 0.9 J | 31 | 1.9 J | 62 | 1.5 J | 13 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | {32 J} | [305] | 0.6 | [17] | 2.2 J | [72] | 3.5 J | [115] | 2.3 J | [20] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | 0.1 J | 5 | --- | --- |
| Chrysene | 1.3 (H) | --- | 77 | [733] | 0.8 | [21] | 2.8 | [92] | 10 D | [328] | 4.5 J | [39] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 9.8 J | [93] | 0.1 J | 3 | 0.3 J | 11 | 0.8 J | [27] | 0.8 J | 7 |
| Dibenzofuran | NS | 5.1 (2) | {30 J} | 286 | --- | --- | 0.07 J | 2 | 0.2 J | 8 | 0.1 J | 1 |
| Fluoranthene | 1020 | --- | 180 | [1714] | 2.0 | 56 | 7.3 D | 239 | 17 D | 557 | 5.7 J | 50 |
| Fluorene | 8 | --- | 46 J | [438] | --- | --- | 0.2 J | 6 | 0.5 J | [15] | 0.2 J | 2 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 28 J | [267] | 0.3 J | [9] | 1.1 J | [36] | 2.2 J | [72] | 2.7 J | [23] |
| Naphthalene | 30 | --- | --- | --- | 0.07 J | 2 | 0.1 J | 5 | 0.8 | 25 | 0.3 J | 2 |
| Phenanthrene | 120 | --- | 210 | [2000] | 0.4 J | 10 | 3.3 | 108 | 7.1 DJ | [233] | 2.2 J | 19 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | 0.08 J | [3] | --- | --- |
| Pyrene | 961 | --- | 140 | [1333] | 1.6 | 45 | 8.2 D | 269 | 20 D | 656 | 8.4 J | 73 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.7 J | 6 |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 105000 | --- | 35900 | --- | 30500 e | --- | 30500 | --- | 115000 | --- |
| % TOC | NA | --- | 11 | --- | 3.6 | --- | 3.1 e | --- | 3.1 | --- | 12 | --- |
| Percent solids (%) | NA | --- | 58 | --- | 70 | --- | 72 | --- | 68 | --- | 26 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [1092 ] | --- | [9.5 ] | --- | [13 ] | --- | [14 ] | --- | [45 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 369 | --- | 5.0 | --- | 6.4 | --- | 6.5 | --- | 25 | --- |
| Total SVOCs | NS | --- | 1122 | --- | 9.5 | --- | 13 | --- | 15 | --- | 46 | --- |
| BaP Equivalents | 1.3 (H) | NS | 93 | [886] | 1.3 | [36] | 0.5 | [16] | 1.1 | [36] | 6.7 | [58] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-PL DUP 05/08/2001 0 - 6 in. C mg/Kg | WP-PL DUP SC ug/gOC | WP-PL 05/08/2001 6 - 11 in. C mg/Kg | WP-PL SC ug/gOC | WP-PL1 05/13/2003 0 - 6 in. C mg/Kg | WP-PL1 SC ug/gOC | WP-PL1 05/13/2003 6 - 12 in. C mg/Kg | WP-PL1 SC ug/gOC | WP-PL1 05/13/2003 12 - 18 in. C mg/Kg | WP-PL1 SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | 0.1 J | 1 | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.1 J | 1 | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | 0.2 J | 1 | 0.1 J | 1 | 0.1 J | 1 | --- | --- | --- | --- |
| Anthracene | 107 | --- | 0.6 J | 5 | 0.8 J | 9 | 0.5 J | 5 | --- | --- | --- | --- |
| Benzo(a)anthracene | 12 | --- | 3.2 J | [28] | 2.6 J | [32] | 2.2 J | [20] | 0.3 J | 3 | --- | --- |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {3.2 J} | [28] | {2.5 J} | [30] | {1.1 J} | [10] | 0.3 J | [3] | --- | --- |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | {4.6 J} | [40] | 4.0 J | [49] | 2.4 J | [22] | 0.4 J | [5] | --- | --- |
| Benzo(ghi)perylene | NS | 3.8 (1) | 1.1 J | 10 | 1.2 J | 15 | 0.5 J | 5 | 0.08 J | 1 | --- | --- |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 1.5 J | [13] | 1.0 J | [12] | 1.2 J | [11] | 0.2 J | [2] | --- | --- |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 2.9 J | [25] | 2.7 J | [33] | 2.1 J | [19] | 0.3 J | [4] | --- | --- |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 0.7 J | 6 | 0.6 J | 7 | 0.3 J | 2 | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.3 J | 3 | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 3.6 J | 31 | 4.2 J | 51 | 4.0 J | 37 | 0.6 J | 7 | --- | --- |
| Fluorene | 8 | --- | 0.2 J | 1 | 0.3 J | 3 | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 2.0 J | [17] | 1.8 J | [22] | 0.7 J | [6] | 0.1 J | 1 | --- | --- |
| Naphthalene | 30 | --- | 0.2 J | 2 | 0.3 J | 4 | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 1.2 J | 10 | 1.1 J | 13 | 1.2 J | 11 | 0.1 J | 1 | --- | --- |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 5.9 J | 51 | 5.6 J | 68 | 3.5 J | 32 | 0.6 J | 7 | --- | --- |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 0.8 J | 7 | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 115000 | --- | 82300 | --- | 108000 J | --- | 80500 J | --- | 51700 | --- |
| % TOC | NA | --- | 12 | --- | 8.2 | --- | 11 J | --- | 8.1 J | --- | 5.2 | --- |
| Percent solids (%) | NA | --- | 25 | --- | 40 | --- | 29 | --- | 43 | --- | 56 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [31 ] | --- | [29 ] | --- | [20 ] | --- | 2.8 | --- | --- | --- |
| Total Carcinogenic PAHs | NS | NS | 18 | --- | 15 | --- | 9.9 | --- | 1.5 | --- | --- | --- |
| Total SVOCs | NS | --- | 32 | --- | 29 | --- | 20 | --- | 2.8 | --- | --- | --- |
| BaP Equivalents | 1.3 (H) | NS | 5.0 | [43] | 4.0 | [49] | 1.9 | [18] | 0.3 | [4] | --- | --- |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc).



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# Table 3-2

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-PL2 05/13/2003 0 - 6 in. C mg/Kg | WP-PL2 05/13/2003 0 - 6 in. SC ug/gOC | WP-PL2 05/13/2003 6 - 12 in. C mg/Kg | WP-PL2 05/13/2003 6 - 12 in. SC ug/gOC | WP-PL2 05/13/2003 12 - 24 in. C mg/Kg | WP-PL2 05/13/2003 12 - 24 in. SC ug/gOC | WP-PL3 05/13/2003 0 - 6 in. C mg/Kg | WP-PL3 05/13/2003 0 - 6 in. SC ug/gOC | WP-PL3 05/13/2003 6 - 12 in. C mg/Kg | WP-PL3 05/13/2003 6 - 12 in. SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | 0.2 J | 3 | 0.1 J | 2 | --- | --- | --- | --- | 0.1 J | 1 |
| Anthracene | 107 | --- | 0.7 J | 12 | 0.3 J | 5 | 0.2 J | 2 | 0.2 J | 2 | 0.2 J | 2 |
| Benzo(a)anthracene | 12 | --- | 2.6 J | [44] | 1.5 J | [23] | 0.9 J | 12 | 0.8 J | 8 | 1.1 J | 9 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {1.2 J} | [20] | {0.8 J} | [13] | {0.8 J} | [11] | {0.5 J} | [6] | {1.0 J} | [8] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 3.6 J | [61] | 2.2 J | [34] | 1.1 J | [14] | 0.9 J | [9] | 1.8 J | [15] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.7 J | 12 | 0.5 J | 8 | 0.3 J | 4 | 0.2 J | 2 | 0.5 J | 4 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 1.1 J | [19] | 0.8 J | [12] | 0.5 J | [7] | 0.4 J | [5] | 0.6 J | [5] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | 0.1 J | 0.9 |
| Chrysene | 1.3 (H) | --- | 2.1 J | [36] | 1.4 J | [22] | 0.9 J | [11] | 0.8 J | [8] | 1.3 J | [11] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | 0.2 J | 2 | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 0.3 J | 5 | 0.2 J | 3 | 0.1 J | 2 | --- | --- | 0.2 J | 1 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | --- | --- | 0.1 J | 0.9 |
| Fluoranthene | 1020 | --- | 4.5 J | 77 | 2.2 J | 34 | 1.5 J | 19 | 1.4 J | 15 | 2.5 J | 21 |
| Fluorene | 8 | --- | 0.2 J | 3 | --- | --- | --- | --- | --- | --- | 0.1 J | 1 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.9 J | [14] | 0.6 J | [9] | 0.4 J | [5] | 0.2 J | [2] | 0.5 J | [4] |
| Naphthalene | 30 | --- | --- | --- | --- | --- | 0.1 J | 1 | --- | --- | 0.2 J | 2 |
| Phenanthrene | 120 | --- | 1.5 J | 26 | 0.8 J | 12 | 0.4 J | 5 | 0.5 J | 6 | 1.2 J | 10 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 4.3 J | 73 | 2.4 J | 37 | 1.6 J | 21 | 1.2 J | 13 | 2.3 J | 19 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 58700 BJ | --- | 64200 BJ | --- | 77000 BJ | --- | 93900 BJ | --- | 118000 BJ | --- |
| % TOC | NA | --- | 5.9 BJ | --- | 6.4 BJ | --- | 7.7 BJ | --- | 9.4 BJ | --- | 12 BJ | --- |
| Percent solids (%) | NA | --- | 26 | --- | 34 | --- | 43 | --- | 24 | --- | 35 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [24 ] | --- | [14 ] | --- | [8.8 ] | --- | [7.1 ] | --- | [14 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 12 | --- | 7.5 | --- | 4.7 | --- | 3.6 | --- | 6.4 | --- |
| Total SVOCs | NS | --- | 24 | --- | 14 | --- | 8.8 | --- | 7.3 | --- | 14 | --- |
| BaP Equivalents | 1.3 (H) | NS | 2.2 | [37] | 1.5 | [23] | 1.2 | [16] | 0.7 | [7] | 1.5 | [13] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc).



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File Number: 10653.27258

# Table 3-2

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T1A 05/14/2003 0 - 6 in. C mg/Kg | WP-T1A 05/14/2003 0 - 6 in. SC ug/gOC | WP-T1A 05/14/2003 6 - 12 in. C mg/Kg | WP-T1A 05/14/2003 6 - 12 in. SC ug/gOC | WP-T1A 05/14/2003 12 - 24 in. C mg/Kg | WP-T1A 05/14/2003 12 - 24 in. SC ug/gOC | WP-T1C 05/14/2003 0 - 6 in. C mg/Kg | WP-T1C 05/14/2003 0 - 6 in. SC ug/gOC | WP-T1C 05/14/2003 6 - 10 in. C mg/Kg | WP-T1C 05/14/2003 6 - 10 in. SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | 0.09 J | 2 | 0.1 J | 1 | 0.09 J | 3 | 0.3 J | 9 |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | 0.09 J | 2 | 0.07 J | 0.8 | 0.06 J | 2 | 0.1 J | 4 |
| Acenaphthene | NS | --- | --- | --- | 0.7 J | 14 | 0.8 | 9 | 0.1 J | 4 | 0.3 J | 11 |
| Acenaphthylene | NS | --- | --- | --- | 0.6 J | 12 | 0.3 J | 4 | 0.09 J | 3 | 0.2 J | 5 |
| Anthracene | 107 | --- | 0.2 J | 4 | 3.3 J | 66 | 3.2 DJ | 37 | 0.9 | 29 | 2.4 | 77 |
| Benzo(a)anthracene | 12 | --- | 0.7 J | [14] | 8.6 DJ | [172] | 6.8 DJ | [80] | 2.2 | [71] | 4.6 D | [148] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.3 J | [6] | {8.8 DJ} | [176] | {5.8 DJ} | [68] | {2.1 DJ} | [68] | {3.9 DJ} | [125] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.4 J | [8] | {11 DJ} | [220] | {7.0 DJ} | [82] | 3.1 DJ | [100] | {5.3 DJ} | [170] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.1 J | 3 | 2.1 J | 42 | 1.9 DJ | 22 | 0.7 DJ | 23 | 1.2 DJ | 39 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.2 J | [5] | {4.7 J} | [94] | 3.4 DJ | [40] | 0.9 DJ | [28] | 1.9 DJ | [61] |
| Carbazole | NS | NS | --- | --- | 0.1 J | 2 | 0.08 J | 1 | --- | --- | 0.09 J | 3 |
| Chrysene | 1.3 (H) | --- | 1.0 J | [19] | 4.6 J | [92] | 6.6 DJ | [77] | 1.6 | [51] | 2.9 | [93] |
| Di-n-butyl phthalate | NS | --- | --- | --- | 0.1 J | 3 | 0.1 J | 1 | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | 0.8 J | [16] | 0.9 DJ | 11 | 0.3 DJ | 11 | 0.6 DJ | [20] |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.2 J | 4 | 0.3 J | 3 | 0.1 J | 5 | 0.4 J | 12 |
| Fluoranthene | 1020 | --- | 1.2 J | 24 | 15 DJ | 300 | 12 DJ | 141 | 3.9 D | 125 | 8.2 D | 264 |
| Fluorene | 8 | --- | --- | --- | 0.5 J | [11] | 0.6 | 7 | 0.2 J | 6 | 0.5 J | [17] |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.1 J | [3] | 2.3 J | [46] | 2.2 DJ | [26] | 0.8 DJ | [26] | 1.4 DJ | [45] |
| Naphthalene | 30 | --- | --- | --- | 0.4 J | 8 | 0.5 J | 6 | 0.8 | 25 | 0.9 | 30 |
| Phenanthrene | 120 | --- | 0.4 J | 7 | 6.1 DJ | [122] | 5.6 DJ | 66 | 2.2 | 71 | 4.8 D | [154] |
| Phenol | 0.5 (t) | --- | --- | --- | 0.09 J | [2] | 0.09 J | [1] | 0.05 J | [2] | 0.08 J | [2] |
| Pyrene | 961 | --- | 1.3 J | 26 | 15 DJ | 300 | 13 DJ | 152 | 4.1 D | 132 | 8.8 D | 283 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon (mg/Kg) | NA | --- | 85400 e J | --- | 85400 e J | --- | 85400 J | --- | 31100 e | --- | 31100 | --- |
| % TOC | NA | --- | 8.5 e J | --- | 8.5 e J | --- | 8.5 J | --- | 3.1 e | --- | 3.1 | --- |
| Percent solids (%) | NA | --- | 34 | --- | 43 | --- | 59 | --- | 70 | --- | 63 | --- |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [5.9 ] | --- | [20 ] | --- | 2.2 | --- | [8.2 ] | --- | [7.5 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 2.7 | --- | 12 | --- | 33 | --- | 3.8 | --- | 2.9 | --- |
| Total SVOCs | NS | --- | 5.9 | --- | 21 | --- | 2.8 | --- | 8.4 | --- | 8.1 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.5 | [10] | 1.1 | [22] | 8.4 | [98] | 0.2 | [6] | 0.03 | 1 |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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File Number: 10653.27258

# Table 3-2

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-OD2 05/14/2003 0 - 6 in. C mg/Kg | WP-OD2 05/14/2003 0 - 6 in. SC ug/gOC | WP-OD2 05/14/2003 6 - 12 in. C mg/Kg | WP-OD2 05/14/2003 6 - 12 in. SC ug/gOC | WP-OD2 05/14/2003 12 - 22 in. C mg/Kg | WP-OD2 05/14/2003 12 - 22 in. SC ug/gOC | WP-T2A 05/13/2003 0 - 6 in. C mg/Kg | WP-T2A 05/13/2003 0 - 6 in. SC ug/gOC | WP-T2A 05/13/2003 6 - 12 in. C mg/Kg | WP-T2A 05/13/2003 6 - 12 in. SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.2 J | 4 | 0.7 | 17 | --- | --- | 0.2 J | 5 |
| Acenaphthylene | NS | --- | --- | --- | 0.1 J | 3 | 0.2 J | 5 | --- | --- | 0.2 J | 5 |
| Anthracene | 107 | --- | 0.2 J | 5 | 0.3 J | 8 | 1.6 | 39 | 0.4 J | 7 | 0.7 | 23 |
| Benzo(a)anthracene | 12 | --- | 0.9 J | [22] | 1.6 J | [39] | 3.4 | [83] | 1.9 J | [38] | 3.4 | [108] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {0.5 J} | [12] | {1.2 J} | [29] | {3.0 DJ} | [73] | {0.9 J} | [18] | {2.8 } | [89] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 0.8 J | [20] | 1.8 J | [44] | 3.8 DJ | [92] | 2.6 J | [52] | 3.7 D | [118] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.2 J | 4 | 0.4 J | 9 | 1.0 DJ | 24 | 0.6 J | 12 | 0.9 | 30 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.5 J | [11] | 0.9 J | [23] | 1.6 DJ | [39] | 0.6 J | [11] | 1.0 | [31] |
| Carbazole | NS | NS | --- | --- | --- | --- | 0.06 J | 1 | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 1.2 J | [29] | 1.0 J | [23] | 2.3 | [56] | 1.4 J | [28] | 2.5 | [80] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | 0.3 J | 7 | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | 0.4 DJ | 11 | 0.2 J | 4 | 0.4 J | 11 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | 0.1 J | 2 | --- | --- | 0.07 J | 2 |
| Fluoranthene | 1020 | --- | 1.9 J | 46 | 3.0 J | 73 | 6.7 D | 163 | 2.6 J | 52 | 4.8 D | 153 |
| Fluorene | 8 | --- | --- | --- | --- | --- | 0.3 J | 7 | --- | --- | 0.2 J | 5 |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.2 J | [5] | 0.4 J | [9] | 1.2 DJ | [29] | 0.6 J | [13] | 1.1 | [35] |
| Naphthalene | 30 | --- | --- | --- | 0.09 J | 2 | 0.1 J | 2 | --- | --- | 0.2 J | 5 |
| Phenanthrene | 120 | --- | 0.5 J | 12 | 0.6 J | 15 | 3.5 | 85 | 0.8 J | 15 | 1.3 | 41 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 1.5 J | 36 | 2.2 J | 54 | 7.5 D | 182 | 3.0 J | 60 | 5.3 D | 169 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 41100 e J | --- | 41100 e J | --- | 41100 J | --- | 49600 BJ | --- | 31400 B | --- |
| % TOC | NA | --- | 4.1 e J | --- | 4.1 e J | --- | 4.1 J | --- | 5.0 BJ | --- | 3.1 B | --- |
| Percent solids (%) | NA | --- | 30 | --- | 49 | --- | 63 | --- | 27 | --- | 63 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [8.3 ] | --- | [14 ] | --- | [12 ] | --- | [16 ] | --- | [15 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 4.1 | --- | 6.9 | --- | 5.7 | --- | 8.2 | --- | 11 | --- |
| Total SVOCs | NS | --- | 8.3 | --- | 14 | --- | 12 | --- | 16 | --- | 15 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.7 | [17] | 1.6 | [39] | 0.4 | [10] | 1.7 | [34] | 3.6 | [115] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T2B 05/13/2003 0 - 6 in. C mg/Kg | WP-T2B 05/13/2003 0 - 6 in. SC ug/gOC | WP-T2B 05/13/2003 6 - 12 in. C mg/Kg | WP-T2B 05/13/2003 6 - 12 in. SC ug/gOC | WP-T2B 05/13/2003 12 - 24 in. C mg/Kg | WP-T2B 05/13/2003 12 - 24 in. SC ug/gOC | WP-T2C 05/13/2003 0 - 6 in. C mg/Kg | WP-T2C 05/13/2003 0 - 6 in. SC ug/gOC | WP-T2C 05/13/2003 6 - 12 in. C mg/Kg | WP-T2C 05/13/2003 6 - 12 in. SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | 0.1 J | 3 | 0.06 J | 2 | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | 0.1 J | 2 | 0.1 J | 4 | --- | --- | --- | --- | 0.8 J | 13 |
| Anthracene | 107 | --- | 0.6 J | 12 | 0.4 J | 14 | --- | --- | 6.0 J | [133] | 6.5 J | [110] |
| Benzo(a)anthracene | 12 | --- | 1.8 J | [37] | 1.2 | [45] | 0.1 J | 5 | 18 J | [400] | 13 | [220] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {1.6 J} | [33] | {0.9 J} | [34] | 0.09 J | [4] | {15 J} | [333] | {11 } | [186] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 2.2 J | [45] | 1.4 J | [53] | 0.1 J | [5] | {20 J} | [444] | {13 } | [220] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.5 J | 9 | 0.3 J | 11 | --- | --- | {5.8 J} | 129 | {4.4 J} | 75 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.8 J | [16] | 0.4 J | [14] | --- | --- | {6.0 J} | [133] | {4.3 J} | [73] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 1.6 J | [33] | 0.9 | [34] | 0.09 J | [5] | 15 J | [333] | 12 | [203] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | 0.2 J | 4 | 0.1 J | 5 | --- | --- | 2.3 J | [51] | 1.8 J | [31] |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.05 J | 2 | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 2.4 J | 49 | 2.0 | 76 | 0.2 J | 8 | 30 J | 667 | 25 | 424 |
| Fluorene | 8 | --- | 0.1 J | 3 | 0.07 J | 3 | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.5 J | [11] | 0.4 J | [14] | --- | --- | 6.9 J | [153] | 4.9 J | [83] |
| Naphthalene | 30 | --- | --- | --- | 0.1 J | 4 | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 1.0 J | 20 | 0.7 | 27 | 0.09 J | 5 | 12 J | [267] | 8.4 | [142] |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 3.1 J | 63 | 2.3 | 87 | 0.2 J | 10 | 29 J | 644 | 20 | 339 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 49000 J | --- | 26400 J | --- | 19100 | --- | 45000 BJ | --- | 59000 B | --- |
| % TOC | NA | --- | 4.9 J | --- | 2.6 J | --- | 1.9 | --- | 4.5 BJ | --- | 5.9 B | --- |
| Percent solids (%) | NA | --- | 33 | --- | 75 | --- | 68 | --- | 33 | --- | 51 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | [11 ] | --- | [7.8 ] | --- | 0.6 | --- | [166 ] | --- | [125 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 3.4 | --- | 2.1 | --- | 0.2 | --- | 83 | --- | 60 | --- |
| Total SVOCs | NS | --- | 11 | --- | 7.9 | --- | 0.6 | --- | 166 | --- | 125 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.2 | [4] | 0.1 | [4] | 0.01 | 0.5 | 22 | [489] | 16 | [271] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc'd).



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T2C 05/13/2003 12 - 24 in. C mg/Kg | WP-T2C SC ug/gOC | WP-OD1 05/13/2003 0 - 6 in. C mg/Kg | WP-OD1 SC ug/gOC | WP-OD1 05/13/2003 6 - 12 in. C mg/Kg | WP-OD1 SC ug/gOC | WP-OD1 05/13/2003 12 - 19 in. C mg/Kg | WP-OD1 SC ug/gOC | WP-T3A 05/13/2003 0 - 6 in. C mg/Kg | WP-T3A SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | 0.2 J | 4 | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | 0.5 J | 9 | --- | --- | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | 3.0 J | 53 | 0.3 J | 5 | --- | --- | 0.1 J | 2 |
| Benzo(a)anthracene | 12 | --- | --- | --- | 10 DJ | [177] | 1.3 | [21] | --- | --- | 0.5 J | 9 |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | {0.5 } | [45] | {9.1 J} | [161] | {1.1 J} | [18] | --- | --- | {0.6 J} | [11] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | {11 DJ} | [195] | 1.5 J | [25] | --- | --- | 0.9 J | [16] |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | 3.3 J | 58 | 0.5 J | 9 | --- | --- | 0.3 J | 5 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 3.1 J | [55] | 0.4 J | [7] | --- | --- | 0.3 J | [6] |
| Carbazole | NS | NS | --- | --- | 0.1 J | 2 | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | --- | --- | 6.8 J | [120] | 1.1 | [18] | --- | --- | 0.5 J | [9] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.1 J | 2 |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | 1.1 J | [19] | 0.2 J | 3 | --- | --- | 0.1 J | 2 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | 0.2 J | 3 | --- | --- | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | --- | --- | 16 DJ | 283 | 2.0 | 33 | --- | --- | 0.8 J | 14 |
| Fluorene | 8 | --- | --- | --- | 0.4 J | 7 | 0.07 J | 1 | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | 3.8 J | [67] | 0.5 J | [9] | --- | --- | 0.3 J | [5] |
| Naphthalene | 30 | --- | --- | --- | 0.3 J | 5 | --- | --- | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | --- | --- | 5.5 J | 97 | 0.4 J | 7 | --- | --- | 0.3 J | 5 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | --- | --- | 15 DJ | 265 | 2.2 | 36 | --- | --- | 0.8 J | 14 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 11000 B | --- | 56500 BJ | --- | 60700 B | --- | 37600 B | --- | 56400 J | --- |
| % TOC | NA | --- | 1.1 B | --- | 5.7 BJ | --- | 6.1 B | --- | 3.8 B | --- | 5.6 J | --- |
| Percent solids (%) | NA | --- | 70 | --- | 27 | --- | 51 | --- | 53 | --- | 30 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 0.5 | --- | [37 ] | --- | [12 ] | --- | --- | --- | [5.5 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 0.5 | --- | 24 | --- | 6.1 | --- | --- | --- | 3.3 | --- |
| Total SVOCs | NS | --- | 0.5 | --- | 37 | --- | 12 | --- | --- | --- | 5.7 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.5 | [45] | 11 | [195] | 1.6 | [26] | --- | --- | 0.9 | [16] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, — - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc).



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T3A DUP 05/13/2003 0 - 6 in. C mg/Kg | SC ug/gOC | WP-T3A 05/13/2003 6 - 12 in. C mg/Kg | SC ug/gOC | WP-T3A 05/13/2003 12 - 24 in. C mg/Kg | SC ug/gOC | WP-T3B 05/13/2003 0 - 6 in. C mg/Kg | SC ug/gOC | WP-T3B 05/13/2003 6 - 12 in. C mg/Kg | SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | 0.07 J | 1 | --- | --- | --- | --- |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | NS | --- | --- | --- | --- | --- | 0.1 J | 2 | --- | --- | --- | --- |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | 0.2 J | 3 | --- | --- | --- | --- |
| Anthracene | 107 | --- | 0.2 J | 2 | 0.2 J | 3 | 1.6 | 36 | --- | --- | 0.09 J | 2 |
| Benzo(a)anthracene | 12 | --- | 0.6 J | 9 | 0.9 J | [15] | 2.3 | [52] | 0.4 J | 11 | 0.5 J | [13] |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | 0.4 J | [6] | {0.8 J} | [15] | {2.1 } | [48] | 0.3 J | [9] | {0.5 J} | [13] |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 1.0 J | [14] | 1.1 J | [19] | 2.9 | [66] | 0.8 J | [19] | 0.7 J | [18] |
| Benzo(ghi)perylene | NS | 3.8 (1) | 0.3 J | 4 | 0.3 J | 6 | 0.5 J | 11 | 0.3 J | 7 | 0.2 J | 5 |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | 0.3 J | [4] | 0.4 J | [7] | 1.0 | [21] | 0.2 J | [5] | 0.2 J | [6] |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | 0.5 J | [8] | 0.8 J | [13] | 2.4 | [54] | 0.5 J | [14] | 0.5 J | [13] |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octyl phthalate | NS | --- | 0.2 J | 2 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | 0.2 J | 3 | 0.2 J | 5 | --- | --- | 0.1 J | 3 |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | 0.09 J | 2 | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | 0.9 J | 13 | 1.1 J | 19 | 4.9 | 111 | 0.8 J | 19 | 0.8 J | 20 |
| Fluorene | 8 | --- | --- | --- | --- | --- | 0.2 J | 4 | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | 0.3 J | [4] | 0.4 J | [7] | 0.6 | [14] | 0.3 J | [7] | 0.2 J | [6] |
| Naphthalene | 30 | --- | --- | --- | --- | --- | 0.2 J | 5 | --- | --- | --- | --- |
| Phenanthrene | 120 | --- | 0.4 J | 5 | 0.5 J | 8 | 2.0 | 45 | 0.3 J | 8 | 0.2 J | 4 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | 961 | --- | 1.0 J | 14 | 1.4 J | 24 | 4.0 | 90 | 0.8 J | 21 | 0.8 J | 22 |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 69300 BJ | --- | 57700 J | --- | 44200 J | --- | 39600 BJ | --- | 38000 BJ | --- |
| % TOC | NA | --- | 6.9 BJ | --- | 5.8 J | --- | 4.4 J | --- | 4.0 BJ | --- | 3.8 BJ | --- |
| Percent solids (%) | NA | --- | 29 | --- | 36 | --- | 54 | --- | 29 | --- | 46 | --- |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | 3.5 | --- | [8.0 ] | --- | [25 ] | --- | [4.7 ] | --- | [4.7 ] | --- |
| Total Carcinogenic PAHs | NS | NS | 1.1 | --- | 4.5 | --- | 12 | --- | 2.5 | --- | 2.7 | --- |
| Total SVOCs | NS | --- | 3.5 | --- | 8.0 | --- | 25 | --- | 4.7 | --- | 4.7 | --- |
| BaP Equivalents | 1.3 (H) | NS | 0.07 | 1 | 1.2 | [21] | 2.9 | [66] | 0.5 | [13] | 0.7 | [18] |

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.)



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# Table 3-2
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

| Sample ID / Sample Date / Compound | NYS Sediment Values ug/g OC | Ecological Screening Values mg/kg | WP-T3B 05/13/2003 12 - 24 in. C mg/Kg | WP-T3B SC ug/gOC | WP-T3C 05/13/2003 0 - 6 in. C mg/Kg | WP-T3C SC ug/gOC | WP-T3C 05/13/2003 6 - 11 in. C mg/Kg | WP-T3C SC ug/gOC | C mg/Kg | SC ug/gOC | C mg/Kg | SC ug/gOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | | | | |
| 1,3-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | | | | |
| 1,4-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | --- | --- | | | | |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | | | | |
| 4-Chloroaniline | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| 4-Methylphenol | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| Acenaphthene | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| Acenaphthylene | NS | --- | --- | --- | --- | --- | 0.09 J | 1 | | | | |
| Anthracene | 107 | --- | --- | --- | --- | --- | 0.2 J | 2 | | | | |
| Benzo(a)anthracene | 12 | --- | --- | --- | 0.3 J | 4 | 0.7 J | 10 | | | | |
| Benzo[a]pyrene | 1.3 (H) | 0.44 (1) | --- | --- | {0.5 J} | [6] | {0.7 J} | [10] | | | | |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 0.5 J | [7] | 1.0 J | [15] | | | | |
| Benzo(ghi)perylene | NS | 3.8 (1) | --- | --- | 0.1 J | 2 | 0.2 J | 4 | | | | |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | 0.2 J | [3] | 0.3 J | [5] | | | | |
| Carbazole | NS | NS | --- | --- | --- | --- | --- | --- | | | | |
| Chrysene | 1.3 (H) | --- | --- | --- | 0.4 J | [5] | 0.6 J | [10] | | | | |
| Di-n-butyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| Di-n-octyl phthalate | NS | --- | --- | --- | --- | --- | --- | --- | | | | |
| Dibenzo(a,h)anthracene | 15 | --- | --- | --- | --- | --- | 0.1 J | 1 | | | | |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | --- | --- | | | | |
| Fluoranthene | 1020 | --- | --- | --- | 0.5 J | 7 | 1.0 J | 15 | | | | |
| Fluorene | 8 | --- | --- | --- | --- | --- | --- | --- | | | | |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | 0.1 J | [2] | 0.3 J | [4] | | | | |
| Naphthalene | 30 | --- | --- | --- | --- | --- | 0.1 J | 2 | | | | |
| Phenanthrene | 120 | --- | --- | --- | 0.2 J | 2 | 0.4 J | 6 | | | | |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | --- | --- | | | | |
| Pyrene | 961 | --- | --- | --- | 0.6 J | 8 | 1.2 J | 19 | | | | |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | --- | --- | --- | --- | --- | --- | | | | |
| | | | | | | | | | | | | |
| Total organic carbon (mg/Kg) | NA | --- | 19700 B | --- | 72000 J | --- | 63800 J | --- | | | | |
| % TOC | NA | --- | 2.0 B | --- | 7.2 J | --- | 6.4 J | --- | | | | |
| Percent solids (%) | NA | --- | 54 | --- | 31 | --- | 45 | --- | | | | |
| | | | | | | | | | | | | |
| Total PAHs (mg/Kg) | 4.0 (L) | 85 (1) | --- | --- | 3.2 | --- | [6.7] | --- | | | | |
| Total Carcinogenic PAHs | NS | NS | --- | --- | 1.9 | --- | 3.6 | --- | | | | |
| Total SVOCs | NS | --- | --- | --- | 3.2 | --- | 6.7 | --- | | | | |
| BaP Equivalents | 1.3 (H) | NS | --- | --- | 0.5 | [7] | 1.0 | [16] | | | | |

NOTES: J - estimated value, NS - no screening value, — - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).



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O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Compound / Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-LK1 | WP-LK2 | WP-LK3 | WP-LK4 | WP-LK5 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 | 05/12/2003 |
| Sample Depth | | | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Aluminum | NS | 73200 (1) | 19200 J | 14500 J | 14300 J | 16000 J | 17600 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | 4.9 BJ | 4 BJ | (6.3 BJ) | 4.7 BJ | 4.7 BJ |
| Barium | NS | NS | 120 BJ | 88 BJ | 92 BJ | 98 BJ | 100 BJ |
| Beryllium | NS | NS | 0.86 BJ | 0.67 BJ | 0.64 BJ | 0.7 BJ | 0.81 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | (1.3 BJ) | (1.4 BJ) | (0.8 BJ) | (0.93 BJ) | (1.2 BJ) |
| Calcium | NS | NS | 10200 J | 11900 J | 18800 J | 11600 J | 11100 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (27 J) | 26 J | 21 J | 22 J | 24 J |
| Cobalt | NS | NS | 14 BJ | 11 BJ | 8.8 BJ | 11 BJ | 13 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (51 J) | (90 J) | (90 J) | (83 J) | (64 J) |
| Iron | 4% (P) | 2% (P) | (3.3 J) | (3.2 J) | (2.7 J) | (3.0 J) | (3.3 J) |
| Lead | 110.0 (L) | 31.0 (P) | (66 J) | (187 J*) | (79 J) | (99 J) | (126 J*) |
| Magnesium | NS | NS | 8570 J | 6950 BJ | 8150 J | 7310 J | 8700 J |
| Manganese | 1100 (L) | 460 (P) | (707 J) | (579 J) | (551 J) | (1000 J) | (637 J) |
| Mercury | 1.3 (L) | 0.15 (L) | (0.31 J) | (0.57 J) | (0.29 J) | (0.33 J) | (0.3 J) |
| Nickel | 50 (L) | 16 (P) | (33 BJ) | (29 BJ) | (26 BJ) | (26 BJ) | (30 J) |
| Potassium | NS | NS | 1740 BJ | 1510 BJ | 1420 BJ | 1350 BJ | 1360 BJ |
| Selenium | NS | NS | --- | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 330 BJ | 386 BJ | 357 BJ | 212 BJ | 328 BJ |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 29 BJ | 38 BJ | 29 BJ | 22 BJ | 26 BJ |
| Zinc | 270 (L) | 120 (P/L) | (221 J) | (359 J*) | (224 J) | (228 J) | (230 J) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | --- | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 18 | 12 | 14 | 25 | 36 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 10 J | 9.2 J | 6.3 J | 4.2 J | 4.6 J |
| Total organic carbon (mg/Kg) | NS | NS | 102000 J | 91600 J | 63300 J | 42100 J | 46100 J |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.



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# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Compound / Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-LK01-A | WP-LK01-A | WP-LK01-A | WP-LK01-B | WP-LK01-B |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 | 05/10/2001 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 19 - 25 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Aluminum | NS | 73200 (1) | 14500 J | 11400 J | 13700 J | 14200 J | 11700 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | (3.2 JN) | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | 4.6 J | (6.6 J) | 5 J | 5 J | 5.2 J |
| Barium | NS | NS | 94 J | 74 J | 82 J | 90 J | 73 J |
| Beryllium | NS | NS | 0.57 J | 0.53 J | 0.62 J | 0.53 J | 0.42 J |
| Cadmium | 9.0 (P) | 0.6 (P) | --- | 0.16 J | 0.34 J | --- | --- |
| Calcium | NS | NS | 7600 J | 6330 J | 9540 J | 7030 J | 5980 J |
| Chromium** | 110.0 (P) | 26.0 (P) | 18 J | 15 J | 17 J | 18 J | 15 J |
| Cobalt | NS | NS | 8.6 J | 9.3 J | 9.2 J | 7.9 J | 6.5 J |
| Copper | 110.0 (P) | 16.0 (P) | (37 J) | (31 J) | (38 J) | (34 J) | (30 J) |
| Iron | 4% (P) | 2% (P) | (3.0 J) | (2.4 J) | (2.9 J) | (2.7 J) | (2.4 J) |
| Lead | 110.0 (L) | 31.0 (P) | (49 J) | (42 J) | (62 J) | (46 J) | (41 J) |
| Magnesium | NS | NS | 7130 J | 5540 J | 6390 J | 6850 J | 5720 J |
| Manganese | 1100 (L) | 460 (P) | (594 J) | (566 J) | (636 J) | 460 J | (541 J) |
| Mercury | 1.3 (L) | 0.15 (L) | --- | --- | (0.2 J) | --- | --- |
| Nickel | 50 (L) | 16 (P) | (25 J) | (22 J) | (23 J) | (24 J) | (22 J) |
| Potassium | NS | NS | 1090 J | 852 J | 932 J | 1110 J | 888 J |
| Selenium | NS | NS | 2.5 J | 1.2 J | 1.4 J | --- | 1.7 J |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 124 J | 82 J | 67 J | 145 J | 112 J |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 20 J | 19 J | 18 J | 19 J | 20 J |
| Zinc | 270 (L) | 120 (P/L) | (204 J) | (136 J) | (145 J) | (168 J) | (141 J) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | --- | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 22 | 35 | 46 | 25 | 32 |
| pH | NA | NA | 7.3 | 7.5 | 7.9 | 7.6 | 7.7 |
| % TOC | NS | NS | 10 | 4.7 | 3.4 | 6.7 | 6.2 |
| Total organic carbon (mg/Kg) | NS | NS | 99100 | 47000 | 33800 | 66800 | 62000 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.



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# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Compound | Sample ID / Sample Date / Sample Depth / Units | Sediment Severe Effect Level (SEL) mg/Kg | Sediment Lowest Effect Level (LEL) mg/Kg | WP-LK01-B DUP 05/10/2001 6 - 12 in. mg/Kg | WP-LK01-B 05/10/2001 25 - 31 in. mg/Kg | WP-LK01-C 05/10/2001 0 - 6 in. mg/Kg | WP-LK01-C 05/10/2001 6 - 12 in. mg/Kg | WP-LK01-C 05/10/2001 26 - 32 in. mg/Kg |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | NS | 73200 (1) | 13300 J | 13100 J | 14600 J | 13200 J | 12900 J |
| Antimony | | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | --- |
| Arsenic | | 33.0 (P) | 6.0 (P) | 4.3 J | 4.9 J | 4.1 J | 4.8 J | 4.3 J |
| Barium | | NS | NS | 83 J | 80 J | 90 J | 81 J | 78 J |
| Beryllium | | NS | NS | 0.53 J | 0.55 J | 0.57 J | 0.55 J | 0.53 J |
| Cadmium | | 9.0 (P) | 0.6 (P) | --- | 0.36 J | --- | 0.2 J | 0.31 J |
| Calcium | | NS | NS | 6640 J | 5350 J | 7240 J | 6750 J | 9730 J |
| Chromium** | | 110.0 (P) | 26.0 (P) | 17 J | 17 J | 18 J | 17 J | 16 J |
| Cobalt | | NS | NS | 7.6 J | 8.9 J | 8.3 J | 8.5 J | 8.5 J |
| Copper | | 110.0 (P) | 16.0 (P) | (34 J) | (37 J) | (37 J) | (34 J) | (36 J) |
| Iron | | 4% (P) | 2% (P) | (2.7 J) | (2.8 J) | (2.9 J) | (2.7 J) | (2.8 J) |
| Lead | | 110.0 (L) | 31.0 (P) | (46 J) | (59 J) | (47 J) | (44 J) | (59 J) |
| Magnesium | | NS | NS | 6440 J | 5800 J | 6990 J | 6410 J | 6190 J |
| Manganese | | 1100 (L) | 460 (P) | (640 J) | (616 J) | (569 J) | (613 J) | (666 J) |
| Mercury | | 1.3 (L) | 0.15 (L) | --- | (0.21 J) | --- | --- | --- |
| Nickel | | 50 (L) | 16 (P) | (24 J) | (22 J) | (24 J) | (24 J) | (22 J) |
| Potassium | | NS | NS | 956 J | 888 J | 1140 J | 996 J | 890 J |
| Selenium | | NS | NS | 2.1 J | 1.6 J | --- | 2 J | 1.5 J |
| Silver | | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | | NS | NS | 108 J | 62 J | 148 J | 97 J | 68 J |
| Thallium | | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | | NS | NS | 22 J | 18 J | 19 J | 22 J | 18 J |
| Zinc | | 270 (L) | 120 (P/L) | (162 J) | (136 J) | (162 J) | (135 J) | (132 J) |
| Cyanide, total | | NS | 0.1 (Eisler 1991) | --- | --- | (3.2 J) | --- | --- |
| Cyanide, amenable to chlorination | | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | | NA | NA | 34 | 48 | 29 | 36 | 50 |
| pH | | NA | NA | 7.7 | 8.1 | 7.5 | 7.8 | 7.6 |
| % TOC | | NS | NS | 5.5 | 5.5 | 5.9 | 5.6 | 3.9 |
| Total organic carbon (mg/Kg) | | NS | NS | 55200 | 54700 | 58700 | 55500 | 38800 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-01-A | WP-04.45-9 | WP-09A | WP-11A | LG-OUT |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 | 05/09/2001 |
| Sample Depth | | | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 10000 | 10700 | 7850 | 4650 | 7350 |
| Antimony | 25.0 (L) | 2.0 (L) | 0.52 JN | 1.2 JN | 0.51 JN | 0.63 JN | (2.3 JN) |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.5 ) | (8.9 ) | (19 ) | (10 ) | (9.9 ) |
| Barium | NS | NS | 54 | 79 | 61 | 28 J | 80 |
| Beryllium | NS | NS | 0.45 J | 0.43 J | 0.45 J | 0.27 J | 0.36 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (1 J) | (1.3 J) | 0.34 J | 0.54 J | (2.4 ) |
| Calcium | NS | NS | 24900 | 4140 | 6120 | 1460 | 10800 |
| Chromium** | 110.0 (P) | 26.0 (P) | 19 | 26 | 25 J | 26 J | (29 ) |
| Cobalt | NS | NS | 7.6 J | 7.9 J | 7.9 J | 5.3 J | 6.5 J |
| Copper | 110.0 (P) | 16.0 (P) | (48 ) | (91 ) | (41 ) | (172 *) | (88 ) |
| Iron | 4% (P) | 2% (P) | (3.4 ) | (4.3 *) | (2.8 ) | 1.4 | (3.1 ) |
| Lead | 110.0 (L) | 31.0 (P) | (94 ) | (152 *) | (73 ) | (225 *) | (235 *) |
| Magnesium | NS | NS | 18900 | 7180 | 4480 | 1960 | 6490 |
| Manganese | 1100 (L) | 460 (P) | (912 J) | (1790 J*) | (902 JN) | 440 JN | (566 J) |
| Mercury | 1.3 (L) | 0.15 (L) | (0.51 ) | 0.15 J | (0.17 J) | (0.44 ) | (1.1 ) |
| Nickel | 50 (L) | 16 (P) | (22 ) | (26 ) | (17 ) | 13 | (34 ) |
| Potassium | NS | NS | 636 J | 709 J | 759 J | 297 J | 617 J |
| Selenium | NS | NS | 0.94 J | 1.9 | 1.5 | 1.2 J | 1.1 J |
| Silver | 2.2 (L) | 1.0 (L) | --- | 0.27 J | --- | --- | --- |
| Sodium | NS | NS | 69 J | 81 J | 99 J | 84 J | 90 J |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 14 | 18 | 24 | 10 J | 17 |
| Zinc | 270 (L) | 120 (P/L) | (163 ) | (210 ) | 78 | (196 ) | (285 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | --- | (1.1 ) | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 81 | 73 | 66 | 65 | 77 |
| pH | NA | NA | 8.2 | 8.1 | 8.1 | 8.4 | 8.3 |
| % TOC | NS | NS | 1.9 | 2.2 | 6.6 | 7.7 | 5.6 |
| Total organic carbon (mg/Kg) | NS | NS | 18600 | 22100 | 65500 | 76500 | 56000 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.



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# Table 3-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-LGOUT2 | WP-MW4 | WP-MW4 DUP | WP-16 | WP-18 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/09/2001 | 05/09/2001 |
| Sample Depth | | | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 10100 | 12000 | 12600 | 10800 | 9880 |
| Antimony | 25.0 (L) | 2.0 (L) | 0.9 BNJ | 0.87 BNJ | (25 NJ) | 0.87 JN | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.6 ) | (6.3 ) | (8.4 ) | (7 ) | 5 |
| Barium | NS | NS | 118 | 62 | 74 | 57 | 31 J |
| Beryllium | NS | NS | 0.45 B | 0.48 B | 0.52 B | 0.43 J | 0.48 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (1.7 ) | (1.2 B) | (1.2 B) | (1.9 ) | 0.2 J |
| Calcium | NS | NS | 13000 | 5390 | 9830 | 2130 | 2500 |
| Chromium** | 110.0 (P) | 26.0 (P) | 23 | 18 | 17 | 17 | 17 |
| Cobalt | NS | NS | 7.9 B | 8.4 B | 9.5 B | 7.3 J | 9 J |
| Copper | 110.0 (P) | 16.0 (P) | (63 ) | (53 ) | (62 ) | (61 ) | 16 |
| Iron | 4% (P) | 2% (P) | (3.4 ) | (3.6 ) | (4.1 *) | (3.3 ) | (2.7 ) |
| Lead | 110.0 (L) | 31.0 (P) | (141 *) | (130 *) | (1450 *) | (67 ) | 24 |
| Magnesium | NS | NS | 7210 | 7290 | 7330 | 6880 | 4830 |
| Manganese | 1100 (L) | 460 (P) | 345 | (541 ) | (579 ) | (489 J) | 293 J |
| Mercury | 1.3 (L) | 0.15 (L) | (0.34 ) | (0.16 ) | 0.14 | (0.17 J) | 0.15 J |
| Nickel | 50 (L) | 16 (P) | (56 *) | (25 ) | (26 ) | (23 ) | (21 ) |
| Potassium | NS | NS | 861 B | 817 B | 710 B | 748 J | 1180 J |
| Selenium | NS | NS | --- | --- | --- | 1 J | 1 J |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 99 B | 83 B | 74 B | 51 J | 88 J |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 20 | 17 | 18 | 16 | 16 |
| Zinc | 270 (L) | 120 (P/L) | (262 ) | (231 ) | (246 ) | (309 *) | 74 |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (0.33 BJN) | (0.34 BJN) | (0.35 BJN) | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 75 | 81 | 79 | 79 | 68 |
| pH | NA | NA | --- | --- | --- | 8.2 | 7.5 |
| % TOC | NS | NS | 1.2 J | 2.5 | 1.2 | 0.9 | 2.3 |
| Total organic carbon (mg/Kg) | NS | NS | 12400 J | 25400 | 12100 | 8770 | 23400 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Compound / Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-18 | WP-M2 | WP-M2 | WP-M2 | WP-M3 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/09/2001 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | | | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 17 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Aluminum | NS | 73200 (1) | 10100 | 15400 J | 10600 | 10900 | 9500 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | 1.7 BNJ | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | 5.6 | (6.6 BJ*) | (15 J) | (14 J) | 5.5 J* |
| Barium | NS | NS | 34 J | 93 BJ | 46 B | 37 B | 53 BJ |
| Beryllium | NS | NS | 0.47 J | 0.77 BJ | 0.45 B | 0.45 B | 0.5 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | 0.098 J | (1.8 BJ) | (2.6 ) | (1.2 B) | (1.4 BJ) |
| Calcium | NS | NS | 2900 | 9540 J | 2350 | 1170 B | 17000 J |
| Chromium** | 110.0 (P) | 26.0 (P) | 16 | (34 J) | (482 *) | (465 *) | (27 J) |
| Cobalt | NS | NS | 9 J | 14 BJ | 10 B | 9.4 B | 10 BJ |
| Copper | 110.0 (P) | 16.0 (P) | 16 | (58 J) | (71 ) | (51 ) | (77 J) |
| Iron | 4% (P) | 2% (P) | (2.7 ) | (3.6 J) | (2.6 ) | (2.8 ) | (2.3 J) |
| Lead | 110.0 (L) | 31.0 (P) | 20 | (129 J*) | (210 *) | (174 *) | (182 J*) |
| Magnesium | NS | NS | 4960 | 8490 J | 5830 | 5670 | 11400 J |
| Manganese | 1100 (L) | 460 (P) | 244 J | (874 J) | 324 | 285 | (527 J) |
| Mercury | 1.3 (L) | 0.15 (L) | (0.44 J) | (0.83 J) | (34 *) | (68 *) | (0.73 J) |
| Nickel | 50 (L) | 16 (P) | (20 ) | (32 J) | (24 ) | (22 ) | (24 J) |
| Potassium | NS | NS | 1140 J | 1150 BJ | 766 B | 647 B | 821 BJ |
| Selenium | NS | NS | 0.94 J | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 79 J | 159 BJ | --- | --- | 138 BJ |
| Thallium | NS | NS | --- | --- | 1.1 B | 0.85 B | --- |
| Vanadium | NS | NS | 16 | 24 BJ | 18 | 13 | 22 BJ |
| Zinc | 270 (L) | 120 (P/L) | 69 | (325 J*) | (396 *) | (195 ) | (294 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | (1.3 BJN) | (5.1 JN) | (1.7 JN) | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 64 | 28 | 66 | 79 | 39 |
| pH | NA | NA | 7.4 | --- | --- | --- | --- |
| % TOC | NS | NS | 2.4 | 1.1 e BJ | 1.1 e BJ | 1.1 BJ | 6.4 BJ |
| Total organic carbon (mg/Kg) | NS | NS | 24400 | 11300 e BJ | 11300 e BJ | 11300 BJ | 63800 BJ |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.



FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg
DBF File: Q:\10653_NYSDEC\27258_ThreeStar\CreekTables.dbf
File Number: 10653.27258
Date Printed: 03/11/2005 09:45:02

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# Table 3-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-M3 | WP-DOT | WP-DOT | WP-DOT | WP-29A |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | | | 6 - 12 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 10900 | 14400 | 12400 | 11700 | 9600 |
| Antimony | 25.0 (L) | 2.0 (L) | (92 NJ*) | (5.4 BNJ) | (27 NJ*) | --- | (13 BNJ) |
| Arsenic | 33.0 (P) | 6.0 (P) | (33 J) | (9.5 J) | (103 J*) | (35 J*) | 5.7 J |
| Barium | NS | NS | 63 | 33 B | 68 | 54 B | 80 |
| Beryllium | NS | NS | 0.6 B | 0.53 B | 0.61 B | 0.5 B | 0.43 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (23 *) | (4.2 ) | (53 *) | (7.4 ) | (3.6 ) |
| Calcium | NS | NS | 13100 | 3820 | 4810 | 2290 | 4220 |
| Chromium** | 110.0 (P) | 26.0 (P) | (280 *) | (50 ) | (2270 *) | (2130 *) | (55 ) |
| Cobalt | NS | NS | 11 B | 13 B | 9.7 B | 9.9 B | 12 B |
| Copper | 110.0 (P) | 16.0 (P) | (187 *) | (44 ) | (426 *) | (214 *) | (56 ) |
| Iron | 4% (P) | 2% (P) | (2.5 ) | (3.6 ) | (2.7 ) | (2.7 ) | (2.2 ) |
| Lead | 110.0 (L) | 31.0 (P) | (399 *) | (113 *) | (803 *) | (452 *) | (106 ) |
| Magnesium | NS | NS | 9670 | 8960 | 7060 | 5950 | 5970 |
| Manganese | 1100 (L) | 460 (P) | 418 | 339 | 320 | 229 | 272 |
| Mercury | 1.3 (L) | 0.15 (L) | (27 *) | (0.86 ) | (186 *) | (88 *) | (4.6 *) |
| Nickel | 50 (L) | 16 (P) | (23 ) | (33 ) | (22 ) | (22 ) | (27 ) |
| Potassium | NS | NS | 1000 B | 724 B | 937 B | 844 B | 705 B |
| Selenium | NS | NS | 1.2 B | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | --- | --- | --- | --- | --- |
| Thallium | NS | NS | --- | 1 B | 1.2 B | --- | 1.2 B |
| Vanadium | NS | NS | 16 | 18 | 16 B | 15 | 15 B |
| Zinc | 270 (L) | 120 (P/L) | (1780 *) | (732 *) | (4650 *) | (1210 *) | (466 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (16 JN) | (0.52 BJN) | (26 JN) | (2.7 JN) | (0.32 BJN) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 65 | 64 | 61 | 73 | 59 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 6.4 e BJ | 1.3 BJ | 1.3 e BJ | 1.3 e BJ | 6.3 e BJ |
| Total organic carbon (mg/Kg) | NS | NS | 63800 e BJ | 13400 BJ | 13400 e BJ | 13400 e BJ | 62900 e BJ |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Compound | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-29A | WP-29A DUP | WP-29A | WP-29 | WP-29 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/09/2001 | 05/09/2001 |
| Sample Depth | | | 6 - 12 in. | 6 - 12 in. | 12 - 17 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Aluminum | NS | 73200 (1) | 13000 | 11600 | 18700 | 11800 | 10500 |
| Antimony | 25.0 (L) | 2.0 (L) | (91 NJ*) | (105 NJ*) | --- | (159 JN*) | (3 JN) |
| Arsenic | 33.0 (P) | 6.0 (P) | (162 J*) | (114 *) | (31 J) | (20 ) | (27 ) |
| Barium | NS | NS | 82 | 70 B | 44 B | 69 J | 31 J |
| Beryllium | NS | NS | 0.69 B | 0.6 B | 0.73 B | 0.53 J | 0.44 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (79 *) | (68 *) | (7 ) | (27 *) | (32 *) |
| Calcium | NS | NS | 6140 | 5380 | 2280 | 5840 | 2360 |
| Chromium** | 110.0 (P) | 26.0 (P) | (2000 *) | (1490 *) | (1040 *) | (267 J*) | (620 J*) |
| Cobalt | NS | NS | 10 B | 8.9 B | 13 B | 11 J | 6.6 J |
| Copper | 110.0 (P) | 16.0 (P) | (504 *) | (391 *) | (173 *) | (154 *) | (115 *) |
| Iron | 4% (P) | 2% (P) | (2.7 ) | (2.4 ) | (4.2 *) | (2.7 ) | (2.6 ) |
| Lead | 110.0 (L) | 31.0 (P) | (1050 *) | (859 *) | (348 *) | (376 *) | (321 *) |
| Magnesium | NS | NS | 6910 | 6410 | 10600 | 7320 | 5570 |
| Manganese | 1100 (L) | 460 (P) | 369 | 316 | 254 | 366 JN | 208 JN |
| Mercury | 1.3 (L) | 0.15 (L) | (144 *) | (130 J*) | (95 *) | (32 *) | (87 *) |
| Nickel | 50 (L) | 16 (P) | (23 ) | (20 ) | (37 ) | (25 ) | (18 ) |
| Potassium | NS | NS | 1080 B | 901 B | 883 B | 1000 J | 679 J |
| Selenium | NS | NS | --- | 1.3 B | --- | 1.4 J | 0.49 J |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | --- | --- | --- | 112 J | 48 J |
| Thallium | NS | NS | 1.4 B | --- | --- | --- | --- |
| Vanadium | NS | NS | 17 B | 15 B | 24 | 16 J | 12 J |
| Zinc | 270 (L) | 120 (P/L) | (6500 *) | (5410 *) | (926 *) | (1980 *) | (2610 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (34 JN) | (34 JN) | (6.2 JN) | (28 ) | (6 ) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 53 | 55 | 60 | 56 | 62 |
| pH | NA | NA | --- | --- | --- | 8.4 | 7.8 |
| % TOC | NS | NS | 6.3 BJ | 7 BJ | 6.3 e BJ | 2.2 | 0.7 |
| Total organic carbon (mg/Kg) | NS | NS | 62900 BJ | 70100 BJ | 62900 e BJ | 21700 | 7330 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-29 | WP-CKOUT | WP-OD3 | WP-OD3 | WP-PL |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/09/2001 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/08/2001 |
| Sample Depth | | | 12 - 18 in. | 0 - 6 in. | 0 - 6 in. | 6 - 12 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 12800 | 11400 | 9310 | 11300 | 12500 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | 1.7 BNJ | 1.7 BNJ | (2.9 BNJ) | (6.3 JN) |
| Arsenic | 33.0 (P) | 6.0 (P) | (44 *) | (18 ) | (6.4 ) | (7 ) | (16 J) |
| Barium | NS | NS | 81 | 130 | 58 | 58 B | 74 J |
| Beryllium | NS | NS | 0.6 J | 0.59 B | 0.41 B | 0.54 B | 0.63 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (9.9 *) | (1.8 ) | (1.7 ) | (2.3 ) | (8.5 J) |
| Calcium | NS | NS | 3900 | 3200 | 1780 | 1880 | 6040 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (4120 J*) | (64 ) | (48 ) | (89 ) | (544 J*) |
| Cobalt | NS | NS | 9.4 J | 12 B | 8.2 B | 9.7 B | 13 J |
| Copper | 110.0 (P) | 16.0 (P) | (462 *) | (154 *) | (68 ) | (104 ) | (183 J*) |
| Iron | 4% (P) | 2% (P) | (3.0 ) | (3.0 ) | (2.5 ) | (2.3 ) | (2.8 J) |
| Lead | 110.0 (L) | 31.0 (P) | (637 *) | (182 *) | (130 *) | (243 *) | (279 J*) |
| Magnesium | NS | NS | 6190 | 4860 | 5110 | 5250 | 5700 J |
| Manganese | 1100 (L) | 460 (P) | 322 JN | (2390 *) | (690 ) | 171 | 386 JN |
| Mercury | 1.3 (L) | 0.15 (L) | (118 *) | (9.6 J*) | (1.2 J) | (2.4 J*) | (17 J*) |
| Nickel | 50 (L) | 16 (P) | (21 ) | (25 ) | (19 ) | (22 ) | (41 J) |
| Potassium | NS | NS | 1180 J | 888 B | 599 B | 887 B | 1330 J |
| Selenium | NS | NS | 2.1 | 1.8 | --- | --- | 3.3 J |
| Silver | 2.2 (L) | 1.0 (L) | 0.25 J | --- | --- | --- | (1.2 J) |
| Sodium | NS | NS | 98 J | --- | --- | --- | 189 J |
| Thallium | NS | NS | --- | 2.2 B | 1.4 B | 1.5 B | --- |
| Vanadium | NS | NS | 16 J | 19 | 13 B | 15 | 21 J |
| Zinc | 270 (L) | 120 (P/L) | (1330 *) | (836 *) | (244 ) | (307 *) | (825 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (6.1 ) | (0.27 BJN) | --- | (0.28 BJN) | (7.3 J) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | 2.2 |
| Percent solids (%) | NA | NA | 58 | 70 | 72 | 68 | 26 |
| pH | NA | NA | 7.6 | --- | --- | --- | 7.2 |
| % TOC | NS | NS | 11 | 3.6 | 3.1 e | 3.1 | 12 |
| Total organic carbon (mg/Kg) | NS | NS | 105000 | 35900 | 30500 e | 30500 | 115000 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e.- estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-PL DUP | WP-PL | WP-PL1 | WP-PL1 | WP-PL1 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/08/2001 | 05/08/2001 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 11 in. | 0 - 6 in. | 6 - 12 in. | 12 - 18 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 11900 J | 14000 J | 16000 J | 16700 J | 16600 |
| Antimony | 25.0 (L) | 2.0 (L) | (4.5 JN) | (3.4 JN) | (7.1 BNJ) | (4.7 BNJ) | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | (9.6 J) | (105 *) | (13 J) | (28 J) | 4.5 |
| Barium | NS | NS | 70 J | 87 J | 90 BJ | 106 J | 105 |
| Beryllium | NS | NS | 0.59 J | 0.67 J | 0.79 BJ | 0.83 BJ | 0.8 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (6.4 J) | (19 *) | (4.6 J) | (2.3 BJ) | 0.4 B |
| Calcium | NS | NS | 5930 J | 4230 | 7220 J | 5050 J | 4340 |
| Chromium** | 110.0 (P) | 26.0 (P) | (412 J*) | (3760 J*) | (335 J*) | (474 J*) | 24 |
| Cobalt | NS | NS | 12 J | 9.6 J | 14 BJ | 12 BJ | 12 B |
| Copper | 110.0 (P) | 16.0 (P) | (158 J*) | (345 *) | (109 J) | (104 J) | (24 ) |
| Iron | 4% (P) | 2% (P) | (2.6 J) | (2.8 ) | (3.0 J) | (2.6 J) | (2.4 ) |
| Lead | 110.0 (L) | 31.0 (P) | (281 J*) | (629 *) | (181 J*) | (213 J*) | 19 |
| Magnesium | NS | NS | 5350 J | 4990 | 6570 J | 5670 J | 5800 |
| Manganese | 1100 (L) | 460 (P) | 408 JN | 354 JN | 456 J | 276 J | 299 |
| Mercury | 1.3 (L) | 0.15 (L) | (9 J*) | (182 *) | (8.5 J*) | (14 J*) | (0.3 ) |
| Nickel | 50 (L) | 16 (P) | (37 J) | (23 ) | (37 J) | (25 J) | (24 ) |
| Potassium | NS | NS | 1230 J | 1140 J | 1470 BJ | 1170 BJ | 1040 B |
| Selenium | NS | NS | 1.7 J | 3.5 | --- | 1.4 BJ | 1.1 B |
| Silver | 2.2 (L) | 1.0 (L) | (1.1 J) | 0.55 J | --- | --- | --- |
| Sodium | NS | NS | 176 J | 147 J | 185 BJ | 133 BJ | 100 B |
| Thallium | NS | NS | --- | --- | --- | --- | --- |
| Vanadium | NS | NS | 21 J | 17 J | 25 BJ | 20 BJ | 18 |
| Zinc | 270 (L) | 120 (P/L) | (654 J*) | (1820 *) | (501 J*) | (275 J*) | 79 |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | (42 ) | (0.87 BJ) | (0.52 BJ) | (0.65 B) |
| Cyanide, amenable to chlorination | NS | NS | --- | 13 | --- | --- | --- |
| Percent solids (%) | NA | NA | 25 | 40 | 29 | 43 | 56 |
| pH | NA | NA | 7.7 | 7.4 | --- | --- | --- |
| % TOC | NS | NS | 12 | 8.2 | 11 J | 8.1 J | 5.2 |
| Total organic carbon (mg/Kg) | NS | NS | 115000 | 82300 | 108000 J | 80500 J | 51700 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, — - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-PL2 | WP-PL2 | WP-PL2 | WP-PL3 | WP-PL3 |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 15000 J | 15700 J | 13200 J | 15900 J | 17100 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | (7.8 BNJ) | --- | (21 BNJ) |
| Arsenic | 33.0 (P) | 6.0 (P) | 3.4 BJ | 5.6 BJ | (20 J) | 4.3 BJ | (34 J*) |
| Barium | NS | NS | 79 BJ | 86 BJ | 77 BJ | 87 BJ | 103 BJ |
| Beryllium | NS | NS | 0.74 BJ | 0.78 BJ | 0.63 BJ | 0.79 BJ | 0.82 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | (4.7 J) | (5 J) | (4.7 J) | (4.9 J) | (8.9 J) |
| Calcium | NS | NS | 6420 J | 5450 J | 3670 J | 7350 J | 5310 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (204 J*) | (211 J*) | (574 J*) | (244 J*) | (1170 J*) |
| Cobalt | NS | NS | 13 BJ | 13 BJ | 9.7 BJ | 14 BJ | 13 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (162 J*) | (195 J*) | (112 J*) | (146 J*) | (225 J*) |
| Iron | 4% (P) | 2% (P) | (2.6 J) | (2.7 J) | (2.3 J) | (2.8 J) | (2.8 J) |
| Lead | 110.0 (L) | 31.0 (P) | (297 J*) | (405 J*) | (193 J*) | (258 J*) | (435 J*) |
| Magnesium | NS | NS | 6200 J | 6190 J | 4750 J | 6590 J | 5940 J |
| Manganese | 1100 (L) | 460 (P) | 335 J | 301 J | 256 J | 349 J | 335 J |
| Mercury | 1.3 (L) | 0.15 (L) | (8.1 J*) | (8.5 J*) | (20 J*) | (9.5 J*) | (27 J*) |
| Nickel | 50 (L) | 16 (P) | (41 J) | (36 J) | (21 J) | (43 J) | (29 J) |
| Potassium | NS | NS | 1490 BJ | 1350 BJ | 954 BJ | 1540 BJ | 1360 BJ |
| Selenium | NS | NS | --- | 2 BJ | --- | --- | 1.9 BJ |
| Silver | 2.2 (L) | 1.0 (L) | --- | 0.97 BJ | --- | --- | --- |
| Sodium | NS | NS | 221 BJ | 189 BJ | 134 BJ | 249 BJ | 199 BJ |
| Thallium | NS | NS | --- | --- | --- | 3 BJ | --- |
| Vanadium | NS | NS | 22 BJ | 25 BJ | 16 BJ | 25 BJ | 24 BJ |
| Zinc | 270 (L) | 120 (P/L) | (488 J*) | (515 J*) | (431 J*) | (492 J*) | (887 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | (0.49 BJ) | (8 J) | (0.68 BJ) | (11 J) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | 1.7 | --- | --- |
| Percent solids (%) | NA | NA | 26 | 34 | 43 | 24 | 35 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 5.9 BJ | 6.4 BJ | 7.7 BJ | 9.4 BJ | 12 BJ |
| Total organic carbon (mg/Kg) | NS | NS | 58700 BJ | 64200 BJ | 77000 BJ | 93900 BJ | 118000 BJ |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.



FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg
DBF File: Q:\10653_NYSDEC\27258_ThreeStar\CreekTables.dbf
File Number: 10653.27258
Date Printed: 03/11/2005 09:45:02

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# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T1A | WP-T1A | WP-T1A | WP-T1C | WP-T1C |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/14/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 10 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 13700 J | 12900 J | 13500 | 9690 | 11500 |
| Antimony | 25.0 (L) | 2.0 (L) | --- | (3.7 BNJ) | --- | (40 NJ*) | (52 NJ*) |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.8 J) | (8 J) | (13 ) | (6.2 ) | (22 ) |
| Barium | NS | NS | 68 BJ | 69 BJ | 57 B | 42 B | 60 B |
| Beryllium | NS | NS | 0.67 BJ | 0.66 BJ | 0.62 B | 0.46 B | 0.58 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (1.9 BJ) | (4.5 J) | (1.6 B) | (3.3 ) | (13 *) |
| Calcium | NS | NS | 5910 J | 4730 J | 2700 | 4590 | 4060 |
| Chromium** | 110.0 (P) | 26.0 (P) | (53 J) | (148 J*) | (242 *) | (74 ) | (274 *) |
| Cobalt | NS | NS | 17 BJ | 14 BJ | 11 B | 10 B | 10 B |
| Copper | 110.0 (P) | 16.0 (P) | (70 J) | (117 J*) | (48 ) | (61 ) | (132 *) |
| Iron | 4% (P) | 2% (P) | (2.9 J) | (2.6 J) | (2.6 ) | (2.2 ) | (2.5 ) |
| Lead | 110.0 (L) | 31.0 (P) | (87 J) | (210 J*) | (101 ) | (92 ) | (230 *) |
| Magnesium | NS | NS | 6250 J | 5960 J | 5920 | 5590 | 5550 |
| Manganese | 1100 (L) | 460 (P) | (527 J) | 351 J | 284 | 363 | 306 |
| Mercury | 1.3 (L) | 0.15 (L) | (1.7 J*) | (4.6 J*) | (3.1 J*) | (4.8 J*) | (20 J*) |
| Nickel | 50 (L) | 16 (P) | (35 J) | (35 J) | (23 ) | (22 ) | (22 ) |
| Potassium | NS | NS | 1190 BJ | 1090 BJ | 1020 B | 756 B | 916 B |
| Selenium | NS | NS | --- | 1.5 BJ | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 137 BJ | 102 BJ | --- | --- | --- |
| Thallium | NS | NS | 3.3 BJ | 3 BJ | 1.1 B | 1 B | 1.5 B |
| Vanadium | NS | NS | 24 BJ | 25 J | 16 B | 14 B | 15 B |
| Zinc | 270 (L) | 120 (P/L) | (240 J) | (452 J*) | (192 ) | (323 *) | (1050 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (0.65 BJ) | (0.84 BJN) | (0.33 BN) | (3.9 N) | (4.3 N) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 34 | 43 | 59 | 70 | 63 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 8.5 e J | 8.5 e J | 8.5 J | 3.1 e | 3.1 |
| Total organic carbon (mg/Kg) | NS | NS | 85400 e J | 85400 e J | 85400 J | 31100 e | 31100 |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, — - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.



FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg
DBF File: Q:\10653_NYSDEC\27258_ThreeStar\CreekTables.dbf
File Number: 10653.27258
Date Printed: 03/11/2005 09:45:02

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-OD2 | WP-OD2 | WP-OD2 | WP-T2A | WP-T2A |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/14/2003 | 05/14/2003 | 05/14/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 22 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 12600 J | 11700 J | 12700 | 13100 J | 10300 |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | (8.9 BNJ) |
| Arsenic | 33.0 (P) | 6.0 (P) | 5.3 BJ | 5.1 J | (16 ) | 5.3 BJ | (7.5 ) |
| Barium | NS | NS | 66 BJ | 60 BJ | 48 B | 70 BJ | 45 B |
| Beryllium | NS | NS | 0.61 BJ | 0.54 BJ | 0.56 B | 0.7 BJ | 0.44 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (2.3 BJ) | (2.2 J) | (4 ) | (1.9 BJ) | (2.8 ) |
| Calcium | NS | NS | 5310 J | 3120 J | 1950 | 6070 J | 2290 |
| Chromium** | 110.0 (P) | 26.0 (P) | (68 J) | (78 J) | (351 *) | (58 J) | (119 *) |
| Cobalt | NS | NS | 14 BJ | 12 BJ | 12 B | 14 BJ | 11 B |
| Copper | 110.0 (P) | 16.0 (P) | (69 J) | (63 J) | (55 ) | (69 J) | (46 ) |
| Iron | 4% (P) | 2% (P) | (2.5 J) | (2.5 J) | (2.8 ) | (2.8 J) | (2.2 ) |
| Lead | 110.0 (L) | 31.0 (P) | (96 J) | (111 J*) | (102 ) | (86 J) | (91 ) |
| Magnesium | NS | NS | 6150 J | 5370 J | 5780 | 6270 J | 4830 |
| Manganese | 1100 (L) | 460 (P) | 433 J | 305 J | 284 | (633 J) | 228 |
| Mercury | 1.3 (L) | 0.15 (L) | (1.9 J*) | (2.5 J*) | (19 J*) | (1.4 J*) | (3.9 *) |
| Nickel | 50 (L) | 16 (P) | (36 J) | (31 J) | (24 ) | (32 J) | (21 ) |
| Potassium | NS | NS | 1260 BJ | 951 BJ | 1080 B | 1400 BJ | 896 B |
| Selenium | NS | NS | --- | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 156 BJ | 90 BJ | --- | 184 BJ | 76 B |
| Thallium | NS | NS | 2.4 BJ | --- | 1.6 B | --- | --- |
| Vanadium | NS | NS | 24 BJ | 21 J | 16 B | 22 BJ | 13 B |
| Zinc | 270 (L) | 120 (P/L) | (266 J) | (250 J) | (442 *) | (265 J) | (311 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | --- | --- | (0.44 B) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 30 | 49 | 63 | 27 | 63 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 4.1 e J | 4.1 e J | 4.1 J | 5 BJ | 3.1 B |
| Total organic carbon (mg/Kg) | NS | NS | 41100 e J | 41100 e J | 41100 J | 49600 BJ | 31400 B |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, — - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T2B | WP-T2B | WP-T2B | WP-T2C | WP-T2C |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 14700 J | 11800 | 11400 | 11900 J | 14000 |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.5 J) | 3.8 | 2.2 B | (7.7 J) | (40 *) |
| Barium | NS | NS | 78 BJ | 28 B | 41 B | 65 BJ | 60 B |
| Beryllium | NS | NS | 0.69 BJ | 0.38 B | 0.44 B | 0.61 BJ | 0.64 B |
| Cadmium | 9.0 (P) | 0.6 (P) | (1.5 BJ) | (1.1 B) | 0.56 B | (4.6 J) | (5.6 ) |
| Calcium | NS | NS | 7300 J | 1630 | 1740 | 6760 J | 3170 |
| Chromium** | 110.0 (P) | 26.0 (P) | (34 J) | (27 ) | 17 | (64 J) | (826 *) |
| Cobalt | NS | NS | 18 BJ | 14 | 10 B | 18 BJ | 14 B |
| Copper | 110.0 (P) | 16.0 (P) | (50 J) | (22 ) | 14 | (90 J) | (129 *) |
| Iron | 4% (P) | 2% (P) | (3.0 J) | (2.7 ) | (2.3 ) | (2.6 J) | (2.8 ) |
| Lead | 110.0 (L) | 31.0 (P) | (106 J) | (40 ) | 26 | (125 J*) | (287 *) |
| Magnesium | NS | NS | 7780 J | 7170 | 5240 | 6670 J | 6280 |
| Manganese | 1100 (L) | 460 (P) | (506 J) | 248 | 247 | 421 J | 290 |
| Mercury | 1.3 (L) | 0.15 (L) | (0.46 J) | (0.17 ) | (0.18 ) | (1.7 J*) | (33 *) |
| Nickel | 50 (L) | 16 (P) | (35 J) | (26 ) | (20 ) | (37 J) | (29 ) |
| Potassium | NS | NS | 1540 BJ | 740 B | 960 B | 1310 BJ | 1270 B |
| Selenium | NS | NS | --- | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 195 BJ | 56 B | 88 B | 163 BJ | 124 B |
| Thallium | NS | NS | --- | 0.86 BJ | 1.5 BJ | --- | --- |
| Vanadium | NS | NS | 23 BJ | 13 B | 13 B | 22 BJ | 18 B |
| Zinc | 270 (L) | 120 (P/L) | (238 J) | (155 ) | 82 | (470 J*) | (588 *) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | (0.33 B) | --- | --- | (1.5 ) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 33 | 75 | 68 | 33 | 51 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 4.9 J | 2.6 J | 1.9 | 4.5 BJ | 5.9 B |
| Total organic carbon (mg/Kg) | NS | NS | 49000 J | 26400 J | 19100 | 45000 BJ | 59000 B |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, — - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T2C | WP-OD1 | WP-OD1 | WP-OD1 | WP-T3A |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. | 12 - 19 in. | 0 - 6 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 13400 | 12200 J | 17000 | 15800 | 15800 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | --- | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | 3.8 | (16 J) | (21 ) | 5 | (6.1 BJ) |
| Barium | NS | NS | 45 B | 67 BJ | 87 | 81 | 92 BJ |
| Beryllium | NS | NS | 0.5 B | 0.69 BJ | 0.83 B | 0.79 B | 0.82 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | 0.42 B | (5.8 J) | (1.8 B) | 0.58 B | (2.8 BJ) |
| Calcium | NS | NS | 1710 | 6940 J | 3700 | 3130 | 8830 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (31 ) | (247 J*) | (566 *) | 23 | (66 J) |
| Cobalt | NS | NS | 10 B | 20 BJ | 14 B | 12 B | 17 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (18 ) | (89 J) | (89 ) | (23 ) | (84 J) |
| Iron | 4% (P) | 2% (P) | (2.6 ) | (2.8 J) | (2.9 ) | (2.7 ) | (3.1 J) |
| Lead | 110.0 (L) | 31.0 (P) | (37 ) | (138 J*) | (218 *) | (66 ) | (106 J) |
| Magnesium | NS | NS | 6130 | 6070 J | 6320 | 5930 | 8070 J |
| Manganese | 1100 (L) | 460 (P) | 242 | 450 J | 366 | 374 | (469 J) |
| Mercury | 1.3 (L) | 0.15 (L) | 0.095 | (8.3 J*) | (20 *) | 0.11 | (1.1 J) |
| Nickel | 50 (L) | 16 (P) | (23 ) | (47 J) | (29 ) | (26 ) | (42 J) |
| Potassium | NS | NS | 990 B | 1490 BJ | 1560 B | 1470 B | 1900 BJ |
| Selenium | NS | NS | --- | --- | --- | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 99 B | 222 BJ | 185 B | 165 B | 223 BJ |
| Thallium | NS | NS | --- | 3.1 BJ | 1.7 BJ | 2.2 BJ | --- |
| Vanadium | NS | NS | 15 | 28 BJ | 23 | 22 | 38 J |
| Zinc | 270 (L) | 120 (P/L) | 73 | (611 J*) | (251 ) | 84 | (316 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | (0.27 B) | --- | (0.6 B) | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 70 | 27 | 51 | 53 | 30 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 1.1 B | 5.7 BJ | 6.1 B | 3.8 B | 5.6 J |
| Total organic carbon (mg/Kg) | NS | NS | 11000 B | 56500 BJ | 60700 B | 37600 B | 56400 J |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, — - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-3

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T3A DUP | WP-T3A | WP-T3A | WP-T3B | WP-T3B |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 0 - 6 in. | 6 - 12 in. | 12 - 24 in. | 0 - 6 in. | 6 - 12 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NS | 73200 (1) | 14600 J | 19000 J | 15900 | 14500 J | 16500 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | (2.4 BNJ) | --- | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.1 BJ) | (10 J) | (30 ) | 5 BJ | (8.4 J) |
| Barium | NS | NS | 84 BJ | 95 BJ | 86 | 94 BJ | 91 J |
| Beryllium | NS | NS | 0.73 BJ | 0.94 BJ | 0.76 B | 0.79 BJ | 0.82 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | (2.4 BJ) | (3.7 J) | (5.3 ) | (1.7 BJ) | (1.5 BJ) |
| Calcium | NS | NS | 8110 J | 10200 J | 4460 | 11500 J | 4860 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (60 J) | (110 J) | (322 *) | (44 J) | (159 J*) |
| Cobalt | NS | NS | 15 BJ | 19 BJ | 13 B | 14 BJ | 15 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (73 J) | (99 J) | (81 ) | (56 J) | (53 J) |
| Iron | 4% (P) | 2% (P) | (2.8 J) | (3.8 J) | (2.8 ) | (3.0 J) | (3.0 J) |
| Lead | 110.0 (L) | 31.0 (P) | (94 J) | (136 J*) | (160 *) | (67 J) | (94 J) |
| Magnesium | NS | NS | 7860 J | 12900 J | 6970 | 7180 J | 7110 J |
| Manganese | 1100 (L) | 460 (P) | 445 J | (492 J) | 400 | (702 J) | (495 J) |
| Mercury | 1.3 (L) | 0.15 (L) | (1.3 J) | (2.7 J*) | (13 *) | (0.77 J) | (0.44 J) |
| Nickel | 50 (L) | 16 (P) | (38 J) | (48 J) | (27 ) | (31 J) | (34 J) |
| Potassium | NS | NS | 1720 BJ | 1840 BJ | 1610 B | 1750 BJ | 1650 BJ |
| Selenium | NS | NS | --- | --- | 1.1 B | --- | --- |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- | --- | --- |
| Sodium | NS | NS | 207 BJ | 180 BJ | 129 B | 195 BJ | 144 BJ |
| Thallium | NS | NS | --- | --- | --- | 2.3 BJ | 2.5 BJ |
| Vanadium | NS | NS | 31 BJ | 51 J | 21 | 25 BJ | 28 J |
| Zinc | 270 (L) | 120 (P/L) | (281 J*) | (364 J*) | (508 *) | (222 J) | (179 J) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | (2.7 ) | --- | --- |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- | --- | --- |
| Percent solids (%) | NA | NA | 29 | 36 | 54 | 29 | 46 |
| pH | NA | NA | --- | --- | --- | --- | --- |
| % TOC | NS | NS | 6.9 BJ | 5.8 J | 4.4 J | 4 BJ | 3.8 BJ |
| Total organic carbon (mg/Kg) | NS | NS | 69300 BJ | 57700 J | 44200 J | 39600 BJ | 38000 BJ |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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# Table 3-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappinger Creek Investigation - Sediment Samples
## Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | WP-T3B | WP-T3C | WP-T3C |
|---|---|---|---|---|---|
| Sample Date | | | 05/13/2003 | 05/13/2003 | 05/13/2003 |
| Sample Depth | | | 12 - 24 in. | 0 - 6 in. | 6 - 11 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | |
| Aluminum | NS | 73200 (1) | 16600 | 15700 J | 15400 J |
| Antimony | 25.0 (L) | 2.0 (L) | --- | --- | 1.3 BNJ |
| Arsenic | 33.0 (P) | 6.0 (P) | (6.4 ) | 5.8 BJ | (9.3 J) |
| Barium | NS | NS | 81 | 92 BJ | 91 J |
| Beryllium | NS | NS | 0.8 B | 0.89 BJ | 0.81 BJ |
| Cadmium | 9.0 (P) | 0.6 (P) | (0.61 B) | (2.6 BJ) | (3.4 J) |
| Calcium | NS | NS | 3150 | 8620 J | 5800 J |
| Chromium** | 110.0 (P) | 26.0 (P) | (53 ) | (60 J) | (115 J*) |
| Cobalt | NS | NS | 14 B | 15 BJ | 14 BJ |
| Copper | 110.0 (P) | 16.0 (P) | (29 ) | (79 J) | (78 J) |
| Iron | 4% (P) | 2% (P) | (3.0 ) | (3.2 J) | (3.1 J) |
| Lead | 110.0 (L) | 31.0 (P) | (188 *) | (94 J) | (125 J*) |
| Magnesium | NS | NS | 6520 | 7830 J | 6830 J |
| Manganese | 1100 (L) | 460 (P) | 430 | (508 J) | (466 J) |
| Mercury | 1.3 (L) | 0.15 (L) | 0.13 | (0.84 J) | (4.9 J*) |
| Nickel | 50 (L) | 16 (P) | (29 ) | (41 J) | (33 J) |
| Potassium | NS | NS | 1640 B | 2010 BJ | 1590 BJ |
| Selenium | NS | NS | --- | --- | 1.5 BJ |
| Silver | 2.2 (L) | 1.0 (L) | --- | --- | --- |
| Sodium | NS | NS | 132 B | 249 BJ | 179 BJ |
| Thallium | NS | NS | 2 BJ | --- | --- |
| Vanadium | NS | NS | 23 | 42 J | 28 J |
| Zinc | 270 (L) | 120 (P/L) | 92 | (269 J) | (353 J*) |
| Cyanide, total | NS | 0.1 (Eisler 1991) | --- | --- | (0.36 BJ) |
| Cyanide, amenable to chlorination | NS | NS | --- | --- | --- |
| Percent solids (%) | NA | NA | 54 | 31 | 45 |
| pH | NA | NA | --- | --- | --- |
| % TOC | NS | NS | 2 B | 7.2 J | 6.4 J |
| Total organic carbon (mg/Kg) | NS | NS | 19700 B | 72000 J | 63800 J |

NOTES: J - estimated value, NS = no screening value, NA = not applicable, — - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

# Table 3-4A
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Low Flow July 2001
## Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS Data

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | | Surface Water Screening Values | Wappingers Lake Route 9D 07/12/2001 | Site Bridge 1 WP5-SW 07/12/2001 | Site Bridge 2 WP10-SW 07/12/2001 | Site Bridge 2 DUP WP10-SW 07/12/2001 | WP13-SW 07/12/2001 | WP18-SW 07/12/2001 |
|---|---|---|---|---|---|---|---|---|
| Volatile Organic Compounds | | | | | | | | |
| Acetone | (ug/L) | 50 G H(WS) | --- | 3 J | --- | --- | --- | --- |
| Semi-Volatile Organic Compounds (None Detected) | | | | | | | | |
| Total suspended solids (mg/L) | (mg/L) | NS | 7 | 5 U | 5 | 5 U | 5 U | 5 U |

NOTES: U - not detected, J - estimated value, NS = no screening value, — - no data, G - guidance value, H(WS) - health water source.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2.
[ ] - exceeds Surface Water screening value. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1.



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# Table 3-4A

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Low Flow July 2001
## Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS Data

| Compound | | Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units | Surface Water Screening Values | WP35-SW<br><br>07/12/2001 |
|---|---|---|---|---|
| Volatile Organic Compounds | | | | |
| Acetone | (ug/L) | | 50 G H(WS) | --- |
| Semi-Volatile Organic Compounds (None Detected) | | | | |
| Total suspended solids (mg/L) | (mg/L) | | NS | 5 U |

NOTES: U - not detected, J - estimated value, NS = no screening value, — - no data, G - guidance value, H(WS) - health water source.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2.
[ ] - exceeds Surface Water screening value. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1.

# Table 3-4B
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Storm Event, May 2002
## Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS data

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | | Surface Water Screening Values | Wappingers Lake<br>WPLKSW-1<br>05/14/2002 | Wappingers Lake DUP<br>WPLKSW-1 DUP<br>05/14/2002 | Wappingers Lake<br>WPLKSW-2<br>05/15/2002 | Site Bridge-1<br>05/14/2002 | Site Bridge-2<br>05/15/2002 | Lagoon (outlet)<br>05/15/2002 |
|---|---|---|---|---|---|---|---|---|
| Volatile Organic Compounds (None Detected) | | | | | | | | |
| Semi-Volatile Organic Compounds (None Detected) | | | | | | | | |
| Total suspended solids (mg/L) | (mg/L) | NS | 13 | 8 | 6 | 18 | 12 | 5 U |

NOTES: U - not detected. NS - no screening value.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2. Water quality screening value obtained from NYSDEC (1998) TOGS 1.1.1.
There were no volatile or semivolatile organic compounds detected in these samples.



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# Table 3-4B
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Storm Event, May 2002
## Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS data

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | | Surface Water Screening Values | Rt. 28 Bridge -1<br><br>05/14/2002 | Rt. 28 Bridge -2<br><br>05/15/2002 |
|---|---|---|---|---|
| Volatile Organic Compounds (None Detected) | | | | |
| Semi-Volatile Organic Compounds (None Detected) | | | | |
| Total suspended solids (mg/L) | (mg/L) | NS | 18 | 20 |

NOTES: U - not detected. NS - no screening value.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2. Water quality screening value obtained from NYSDEC (1998) TOGS 1.1.1.
There were no volatile or semivolatile organic compounds detected in these samples.



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# Table 3-5A
## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Low Flow, July 2001
## Inorganic Data Compared to Screening Values Including TSS and Hardness Data

| Sample ID / Location Cross Reference / Sample Date / Units / Compound | Surface Water Screening Values ug/L | Wappingers Lake Route 9D 07/12/2001 ug/L | Hardness A(C) | Site Bridge 1 WP5-SW 07/12/2001 ug/L | Hardness A(C) | Site Bridge 2 WP10-SW 07/12/2001 ug/L | Hardness A(C) | WP13-SW 07/12/2001 ug/L | Hardness A(C) | WP18-SW 07/12/2001 ug/L | Hardness A(C) | WP35-SW 07/12/2001 ug/L | Hardness A(C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 100 i-A(C) | 82 J | | 34 J | | 74 J | | 28 J | | 38 J | | 18 J | |
| Antimony | 3 H(WS) | 1.4 U | | 1.4 U | | 1.4 U | | 1.4 U | | 1.4 U | | 1.4 U | |
| Arsenic | 50/150 H(WS)/d-A(C) | 1.6 U | | 1.6 U | | 1.6 U | | 1.6 U | | 1.6 U | | 1.6 U | |
| Barium | 1000 H(WS) | 16 J | | 15 J | | 16 J | | 15 J | | 17 J | | 16 J | |
| Beryllium | 3 gd-H(WS)/A(C) | 0.08 U | 1100 | 0.08 U | 1100 | 0.08 U | 1100 | 0.08 U | 1100 | 0.08 U | 1100 | 0.08 U | 1100 |
| Cadmium | 5/h H(WS)/A(C) | 0.2 U | 3.0 | 0.2 U | 3.3 | 0.2 U | 3.2 | 0.2 U | 3.2 | 0.2 U | 3.0 | 0.2 U | 3.2 |
| Calcium | NS | 44800 | | 44500 | | 45100 | | 47500 | | 49600 | | 46500 | |
| Chromium | 11 dhx-A(C) | 1.8 J | 109 | 1.0 J | 120 | 1.7 J | 114 | 1.3 J | 114 | 1.9 J | 109 | 1.7 J | 114 |
| Cobalt | 5 A(C) | 0.9 U | | 0.9 U | | 0.9 U | | 0.9 U | | 0.9 U | | 0.9 U | |
| Copper | 200/h H(WS)/A(C) | 1.9 J | 13 | 1.4 J | 15 | 1.4 J | 14 | 1.0 J | 14 | 1.4 J | 13 | 1.3 J | 14 |
| Iron | 300 A(C) | 278 | | 207 | | 284 | | 173 | | 198 | | 152 | |
| Lead | 50/h H(WS)/A(C) | 0.7 U | 6.3 | 0.7 U | 7.1 | 0.7 U | 6.7 | 0.7 U | 6.7 | 0.7 U | 6.3 | 0.7 U | 6.7 |
| Magnesium | 35000 H(WS) | 12500 | | 12300 | | 12400 | | 13000 | | 13600 | | 12700 | |
| Manganese | 300 E | 102 | | 106 | | 134 | | 97 | | 100 | | 95 | |
| Mercury | 0.0007/0.77 d-H(FC)/A(C) | 0.2 U | | 0.2 U | | 0.2 U | | 0.2 U | | 0.2 U | | 0.2 U | |
| Nickel | 100h H(WS)/A(C) | 0.8 J | 77 | 0.7 U | 86 | 0.7 U | 81 | 0.7 U | 81 | 0.7 U | 77 | 1.0 J | 81 |
| Potassium | NS | 1010 J | | 1010 J | | 1030 J | | 1090 J | | 1150 J | | 1070 J | |
| Selenium | 4.6 d-A(C) | 1.8 U | | 1.8 U | | 1.8 U | | 1.8 U | | 1.8 U | | 1.8 U | |
| Silver | 0.1 i-A(C) | 0.7 U | | 0.7 U | | 0.7 U | | 0.7 U | | 0.7 U | | 0.7 U | |
| Sodium | NS | 28800 | | 28400 | | 28800 | | 30000 | | 31200 | | 29600 | |
| Thallium | 0.5/8 gd-H(WS)/A(C) | 3.6 U | | 3.6 U | | 3.6 U | | 3.6 U | | 3.6 U | | 3.6 U | |
| Vanadium | 14 A(C) | 0.4 U | | 0.4 U | | 0.4 U | | 0.4 U | | 0.4 U | | 0.4 U | |
| Zinc | 66 d-A(C) | 1.3 J | 123 | 2.1 J | 136 | 4.8 J | 130 | 4.7 J | 130 | 5.0 J | 123 | 1.1 J | 130 |
| Cyanide, total | 5.2 f-A(C) | 10.0 U | | 10.0 U | | 10.0 U | | 10.0 U | | 10.0 U | | 10.0 U | |
| Total suspended solids (mg/L) | NS | 7 | | 5 U | | 5 | | 5 U | | 5 U | | 5 U | |
| Hardness (mg/L) | NS | 160 | | 180 | | 170 | | 170 | | 160 | | 170 | |

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.



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# Table 3-5B

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Storm Event, May 2002
## Inorganic Data Compared to Screening Values Including TSS and Hardness Data

| Sample ID / Location Cross Reference / Sample Date / Units / Compound | Surface Water Screening Values ug/L | Wappingers Lake WPLKSW-1 05/14/2002 ug/L | Hardness A(C) | Wappingers Lake WPLKSW-2 05/15/2002 ug/L | Hardness A(C) | Site Bridge-1 05/14/2002 ug/L | Hardness A(C) | Site Bridge-2 05/15/2002 ug/L | Hardness A(C) | Lagoon (outlet) 05/15/2002 ug/L | Hardness A(C) | Rt. 28 Bridge -1 05/14/2002 ug/L | Hardness A(C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 100 i-A(C) | [451 ] | | [256 ] | | [593 ] | | [412 ] | | [143 J] | | [696 ] | |
| Antimony | 3 H(WS) | 2.0 U | | 2.0 U | | 2.0 U | | 2.0 U | | 2.0 U | | 2.0 U | |
| Arsenic | 50/150 H(WS)/d-A(C) | 3.3 U | | 3.3 U | | 3.3 U | | 3.3 U | | 3.3 U | | 3.3 U | |
| Barium | 1000 H(WS) | 17 J | | 13 J | | 19 J | | 15 J | | 18 J | | 19 J | |
| Beryllium | 3 gd-H(WS)/A(C) | 0.1 U | 1100 | 0.1 U | 1100 | 0.1 U | 1100 | 0.1 U | 1100 | 0.1 U | 1100 | 0.1 J | 1100 |
| Cadmium | 5/h H(WS)/A(C) | 0.4 U | 2.3 | 0.4 U | 2.3 | 0.4 U | 2.1 | 0.4 U | 2.1 | 0.4 U | 2.3 | 0.4 U | 2.3 |
| Calcium | NS | 30100 | | 30600 | | 30700 | | 30300 | | 35300 | | 30800 | |
| Chromium | 11 dhx-A(C) | 1.2 U | 80 | 1.2 U | 80 | 1.2 U | 74 | 1.2 U | 74 | 1.2 U | 80 | 1.2 U | 80 |
| Cobalt | 5 A(C) | 1.3 U | | 1.3 U | | 1.3 U | | 1.3 U | | 1.3 U | | 1.3 U | |
| Copper | 200/h H(WS)/A(C) | 2.3 J | 10 | 3.4 J | 10 | 1.8 U | 9.0 | 2.1 J | 9.0 | 2.4 J | 10 | 2.1 J | 10 |
| Iron | 300 A(C) | [610 ] | | [386 ] | | [708 ] | | [581 ] | | 281 | | [834 ] | |
| Lead | 50/h H(WS)/A(C) | 0.8 J | 4.2 | 0.8 U | 4.2 | 0.9 J | 3.8 | 1.1 J | 3.8 | 1.7 J | 4.2 | 0.9 J | 4.2 |
| Magnesium | 35000 H(WS) | 7120 | | 7130 | | 7250 | | 7130 | | 8540 | | 7570 | |
| Manganese | 300 E | 99 | | 69 | | 109 | | 88 | | 95 | | 107 | |
| Mercury | 0.0007/0.77 d-H(FC)/A(C) | 0.1 U | | 0.1 U | | 0.1 U | | 0.1 U | | 0.1 U | | 0.1 U | |
| Nickel | 100h H(WS)/A(C) | 1.8 U | 56 | 1.8 U | 56 | 1.8 U | 52 | 1.8 U | 52 | 1.8 U | 56 | 1.8 U | 56 |
| Potassium | NS | 1350 J | | 1320 J | | 1390 J | | 1260 J | | 1410 J | | 1360 J | |
| Selenium | 4.6 d-A(C) | 2.9 U | | 2.9 U | | 2.9 U | | 2.9 U | | 2.9 U | | 2.9 U | |
| Silver | 0.1 i-A(C) | [2.2 J] | | [1.8 J] | | [1.7 J] | | [2.1 J] | | [2.0 J] | | 1.5 U | |
| Sodium | NS | 21200 J | | 20800 J | | 22400 J | | 20700 J | | 25700 J | | 24600 J | |
| Thallium | 0.5/8 gd-H(WS)/A(C) | 3.7 U | | 3.7 U | | 3.7 U | | 3.7 U | | 3.7 U | | 3.7 U | |
| Vanadium | 14 A(C) | 2.2 J | | 1.6 J | | 2.0 J | | 2.0 J | | 2.0 J | | 1.8 J | |
| Zinc | 66 d-A(C) | 4.8 J | 90 | 6.8 J | 90 | 7.4 J | 83 | 6.4 J | 83 | 6.5 J | 90 | 7.0 J | 90 |
| Cyanide, total | 5.2 f-A(C) | 10.0 U | | 10.0 U | | 10.0 U | | [20 ] | | 10.0 U | | 10.0 U | |
| Total suspended solids (mg/L) | NS | 13 | | 6 | | 18 | | 12 | | 5 U | | 18 | |
| Hardness (mg/L) | NS | 110 | | 110 | | 100 | | 100 | | 110 | | 110 | |

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-5B

## Three Star Anodizing Site
## Wappingers Falls, New York
## Wappingers Creek Surface Water Samples - Storm Event, May 2002
## Inorganic Data Compared to Screening Values Including TSS and Hardness Data

| Sample ID / Location Cross Reference / Sample Date / Units / Compound | Surface Water Screening Values ug/L | Rt. 28 Bridge -2 05/15/2002 ug/L | Hardness A(C) | | Hardness A(C) | | Hardness A(C) | | Hardness A(C) | | Hardness A(C) | | Hardness A(C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 100 i-A(C) | [676 ] | | | | | | | | | | | |
| Antimony | 3 H(WS) | 2.0 U | | | | | | | | | | | |
| Arsenic | 50/150 H(WS)/d-A(C) | 3.3 U | | | | | | | | | | | |
| Barium | 1000 H(WS) | 17 J | | | | | | | | | | | |
| Beryllium | 3 gd-H(WS)/A(C) | 0.1 J | 1100 | | | | | | | | | | |
| Cadmium | 5/h H(WS)/A(C) | 0.4 U | 2.4 | | | | | | | | | | |
| Calcium | NS | 31100 | | | | | | | | | | | |
| Chromium | 11 dhx-A(C) | 1.2 U | 86 | | | | | | | | | | |
| Cobalt | 5 A(C) | 1.3 U | | | | | | | | | | | |
| Copper | 200/h H(WS)/A(C) | 2.8 J | 10 | | | | | | | | | | |
| Iron | 300 A(C) | [895 ] | | | | | | | | | | | |
| Lead | 50/h H(WS)/A(C) | 2.0 J | 4.6 | | | | | | | | | | |
| Magnesium | 35000 H(WS) | 7290 | | | | | | | | | | | |
| Manganese | 300 E | 107 | | | | | | | | | | | |
| Mercury | 0.0007/0.77 d-H(FC)/A(C) | 0.1 U | | | | | | | | | | | |
| Nickel | 100h H(WS)/A(C) | 1.8 U | 61 | | | | | | | | | | |
| Potassium | NS | 1370 J | | | | | | | | | | | |
| Selenium | 4.6 d-A(C) | 2.9 U | | | | | | | | | | | |
| Silver | 0.1 i-A(C) | [1.7 J] | | | | | | | | | | | |
| Sodium | NS | 21700 J | | | | | | | | | | | |
| Thallium | 0.5/8 gd-H(WS)/A(C) | 3.7 U | | | | | | | | | | | |
| Vanadium | 14 A(C) | 2.3 J | | | | | | | | | | | |
| Zinc | 66 d-A(C) | 8.6 J | 96 | | | | | | | | | | |
| Cyanide, total | 5.2 f-A(C) | [10.0 ] | | | | | | | | | | | |
| Total suspended solids (mg/L) | NS | 20 | | | | | | | | | | | |
| Hardness (mg/L) | NS | 120 | | | | | | | | | | | |

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.

**Table 3-6**
**Three Star Anodizing Site – Wappingers Creek**
**Fish & Wildlife Impact Analysis**
**Description of Ecological Screening References**

| Title | Author/Date | Description |
|---|---|---|
| Surface Water | | |
| *Technical and Operational Guidance Series Number 1.1.1 – New York State Ambient Water Quality Standards and Guidance Values* | NYSDEC (1998) | The NYSDEC surface water quality standards and guidance values are specific to each "class" of water identified by the state. Standards and guidance values are ambient water quality values derived according to procedures that are in regulation (6 NYCRR Part 702). Standards are values that have been promulgated and placed into regulation. Guidance values may be considered where a standard for a substance or group of substances has not been established for a particular water class and type, but do not have the regulatory implications of the standards.<br><br>The NYSDEC standards and guidance values derived for the protection of *freshwater* aquatic life from *chronic* effects or for protection of wildlife for class "C" waters, were selected as screening values for this study. When a NYSDEC or USEPA ecological value was unavailable for a detected constituent, a human health protection value was selected from this reference as the screening value, as noted on the respective RI data tables. |
| *National Recommended Ambient Water Quality Criteria-Correction* | USEPA (2002) | The water quality criteria developed by USEPA under section 304(a) of the Clean Water Act are based on data and scientific judgments about the relationship between chemical concentrations and environmental and human health effects with provision of conservative scaling, or safety factors, to provide an additional margin of safety. National recommended water quality criteria have been developed for 147 constituents. For this study, the continuous chronic criterion was selected as the screening value. When a NYSDEC or USEPA ecological value was unavailable for a detected constituent, a human health protection value was selected from this reference as the screening value, as noted on the respective RI data tables. |

**Table 3-6**
**Three Star Anodizing Site – Wappingers Creek**
**Fish & Wildlife Impact Analysis**
**Description of Ecological Screening References**

| Title | Author/Date | Description |
|---|---|---|
| Sediment | | |
| *Technical Guidance for Screening Contaminated Sediments* | NYSDEC (1999) | The NYSDEC sediment criteria are guidance values that were designed to assess sediment residues and to assist in the preliminary screening assessment of the potential risk posed by the constituents to exposed ecological receptors, if any. NYSDEC developed sediment criteria for two classes of constituents: non-polar organic compounds and inorganic constituents.<br><br>Criteria for non-polar organic compounds were derived using the equilibrium partitioning (EqP) approach, which is based on theoretical relationships between the pore water constituent concentration and an estimate of the constituent's affinity to sorb to organic carbon in the sediment. Therefore, the screening concentrations (SC) based on the EqP approach are as presented on the RI summary tables. The SC consist of concentrations reported by the laboratory normalized for the amount of organic carbon measured in the sediment, as follows:<br><br>Where: $SC = C/fOC$<br><br>and: SC = screening concentration, C = laboratory reported concentration, and $fOC$ = fraction of organic carbon.<br>The biologically available concentration of a constituent is estimated by the EqP method and related to potential toxicity and bioaccumulation by comparison to existing criteria established for the water column. NYSDEC or USEPA water quality standards and guidance values are used to derive sediment criteria.<br><br>Inorganic criteria are based on methods from the Ministry of Ontario Persaud *et al.* (1993) and NOAA Long and Morgan (1990). In this approach, the lowest effect level (LEL) and severe effect level (SEL) are empirical values that were derived by Persaud *et al.* (1993) using field-based data correlating the chemical concentrations in sediment and effects observed in benthic species. The LEL is a threshold value at which actual ecotoxic effects have been observed. The SEL represents constituent levels in sediments that could potentially eliminate most of the benthic organisms. A limitation of empirically derived screening values is that they may not account for interactions of chemicals. |

Table 4-1
Three Star Anodizing Site - Wappingers Creek
Fish & Wildlife Impact Analysis
Hazard Quotient Calculations for Maximum Exposure Scenario of Wappingers Creek

| Constituent | Sediment Maximum Exposure Point Conc. (mg/kg) | Surface Water Maximum Exposure Point Conc. (µg/l) | Trophic Level 4 Fish Exposure Point Conc. (mg/kg) | Mink | | | Great Blue Heron | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | TDI (mg/kg/day) | TRV (mg/kg/day) | HQ (1) | TDI (mg/kg/day) | TRV (mg/kg/day) | HQ (1) |
| Aluminum | 1.90E+04 | 7.00E-01 | 1.92E+01 | 2.90E+01 | 8.03E-01 | **3.60E+01** | 3.23E+00 | 1.10E+02 | 2.90E-02 |
| Antimony | 1.60E+02 | 2.00E-03 | 5.44E+00 | 6.29E-01 | 5.20E-02 | **1.20E+01** | 7.00E-02 | 5.20E-04 | **1.30E+02** |
| Arsenic | 1.60E+02 | 3.30E-03 | 1.23E+01 | 1.13E+00 | 5.20E-02 | **2.20E+01** | 1.26E-01 | 5.10E+00 | 2.50E-02 |
| Barium | 1.30E+02 | 1.90E-02 | 3.38E+00 | 4.35E-01 | 4.10E+00 | 1.10E-01 | 4.84E-02 | 2.08E+01 | 2.30E-03 |
| Beryllium | 9.40E-01 | 1.20E-04 | 9.40E-04 | 1.44E-03 | 5.10E-01 | 2.80E-03 | 1.60E-04 | 5.10E-03 | 3.10E-02 |
| Cadmium | 5.30E+01 | 3.70E-04 | 5.97E+02 | 4.35E+01 | 7.42E-01 | **5.90E+01** | 4.84E+00 | 1.45E+00 | **3.30E+00** |
| Calcium | 2.50E+04 | 5.00E+01 | 8.50E+02 | 9.82E+01 | NA | NA | 1.09E+01 | NA | NA |
| Chromium | 4.10E+03 | 1.90E-03 | 1.21E+02 | 1.48E+01 | 2.52E+00 | **5.90E+00** | 1.65E+00 | 1.00E+00 | **1.60E+00** |
| Cobalt | 2.00E+01 | 1.30E-03 | 3.62E-01 | 5.54E-02 | NA | NA | 6.17E-03 | NA | NA |
| Copper | 4.60E+02 | 2.80E-03 | 5.35E+01 | 4.56E+00 | 1.17E+01 | 3.90E-01 | 5.08E-01 | 4.70E+01 | 1.10E-02 |
| Cyanide | 4.20E+01 | 2.00E-02 | NAP | 6.11E-02 | 4.97E+01 | 1.20E-03 | 6.80E-03 | 5.30E-03 | **1.30E+00** |
| Iron | 4.30E+04 | 9.00E-01 | 1.13E+02 | 7.08E+01 | NA | NA | 7.88E+00 | NA | NA |
| Lead | 8.00E+02 | 2.00E-03 | 9.84E+00 | 1.88E+00 | 6.15E+00 | 3.10E-01 | 2.09E-01 | 3.85E+00 | 5.40E-02 |
| Magnesium | 1.90E+04 | 1.40E+01 | 6.46E+02 | 7.46E+01 | NA | NA | 8.31E+00 | NA | NA |
| Manganese | 2.40E+03 | 1.30E-01 | 9.07E+01 | 1.01E+01 | 6.80E+01 | 1.50E-01 | 1.12E+00 | 9.97E+02 | 1.10E-03 |
| Mercury | 1.90E+02 | 1.80E-04 | 2.14E+03 | 1.56E+02 | 1.00E+00 | **1.60E+02** | 1.74E+01 | 4.50E-01 | **3.90E+01** |
| Nickel | 5.60E+01 | 1.80E-03 | 2.80E+00 | 2.85E-01 | 3.08E+01 | 9.30E-03 | 3.18E-02 | 7.74E+01 | 4.10E-04 |
| Potassium | 2.00E+03 | 1.40E+00 | 6.80E+01 | 7.86E+00 | NA | NA | 8.75E-01 | NA | NA |
| Selenium | 3.50E+00 | 2.90E-03 | 5.57E+01 | 4.06E+00 | 1.54E-01 | **2.60E+01** | 4.52E-01 | 5.00E-01 | 9.00E-01 |
| Silver | 1.20E+00 | 2.10E-03 | 4.08E-02 | 4.71E-03 | 1.81E+01 | 2.60E-04 | 5.25E-04 | 1.78E+01 | 2.90E-05 |
| Sodium | 3.80E+02 | 3.10E+01 | 1.29E+01 | 1.50E+00 | NA | NA | 1.68E-01 | NA | NA |
| Thallium | 3.30E+00 | 3.70E-03 | 1.12E-01 | 1.30E-02 | 6.00E-03 | **2.20E+00** | 1.44E-03 | 9.50E-02 | 1.50E-02 |
| Vanadium | 5.10E+01 | 2.30E-03 | 5.36E-01 | 1.13E-01 | 1.50E-01 | 7.50E-01 | 1.26E-02 | 1.14E+01 | 1.10E-03 |
| Zinc | 6.50E+03 | 8.60E-03 | 4.88E+03 | 3.64E+02 | 1.23E+02 | **3.00E+00** | 4.05E+01 | 1.45E+01 | **2.80E+00** |
| 1,4-Dichlorobenzene | 5.60E+01 | 1.00E+01 | 2.01E+00 | 2.29E-01 | 8.57E+00 | 2.70E-02 | 2.58E-02 | 8.57E-01 | 3.00E-02 |
| 2,4-Dimethylphenol | 5.60E+01 | 1.00E+01 | 2.14E+02 | 1.56E+01 | 5.00E+00 | **3.10E+00** | 1.74E+00 | 5.00E-01 | **3.50E+00** |
| Benzo(a)pyrene | 6.40E+01 | 1.00E+01 | 4.61E+03 | 3.35E+02 | 4.20E-01 | **8.00E+02** | 3.73E+01 | NA | NA |
| Benzo(b)fluoranthene | 7.40E+01 | 1.00E+01 | 3.05E+03 | 2.22E+02 | 4.20E-01 | **5.30E+02** | 2.47E+01 | 1.40E-05 | **1.80E+06** |
| Chrysene | 7.70E+01 | 1.00E+01 | 1.10E+03 | 8.01E+01 | 4.20E-01 | **1.90E+02** | 8.92E+00 | 1.00E-05 | **8.90E+05** |
| Fluorene | 4.60E+01 | 1.00E+01 | 1.15E+01 | 9.07E-01 | 4.20E-01 | **2.20E+00** | 1.01E-01 | 1.00E+03 | 1.00E-04 |
| Indeno(1,2,3-cd)pyrene | 2.80E+01 | 1.00E+01 | 3.43E+03 | 2.50E+02 | 4.20E-01 | **5.90E+02** | 2.78E+01 | NA | NA |
| Phenol | 5.60E+01 | 1.00E+01 | 2.14E+02 | 1.56E+01 | 6.00E-01 | **2.60E+01** | 1.74E+00 | 6.00E-01 | **2.90E+00** |
| Pyrene | 1.40E+02 | 1.00E+01 | 2.70E+02 | 1.99E+01 | 4.20E-01 | **4.70E+01** | 2.21E+00 | 1.40E-05 | **1.60E+05** |
| 2-Butanone | 7.70E-02 | 1.00E+01 | 9.60E-03 | 1.89E-03 | 1.36E+03 | 1.40E-06 | 5.44E-04 | 1.36E+01 | 4.00E-05 |
| Acetone | 1.70E-01 | 1.20E+01 | 1.70E-02 | 2.78E-03 | 7.70E+00 | 3.60E-04 | 7.09E-04 | 7.70E-02 | 9.20E-03 |
| Carbon disulfide | 3.70E-02 | 1.20E+01 | 1.30E-01 | 1.08E-02 | 1.10E-01 | 9.80E-02 | 1.60E-03 | 1.10E-01 | 1.50E-02 |
| Chlorobenzene | 7.70E-02 | 1.00E+01 | 6.32E-01 | 4.72E-02 | 1.90E+00 | 2.50E-02 | 5.59E-03 | 1.90E-01 | 2.90E-02 |

**NOTES:**

Definitions

NA = not available
NAP = not applicable
HQ = Hazard Quotient
TDI = Total Daily Intake
TRV = Toxicity Reference Value (No Observed Adverse Effects Level)

(1) **Bold** values indicate Hazard Quotients greater than 1.

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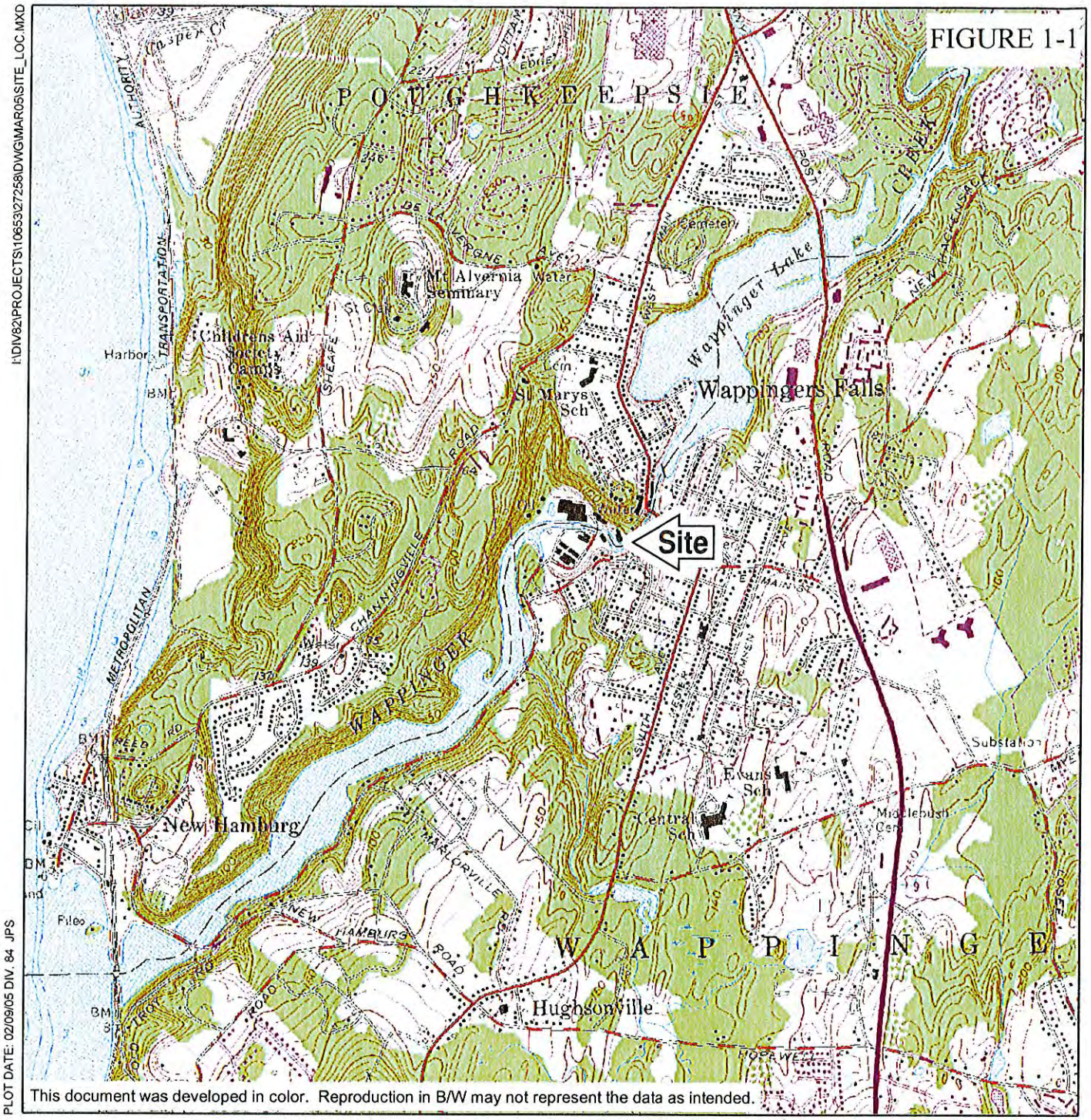
FIGURE 1-1



This document was developed in color. Reproduction in B/W may not represent the data as intended.

PLOT DATE: 02/09/05 DIV. 84 JPS

ADAPTED FROM: WAPPINGER FALLS,NY USGS QUADRANGLE

QUADRANGLE LOCATION

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## SITE LOCATION

0 1,000 2,000 4,000 6,000 8,000
Feet

10653.27258
MARCH 2005

1:24,000

CORIEN & GERE ENGINEERS, INC

**ATTACHMENT 1**

# Fish and Wildlife Impact Analysis
# Step I - Three Star Anodizing Site
# Wappingers Falls, New York

FINAL REPORT

# Fish and Wildlife Impact Analysis Step I - Three Star Anodizing Site Wappingers Falls, New York

New York State Department of
Environmental Conservation
Albany, New York

October 2007

Job No. 10653/27258

# FINAL REPORT

## Fish and Wildlife Impact Analysis
## Step I - Three Star Anodizing Site
## Wappingers Falls, New York

***New York State Department of Environmental Conservation***
***Albany, New York***

Chief Scientist
O'Brien & Gere Engineers, Inc.

October 2007

O'BRIEN & GERE

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# 1. Introduction

This appendix presents the results of a Fish and Wildlife Impact Analysis (FWIA) for the Three Star Site. The FWIA was conducted according to the New York State Department of Environmental Conservation (NYSDEC) document entitled *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites* (NYSDEC 1994; Guidance). Step I - *Site Description* of the NYSDEC document is addressed in this report. The purpose of Step I of an FWIA is to characterize the physical and biological characteristics of a site. The specific objectives of this FWIA are to:

- describe the ecology of the site and surrounding environs within a 0.5 mile radius of the site
- describe fish and wildlife resources including observed vegetation and associated fauna for each covertype within the study area
- identify other resources including NYSDEC significant habitats and endangered, threatened, or species of special concern (ETSC)
- qualitatively describe the value of the identified resources to associated wildlife and humans

The FWIA is organized into five sections:

1. *Introduction*. This section presents general information about the performance of the FWIA, the objectives of the study and the format of the report.

2. *Study area characterization*. This section characterizes the covertypes of the study area based on vegetation, and associates wildlife species with the covertypes. This section also discusses resources other than wildlife, such as NYSDEC significant habitats; ETSC species; surface waters; and freshwater wetlands that exist within a two-mile radius of the site.

3. *Description of fish and wildlife resources*. This section presents a qualitative evaluation of the ability of the study area to provide habitat for wildlife and discusses the value to humans of wildlife resources within the study area.

4. *Identification of fish and wildlife criteria*. This section identifies applicable fish and wildlife regulatory criteria that would be used in additional steps of the FWIA, if conducted.

5. *Conclusions*. This section presents the FWIA conclusions regarding ecological resources within the study area.

# 2. Study Area Characterization

This subsection describes the physical and biological components of the site and study area under current conditions. In accordance with Step I of the Guidance, this information is used to identify the ecological communities of the study area, associate wildlife species with the communities, evaluate the value of the communities to wildlife and humans, and to provide information necessary for the design of future activities associated with the RI/FS, if required.

## 2.1. Site Description

As presented in Section 1 and on Figure 1-1 of the RI, the Three Star Site consists an 8.5 acre industrial facility on the south bank of Wappinger Creek. Several buildings, paved parking areas and access roadways are present on the site. The site is located on the 100-year flood plain along an oxbow of Wappinger Creek. The creek discharges to the Hudson River approximately 1.5 miles downstream and it is subjected to tidal influences of the river (NYSDEC 2000). A raceway that is currently used for stormwater runoff from the village and a lagoon on the southeast portion of the site discharge to Wappinger Creek. The site has been the location of industrial activities for over 150 years. Primary past uses of the site included dye operations, manufactured gas plant (MGP) operations, and metal plating (EA 1986). A number of other smaller industrial activities also took place at the site (O'Brien & Gere 2001). A parcel on the north bank is approximately 5 acres and features an old factory building, a large storage tank, an abandoned smoke stack, a new personal storage building, and paved parking areas (NYSDEC 2000).

## 2.2. Covertype Delineation

Consistent with the Guidance, the study area for the FWIA is defined as the site property and the area within a 0.5 mile radius of the site. The 0.5 mile radius includes the commercial, industrial and residential properties, and terrestrial and aquatic communities. Evaluation of ecological communities (covertypes) in the study area assists in the identification of ecological receptors of the site, which may enter the site from surrounding areas. The following subsections describe the ecological covertypes of the site and study area.

In the context of this report, a "covertype" is defined as an area characterized by a distinct pattern of natural (*e.g.* forest) or cultural (*e.g.* residential) land use. Covertypes of the study area were identified based on the physical and vegetative features observed by an O'Brien & Gere biologist during a study area reconnaissance in July 2001 and from interpretations of local mapping and aerial photographs that included the study area. A map indicating the covertypes of the study area is presented as Figure 2-1. Each covertype designation was selected based on a comparison of observed characteristics with the ecological community descriptions presented in the NYSDEC Natural Heritage Program document *Ecological Communities of New York State* (Reschke 1990).

A total of six covertypes were identified within the study area. Their locations and approximate boundaries are depicted on Figure 2-1. The description of each identified covertype, below, includes a list of dominant woody and herbaceous plant species observed during the study area reconnaissance. Communities within the study area are a mixture of cultural and natural land uses. Roadways, commercial businesses, industrial facilities, recreational parks, and schools comprise the majority of

the cultural areas. Forested areas, palustrine (wetland) habitats and aquatic (open water) communities comprise the natural areas. Descriptions of the identified covertypes are presented below.

## 2.3. Terrestrial Covertypes

The upland communities within the study area consist of approximately equal portions of natural and cultural covertypes. The cultural designation reflects the extent of human disturbance to the study area for land uses such as roadways, railroad beds, commercial businesses, industrial facilities, residences, and parks. Physical characteristics of the residential areas consist of 0.25 acre to 2 acre lots with interspersed paved driveways and access roads. Commercial businesses, recreational parks, and schools are present in portions of the study area, with essentially the same physical characteristics as the residential areas. In general, these areas do not support large or diverse wildlife communities due to their proximity to anthropogenic disturbances.

The natural terrestrial covertypes of the study area, existing primarily in the western half of the study area, are representative of forested communities and are further described below.

*Urban structure exterior*. This covertype is characterized by the exterior surfaces of structures such as commercial buildings, apartment buildings, and bridges in an urban or densely populated suburban area (Reschke 1990). The eastern portion of the study area is comprised mostly of this covertype (Figure 2-1). The areas immediately surrounding the site included in this designation consist of industrial buildings associated with the site, and the residential and commercial structures associated with the Village of Wappinger Falls. Also included in this covertype are sub-communities typical of the *Mowed lawn/Mowed lawn with trees* covertypes. These areas typically contain landscaped areas of ornamental trees, shrubs and grasses.

*Northern hardwood forest (NHF)*. This covertype is characterized by a mixed forest that typically occurs on middle to lower slopes of ravines, mid-elevation slopes, and on moist, well-drained sites (Reschke 1990). Based on the July, 2001 site reconnaissance of this covertype, primarily conducted by vehicle and limited traversing on foot, the NHF area has inclusions of *Hemlock-NHF* and *Maple-basswood rich mesic forest* communities. Additionally, relatively small (less than 3 acres) forested and palustrine wetland habitats are also present within the NHF covertype.

The dominant tree species observed in these communities consisted of 8-inch to 24-inch diameter (at breast height) specimens of hemlock (*Tsuga canadensis*), sugar maple (*Acer saccharum*), basswood (*Tilia americana*) and hickories (*Carya* spp.). The shrub layer, sparse in much of the covertype, included: dogwoods (*Cornus* spp.) raspberries (*Rubus* spp.), wild grape (*Vitus* spp.), honeysuckle (*Lonicera* spp.), and saplings of the tree species identified above. Numerous herbaceous species observed, include, but are not limited to, buttercup (*Ranunculus* spp), cinquefoil (*Potentilla* spp.) and miscellaneous grass species.

## 2.4. Aquatic and Palustrine Covertypes

*Tidal river*. Wappinger Creek, from below the dam at Wappinger Lake to the creek's confluence with the Hudson River approximately 1.5 miles downstream of the site, represents a deepwater estuarine habitat identified in Reschke (1990) as a tidal river. The creek dissects a major portion of the study area as it flows from northeast to southwest.

As presented in the RI, Wappinger Creek is approximately 15 to 20 feet wide in the vicinity of the site and is narrow with higher velocity relative to downstream portions. The daily mean flow of Wappinger Creek measured upstream of Wappinger Lake is 84 cfs and ranges from 6.1 to 1,060 cfs based on 71 years of record. Tide water level fluctuates approximately 4 feet during the normal tide cycle.

Due to the relatively higher velocity, the creek nearest the site has little sediment accumulation and, therefore, aquatic vegetation is minimal or non-existent. The creek bed in this area consists primarily of boulders, rocks, cobble and sand. Further downstream, west and south of the site, the creek widens, sediment accumulation is greater and aquatic vegetation is present. Water chestnut (*Trapa natans*) was the primary species observed. Canopy coverage of the creek ranges from approximately 80 percent in the reach upstream of the site, to approximately 5 percent where the creek exits the study area.

*Eutrophic dimictic lake / artificial impoundment.* Wappinger Lake, existing in and beyond the northeast quadrant of the study area, is representative of a *eutrophic dimictic lake* community. That is, the lake is nutrient rich, has two periods of mixing or turnover (spring and fall), is thermally stratified in the summer and freezes over in the winter. Additionally, because the lake represents an impounded portion of Wappinger Creek, the *artificial impoundment* designation of Reschke (1990) also applies to Wappinger Lake. The lake consists primarily of open water with much of the shallow water and shoreline areas containing floating, submerged and emergent aquatic vegetation including, but not limited to, duckweed (*Lemna* spp.), water chestnut and common reed (*Phragmites*). The lake was surrounded with human residences and forested areas.

*Midreach stream.* An open water aquatic community existing in Reese Park located approximately 2000 feet southwest of the site is representative of a *midreach stream* covertype. As this covertype has been defined in Reschke (1990), this unnamed stream has a well-defined pattern of alternating pool, riffle and run sections. The stream traverses a forested area of the public park, eventually discharging to Wappinger Creek. The channel of the creek is approximately 5 feet wide and contained approximately 6 inches of water at the time of the study area reconnaissance. Emergent vegetation was not observed within the creek. The banks of the creek are approximately 2 feet high and vegetated with goldenrod, purple loosestrife (*Lythrum salicaria*) and *Phragmites*.

*Palustrine habitats* (wetlands). As noted on Figures 2-1 and 2-2, numerous wetland habitats exist in the study area. Most of these wetlands are relatively small (less than 3 acres) and exist within the NHF covertype. The observed wetland habitats are representative of *open* and *forested mineral soil wetlands* as classified in Reschke (1990). Generally, these areas consist of open water areas with submerged and aquatic vegetation existing in the shoreline areas. Additional discussion concerning wetlands is presented in Section 3.4.

Two lagoons existing on or adjacent to the site boundaries are identified as wetland habitats on Figures 2-1 and 2-2. The lagoon existing on the west portion of the main site, as described in the RI, is reportedly unlined and covers approximately 0.5 acres of the site. Village storm water drains to the lagoon via the former raceway located along the east boundary of the site. The lagoon reportedly received industrial wastes during operation of Three Star Anodizing Company. Other industrial wastes may have also drained in the direction of the lagoon. At the time of the site reconnaissance, this lagoon contained approximately 3 feet of open water that was covered with duckweed. The substrate, as observed from the eastern shoreline/stonewall was comprised of organic sediment approximately 10 to 24 inches thick and gross organic debris (leaves, sticks and logs). A swale area

was observed leading from this lagoon to Wappinger Creek. The swale did not contain surface water at the time of the site reconnaissance.

A second lagoon, approximately 0.2 acre in size, exists off-site north of Wappinger Creek near the downstream bridge and paved parking lot. The lagoon contained approximately 18 to 24 inches of relatively clear water with a sandy substrate at the time of the site reconnaissance. Submerged vegetation (likely pondweed) existed over approximately one-third of the lagoon area. It appears the lagoon receives runoff from the higher elevations north of the site, and discharges into Wappinger Creek.

# 3. Description of Fish and Wildlife Resources

The objective of this section is to identify potential ecological receptors of the study area based on observations conducted during the study area reconnaissance or by reasonable association of these resources with the identified covertypes. The results of the tasks performed to meet the objective are discussed in the following subsections.

## 3.1. Fish and Wildlife of the Study Area

The presence of fish and wildlife in the study area was assessed through contact with regulatory agencies, a literature review, and the study area reconnaissance performed by an O'Brien & Gere biologist in July 2001. During the study area reconnaissance, wildlife were identified based on actual sightings; audible indicators such as bird songs; or other indicators such as tracks, burrows, or scat. A listing of the fish and wildlife species that were either directly observed or concluded to be present based on observed indicators is presented below.

*Observed fish and wildlife.* Numerous avian species were observed frequenting the site and/or the study area at the time of the site reconnaissance, including, but not limited to: song sparrow (*Melospiza melodia*), Eastern phoebe (*Sayornis phoebe*), chimney swift (*Chaetura pelagica*), cedar waxwing (*Bombycilla cedrorum*), downy woodpecker (*Picoides pubescens*), American goldfinch (*Carduelis tristis*), tree swallow (*Tachycineta bicolor*), Northern cardinal (*Cardinalis cardinalis*), American robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), Canada goose (*Branta canadensis*) and belted kingfisher (*Ceryle alcyon*).

Additional species observed in the study area include: white-tailed deer (*Odocoileus virginianus*), Eastern gray squirrel (*Sciurus carolinensis*) and green frog (*Rana clamitans*). Numerous attempts were conducted to observe aquatic invertebrates within Wappinger Creek by turning over the cobble and boulders of the substrate. However, aquatic invertebrates were not observed at the time of the site reconnaissance.

## 3.2. Fauna Expected within each Covertype

In addition to the observed wildlife, a variety of wildlife species typically inhabit the natural communities of the study area. The *northern hardwood forest*, Wappinger Creek, Wappinger Lake and wetland covertypes are likely to contain the most diverse wildlife populations.

Characteristic wildlife of the *northern hardwood forest* community include, but are not limited to various avian species, (songbirds, turkey, partridge, hawks and owls); small mammals (raccoon, fox) and large mammals such as white-tailed deer. The aquatic and palustrine habitats within the study area are likely to support benthic invertebrates, reptiles (snakes and turtles), amphibians (frogs, toads, salamanders), fish, waterfowl (ducks and geese), herons, shorebirds, gulls, kingfishers, and songbirds. Additionally, Wappinger Creek likely supports anadromous fish species such as striped bass (*Morone saxatilis*) and blueback herring (*Alosa aestivalis*). Potential wildlife inhabitants of the study area's natural covertypes are presented in Table 3-1. Additionally, a list of the breeding birds of the site vicinity, as recorded by the New York State Breeding Bird Atlas project, is presented in Attachment A.

## 3.3. Observation of Stress

During the study area reconnaissance, evidence of stress to flora or fauna related to the site, such as reduced vegetative growth or density, stained soils, leachate seeps, or wildlife mortality, were not observed in the study area.

## 3.4. Other Resources

Consistent with the FWIA Guidance, Step I includes the identification of other fish and wildlife resources, such as significant wildlife habitats; ETSC species; regulated wetlands; or special surface waters that are present within two miles of the site. Special resources were identified through contact with regulatory agencies and review of New York State Freshwater Wetlands (NYSFW) and National Wetland Inventory (NWI) maps. The results of these efforts are described below.

*Significant habitats and endangered, threatened, or species of special concern.* The presence of significant habitats and ETSC species in the study area was evaluated through contact with the New York Natural Heritage Program (NYNHP) and the United States Fish and Wildlife Service (USFWS). Letter responses received by O'Brien & Gere from these agencies are included with this report as Attachment A. The approximate location of the identified special resources, relative to the site, is presented on Figure 2-2.

The USFWS indicated that, except for occasional transient individuals, there are no federally-listed or proposed endangered or threatened species in the vicinity of the site.

The NYNHP database has record of the following protected species within two miles of the site: bald eagle (*Haliaeetus leucocephalus*), shortnose sturgeon (*Acipenser brevirostrum*), pied-billed grebe (*Podilymbus podiceps*), spongy arrowhead (*Sagittaria calycina* var. *spongiosa*), and estuary beggar-ticks (*Bidens bidentoides*). Additionally, the NYNHP identified the following ecological communities in the vicinity of the study area: anadromous fish concentration area, freshwater intertidal mudflats and freshwater tidal marsh. In accordance with NYNHP policy, the exact location of the reported special resources has been omitted from the Attachment.

*Wetlands*. The potential presence of freshwater wetlands in the study area was evaluated through a review of the Wappinger Falls quadrangle of the NYSFW map and the USFWS NWI map. The NYSFW map presents the boundaries of wetlands regulated and identified by NYSDEC. Seven state regulated wetlands were identified within two miles of the site perimeter (Figure 2-2).

Numerous NWI wetland habitats were identified within two miles of the site perimeter including many in similar locations as the state-regulated wetlands (see Figure 2-2). The NWI map presents wetlands inventoried by USFWS to monitor waterfowl habitat. The NWI maps have no regulatory significance but provide an indication of areas potentially meeting the federal criteria for wetlands regulated by the U.S. Army Corps of Engineers.

*Surface waters.* Wappinger Creek, Wappinger Lake, the Hudson River and associated tributaries are present within two miles of the site. A description of the creek and lake is presented in Section 2.4. The Hudson River is recognized by multiple federal, state and/or local agencies as valuable habitat for numerous fish and wildlife species.

Wappinger Creek from its mouth (at the Hudson River, approximately 1.5 miles southwest of the site) to Wappinger Lake (approximately 2000 feet northeast of the site) is a Class C water body with a Standard of C(T) (6NYCRR Part 857.2 (h)). Classification C is for waters that are designated to be suitable for fish propagation and survival, and suitable for primary and secondary contact recreation (6NYCRR Part 701.8). Standard T indicates that the water body is designated as trout waters and that the dissolved oxygen specification for trout waters applies (6NYCRR Part 931.2(g)).

Wappinger Lake is identified by NYSDEC's Division of Environmental Permits (www.dec.state.ny.us/website/dcs) as a Critical Environmental Area. Wappinger Lake is designated as a Class B water body, indicating its best use is swimming and other contact recreation, but not for drinking water.

## 3.5. Description of Fish and Wildlife Resource Value

The value of the covertypes to wildlife and society was evaluated based on habitat requirements of identified wildlife species and potential resource utilization by humans. In accordance with Step I of the Guidance, habitat requirements such as feeding preferences, home range, and cover for species identified in the study area were considered. Field observations used to evaluate habitat quality included: 1) the diversity of observed wildlife, 2) the availability of suitable habitat in the study area, 3) the size of the habitat, and 4) adjacent land use patterns.

### 3.5.1. Value of Habitat to Associated Fauna

*Site*. Terrestrial wildlife species identified in the study area were consistent with those expected to inhabit terrestrial and aquatic environments existing in suburban environments. Although some cover is afforded to birds and small mammals on the site, the gravel, asphalt and mowed lawn areas of the upland portions of the site do not provide sufficient food sources or nesting areas to make the site attractive to a high diversity of species. Therefore, the value of the site's upland habitat to wildlife is concluded to be low.

The portion of Wappinger Creek in vicinity of the site provides a foraging area for piscivorous animals frequenting the area and habitat for aquatic species including, but not limited to, warm water fish populations. Additionally, the on-site and off-site lagoons provide marginal habitat for aquatic receptors.

*Study area*. For the majority of the terrestrial cultural portions of the study area, suitable wildlife habitat to support a diverse or natural wildlife population is limited. These areas have limited vegetation and food sources and, therefore, provide inadequate resources to sustain a healthy and diverse wildlife community because of the high degree of development. Based on these considerations, the wildlife habitat value of the terrestrial cultural areas, including the *urban structure exterior* covertype, was considered to be low.

The *northern hardwood forest*, aquatic and wetland covertypes of the study area offer the most valuable habitat within the study area. Avian and small mammal species find suitable food and cover in these areas. Indicators of use of this covertype by other mammals such as muskrat (*Ondatra zibethicus*), beaver (*Castor canadensis*), fox, and deer were not observed during the study area reconnaissance; however, these species likely inhabit these areas.

Portions of Wappinger Creek and Wappinger Lake within the study area are likely important fish habitat. Additionally, the undeveloped areas surrounding these water bodies likely serve as a forage, nesting and roosting area for local and migratory wildlife.

### 3.5.2. Value of Resources to Humans

*Site.* The current character of the undeveloped areas of the site provides little value to humans, due in part to the relatively small size and restricted access.

*Study Area.* The *northern hardwood forest* areas of the study area likely provide opportunity for hiking and similar forms of outdoor recreation, including small and large mammal hunting. Similarly, Wappinger Creek and Wappinger Lake provide ample recreation opportunities for the public, including boating and year-round fishing.

The palustrine areas within the study area provide a number of wetland-related values to the public. These values include flood storage capacity, sediment/toxicant retention, productivity, and wildlife habitat. These characteristics assist in maintaining water quality in areas downstream of these habitats.

# 4. Identification of Applicable Fish and Wildlife Regulatory Criteria

Step I-D of the Guidance identifies contaminant-specific and site-specific criteria that are potentially applicable to the evaluation of fish and wildlife resources. The following sections describe these criteria.

## 4.1. Contaminant-Specific Criteria

The Guidance identifies New York State Water Quality Standards and Guidance Values, NYSDEC Division of Water Technical and Operational Guidance Series, and NYSDEC Technical Guidance for Screening Contaminated Sediments as examples of contaminant-specific criteria. These criteria, and other potentially applicable comparison values, are listed in the following table.

| Environmental Media | Potentially Applicable Criteria, Standards, or Guidance |
|---|---|
| Soil | - NYSDEC has no established ecologically based criteria for contaminated soils<br>- Toxicological Benchmarks (Efroymson ***et al***. 1997a, 1997b)<br>- Ecological Soil Screening Level Guidance (USEPA 2000) |
| Surface Water | - New York State water quality standards for the protection of aquatic life and wildlife (6 NYCRR Part 701)<br>- NYSDEC Division of Water TOGS 1.1.1 (1998)<br>- USEPA 1999 |
| Sediments | - Technical Guidance for Screening Contaminated Sediments (NYSDEC 1999)<br>- Persaud ***et al***. 1993 |

## 4.2. Site-Specific Criteria

Site-specific criteria identified in the FWIA Guidance include the Freshwater Wetlands Act (1975) and its implementing regulations (New York State Environmental Conservation Law [ECL] Article 24, 6 NYCRR Parts 663 and 664), and the laws and regulations governing streams and navigable water bodies (ECL Article 15, 6 NYCRR Part 608).

The Freshwater Wetlands Act (1975) is designed to prevent the destruction of freshwater wetlands by requiring permits for defined activities in wetlands. The Use and Protection of Waters is regulated by a permit system under 6 NYCRR Part 608. The basis for permit issuance is a determination that the proposal is in the public interest by being reasonable and necessary; will not endanger the health, safety, or welfare of the people; and will not cause unreasonable, uncontrolled, or unnecessary damage to the natural resources of the state.

# 5. Conclusions

This FWIA evaluated the physical and biological characteristics and potential ecological receptors at the Three Star Site in Wappinger Falls, New York. Step I of the FWIA Guidance was performed for this assessment. The results and conclusions of this assessment are presented below.

- The terrestrial portion of the site is developed with buildings, asphalt, and/or maintained lawns, which prevent or limit use by transient or residential wildlife species. Ecological receptors are unlikely to utilize the terrestrial portions of the site due to the lack of and/or poor quality habitat.

- Aquatic areas existing on-site include a portion of Wappinger Creek and the on-site and off-site lagoons. The lagoon areas provide limited habitat for foraging and resting for aquatic receptors. Wappinger Creek likely provides appropriate habitat for a variety of fish and other wildlife species that frequent aquatic habitats.

- The terrestrial areas surrounding the site and within the study area consist of a mixture of natural communities and areas exhibiting urban/suburban land use. The eastern portion of the study area is developed and consists of residential and light commercial areas which prevent or limit use by transient or residential wildlife species.

- The western portion of the study area consists largely of natural covertypes (northern hardwood forest, freshwater wetland and open water areas) that provide appropriate habitat for a variety of fish and wildlife species.

- Wappinger Creek and Wappinger Lake are located within the study area and likely contain high quality habitat for a variety of small mammal, avian, reptilian, amphibian and fish species.

- The NYSDEC and NYNHP has identified rare and/or protected flora and fauna and significant natural communities within a two-mile radius of the site. The protected species and communities are primarily associated with the aquatic, open water areas including Wappinger Creek, Wappinger Lake and the Hudson River.

- Federal and state wetlands were identified on and in the vicinity of the site. Several state-regulated wetlands and NWI wetland habitats are located within two miles of the site.

Potentially complete exposure pathways to terrestrial and aquatic receptors likely exist at the site. Results of the Phase II RI will be used to plan additional steps of the FWIA process.

## References

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USEPA 1999. *National Recommended Water Quality Criteria.* Washington, DC.

# Tables

**Table 3-1.** *Potential wildlife inhabitants of the identified natural covertypes*

| AMPHIBIANS | |
|---|---|
| American Toad | Northern Two-lined Salamander |
| Bullfrog | Pickerel Frog |
| Eastern Newt | Red back Salamander |
| Eastern Tiger Salamander | Red-spotted Newt |
| Four-toed Salamander | Slimy Salamander |
| Fowler's Toad | Southern Leopard Frog |
| Gray Treefrog | Spotted Salamander |
| Green Frog | Tiger Salamander |
| Jefferson Salamander | Western Chorus Frog |
| Marbled Salamander | Wood Frog |
| Mink Frog | |
| Mountain Dusky Salamander | |
| Northern Dusky Salamander | |
| Northern Red Salamander | |
| Northern Spring Peeper | |
| Northern Spring Salamander | |

SOURCES:
*Integrating Timber and Wildlife Management.* Robert E. Chambers. New York State Department of Environmental Conservation and State University of New York. College of Environmental Science and Forestry. 1983.

**Table 3-1.** *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

| REPTILES | |
|---|---|
| Black Rat Snake | Eastern Worm Snake |
| Broadhead Skink | Five-lined Skink |
| Coal Skink | Ground Skink |
| Common Garter Snake | Milk Snake |
| Common Kingsnake | Northern Black Racer |
| Common Snapping Turtle | Northern Brown Snake |
| Copperhead | Northern Copperhead |
| Corn Snake | Northern Redbelly Snake |
| Eastern Box Turtle | Northern Ringneck Snake |
| Eastern Garter Snake | Northern Water Snake |
| Eastern Hognose Snake | Painted Turtle |
| Eastern Milk Snake | Queen Snake |
| Eastern Painted Turtle | Shorthead Garter Snake |
| Eastern Ribbon Snake | Wood Turtle |
| Eastern Smooth Green Snake | |

SOURCES:
*Integrating Timber and Wildlife Management.* Robert E. Chambers. New York State Department of Environmental Conservation and State University of New York. College of Environmental Science and Forestry. 1983.

**Table 3-1.** *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

| BIRDS | |
|---|---|
| Acadian Flycatcher | Common Screech Owl |
| Alder Flycatcher | Common Yellowthroat |
| American Robin | European Starling |
| American Black Duck | Field Sparrow |
| American Crow | Grasshopper Sparrow |
| American Goldfinch | Northern Rough-winged Swallow |
| American Redstart | Northern Shrike |
| American Kestrel | Northern Three-toed Woodpecker |
| Bald Eagle | Pine Siskin |
| Bank Swallow | Prairie Warbler |
| Barn Owl | Red-eyed Vireo |
| Barn Swallow | Ring-billed Gull |
| Barred Owl | Yellow-billed Cuckoo |
| Bay-breasted Warbler | Yellow-rumped Warbler |
| Belted Kingfisher | Cape May Warbler |
| Black Duck | Cardinal |
| Black and White Warbler | Chipping Sparrow |
| Black-billed Cuckoo | Cedar Waxwing |
| Black-capped Chickadee | Chestnut-sided Warbler |
| Black-crowned Night Heron | Cerulean Warbler |
| Black-throated Green Warbler | Clay-colored Sparrow |
| Blackburnian Warbler | Cliff Swallow |
| Blackpoll Warbler | Common Crow |
| Blue Jay | Common Flicker |
| Blue-gray Gnatcatcher | Common Grackle |
| Blue-winged Warbler | Common Nighthawk |
| Boreal Chickadee | Common Merganser |
| Broad-winged Hawk | Cooper's Hawk |
| Brown Thrasher | Downy Woodpecker |
| Brown Creeper | Eastern Bluebird |
| Brown-headed Cowbird | Eastern Kingbird |
| Canada Warbler | Eastern Pewee |
| Great Crested Flycatcher | Eastern Phoebe |
| Great Blue Heron | Eastern Screech Owl |
| Great Horned Owl | Eastern Wood-Pewee |
| Green Heron | Evening Grosbeak |

**Table 3-1.** *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

BIRDS

Hairy Woodpecker
Hermit Thrush
Herring Gull
Hooded Merganser
Hooded Warbler
House sparrow
House Wren
House Finch
Indigo Bunting
Killdeer
Least Flycatcher
Loggerhead Shrike
Long-eared Owl
Louisiana Waterthrush
Mallard
Mourning Dove
Mourning Warbler
Nashville Warbler
Northern Parula Warbler
Northern Parula
Northern Oriole
Northern Mockingbird
Northern Cardinal
Northern Junco
Northern Goshawk
Northern Flicker
Rusty Blackbird
Rufous-sided Towhee
Ruffed Grouse
Ruby-throated Hummingbird
Rock dove
Ruby-crowned Kinglet
Rose-breasted Grosbeak
Swainsons Thrush
Swamp Sparrow
Tennessee Warbler
Golden-crowned Kinglet
Gray Catbird
Golden-winged Warbler
Gray Jay
Northern Saw-whet
Northern Raven
Northern Waterthrush
Orchard Oriole
Osprey
Ovenbird
Philadelphia Vireo
Pileated Woodpecker
Peregrine Falcon
Pine Warbler
Prothonotary Warbler
Purple Finch
Red-bellied Woodpecker
Red-breasted Nuthatch
Red-headed Woodpecker
Red-shouldered Hawk
Red-tailed Hawk
Red-winged Blackbird
Ring-necked Pheasant
Warbling Vireo
Whip-poor-will
White-breasted Nuthatch
White-eyed Vireo
White-throated Sparrow
Willow Flycatcher
Winter Wren
Wood Pewee
Wood Thrush
Wood Duck
Worm-eating Warbler
Yellow-breasted Chat
Yellow Warbler

**Table 3-1.** *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

| BIRDS | |
|---|---|
| Tree Swallow | Yellow-bellied Flycatcher |
| Tufted Titmouse | Yellow-bellied Sapsucker |
| Turkey Vulture | Yellow-throated Vireo |
| Upland sandpiper | |
| Veery | |

SOURCES:
*Field Guide to the Birds of North America* 2nd Edition. National Geographic Society. 1993.
*Integrating Timber and Wildlife Management.* Robert E. Chambers. New York State Department of Environmental Conservation and State University of New York. College of Environmental Science and Forestry. 1983.

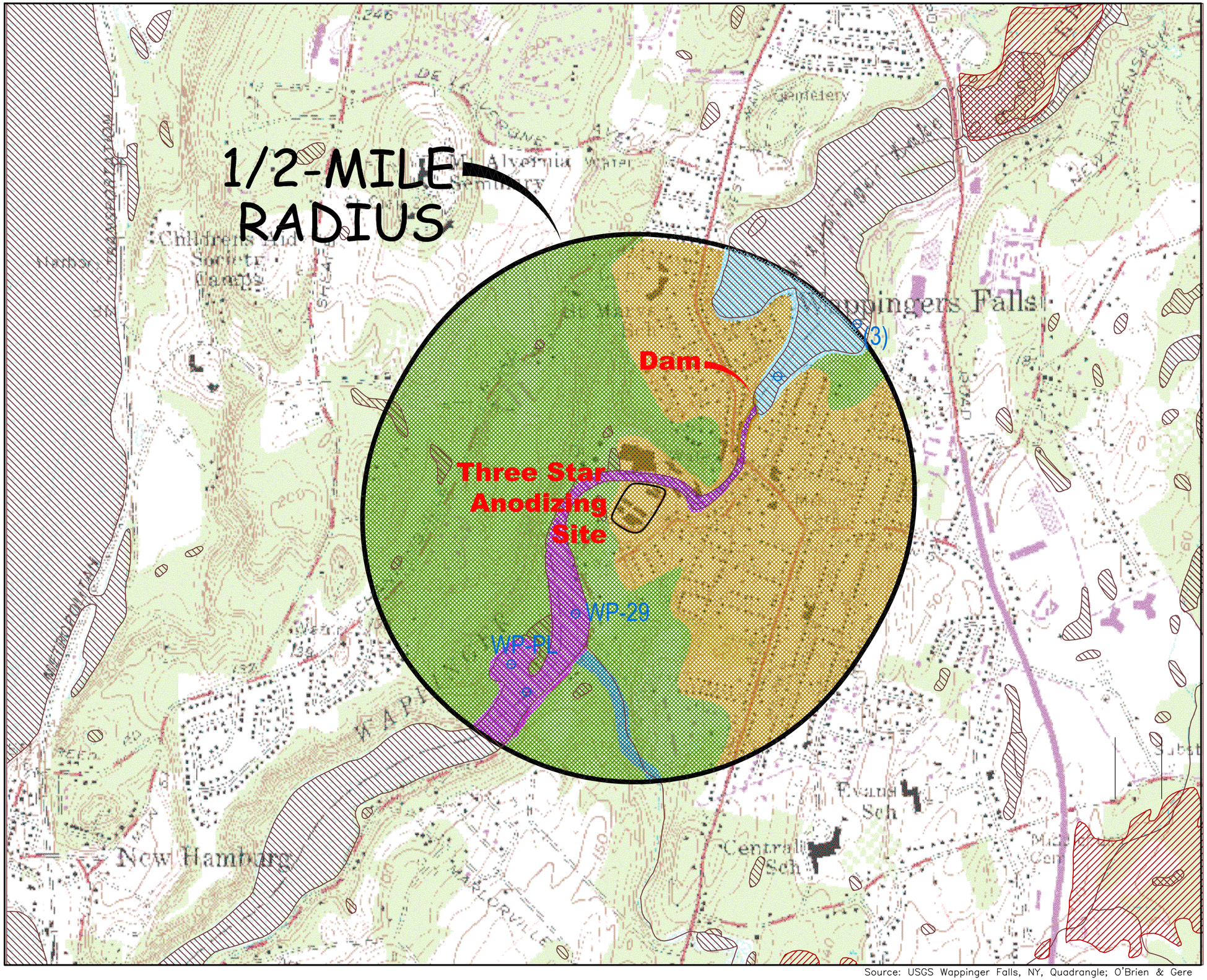
**Table 3-1.** *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

| MAMMALS | |
|---|---|
| Beaver | New England Cottontail |
| Big Brown Bat | Northern Flying Squirrel |
| Boreal Red-backed Vole | Opossum |
| Cotton Mouse | Pine Vole |
| Deer Mouse | Porcupine |
| Eastern Chipmunk | Raccoon |
| Eastern Cottontail | Red Bat |
| Eastern Mole | Red Fox |
| Eastern Pipistrelle | Red Squirrel |
| Eastern Spotted Skunk | River Otter |
| Eastern Woodrat | Shorttail Shrew |
| Fox Squirrel | Shorttail Weasel |
| Gray Fox | Silver-haired Bat |
| Gray Squirrel | Smoky Shrew |
| Hairytail Mole | Southern Bog Lemming |
| Hoary Bat | Southern Flying Squirrel |
| Indiana Myotis | Starnose Mole |
| Keen Myotis | Striped Skunk |
| Least Shrew | Virginia Opossum |
| Little Brown Myotis | White-footed Mouse |
| Long-tailed Weasel | White-tailed Deer |
| Masked Shrew | Woodchuck |
| Meadow Jumping Mouse | Woodland Jumping Mouse |
| Meadow Vole | Woodland Vole |
| Mink | |

SOURCES:
*Field Guide to the Birds of North America* 2nd Edition. National Geographic Society. 1993.
*Integrating Timber and Wildlife Management.* Robert E. Chambers. New York State Department of Environmental Conservation and State University of New York. College of Environmental Science and Forestry. 1983.

# Figures

FIGURE 2–1




## LEGEND

Note: Boundaries are approximate.

- NWI Habitat
- NYS Wetland
- Urban Structure Exterior
- Northern Hardwood Forest
- Tidal River
- Eutrophic Dimictic Lake
- Midreach Stream

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK
FISH & WILDLIFE
IMPACT ANALYSIS

COVERTYPE

1000' 0 1000'

FILE NO. 10653–27258.004
OCTOBER 2007

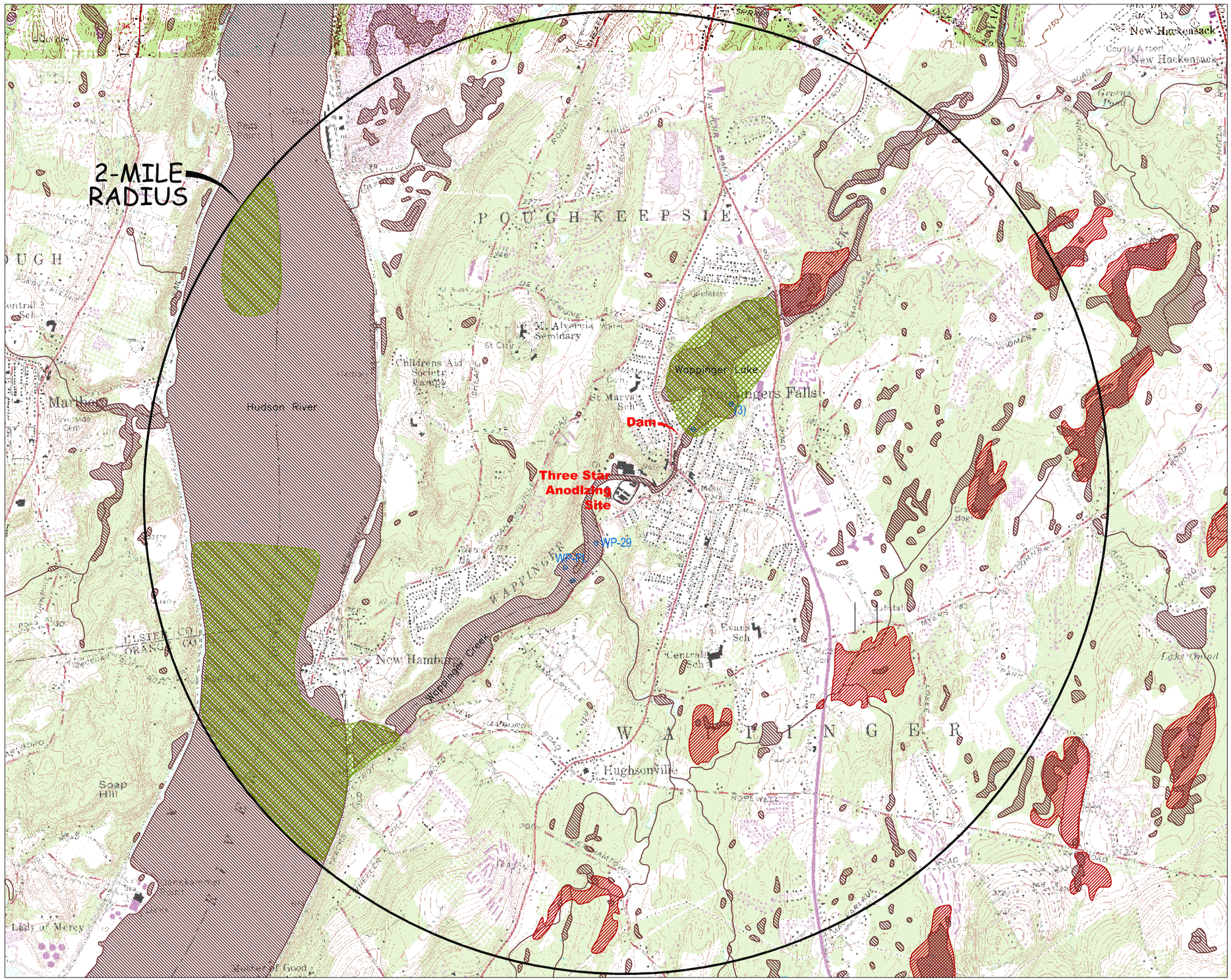
O'BRIEN & GERE ENGINEERS INC.

Source: USGS Wappinger Falls, NY, Quadrangle; O'Brien & Gere

DWG PATH: I:\DIV82\PROJECTS\10653\27258\DWGS\WETLANDS.DWG SF=??

PLOT DATE: 09/17/01 DIV82 baq

FIGURE 2–2




Source: USGS Wappinger Falls, NY, Quadrangle; O'Brien & Gere

## LEGEND

- NWI Habitat
- NYS Wetland
- Approximate location of NYSDEC Ecological Communities and/or Rare Plants and Animals

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK
FISH & WILDLIFE
IMPACT ANALYSIS

DOCUMENTED
NATURAL
RESOURCES

2500' 0 2500'

FILE NO. 10653–27258.004
OCTOBER 2007

O'BRIEN & GERE ENGINEERS, INC.

DWG PATH: I:\DIV82\PROJECTS\10653\27258\DWGS\WETLANDS.DWG SF=??

PLOT DATE: 09/17/01 DIV82 baq

# Attachment A

# USFWS and NHP information request letter responses

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 LUKER ROAD
CORTLAND, NY 13045


May 31, 2001

Mr. Stephen E. Mooney
Project Scientist
O'Brien & Gere Engineers, Inc.
P.O. Box 4873
Syracuse, NY 13221-4873

Dear Mr. Mooney:

This responds to your letter of April 16, 2001, requesting information on the presence of endangered or threatened species in the vicinity of the Three Star Anodizing Site in the City of Wappingers Falls, Dutchess County, New York.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. In addition, no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under other legislation.

For additional information on fish and wildlife resources or State-listed species, we suggest you contact the appropriate New York State Department of Environmental Conservation regional office(s) as shown on the enclosed map, and:

New York State Department of Environmental Conservation
New York Natural Heritage Program-Information Services
625 Broadway
Albany, NY 12233
(518) 402-8935

We are not aware of any Federally designated wild, recreational, or scenic rivers at or in the vicinity of the Three Star Anodizing Site. National Wetlands Inventory (NWI) maps may or may not be available for the project area. However, while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or

delineating wetland boundaries for Federal regulatory purposes. Copies of specific NWI maps can be obtained from:

Cornell Institute for Resource Information Systems
302 Rice Hall
Cornell University
Ithaca, NY 14853
(607) 255-4864

Work in certain waters and wetlands of the United States may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without stipulations, or recommend denial of the permit depending upon the potential adverse impacts on fish and wildlife resources associated with project implementation. The need for a Corps permit may be determined by contacting the appropriate Corps office(s) as shown on the enclosed map.

If you require additional information please contact Michael Stoll at (607) 753-9334.

Sincerely,

Mark W. Clough

Acting For
David A. Stilwell
Field Supervisor

Enclosure

cc: NYSDEC, New Paltz, NY (Environmental Permits)
NYSDEC, Albany, NY (Natural Heritage Program)
COE, New York, NY

**New York State Department of Environmental Conservation**
**Division of Fish, Wildlife & Marine Resources**
**Wildlife Resources Center – New York Natural Heritage Program**
700 Troy-Schenectady Road, Latham, New York 12110-2400
Phone: (518) 783-3932 FAX: (518) 783-3916

John P. Cahill
Commissioner

May 15, 2001

Stephen E Mooney
O'Brien & Gere Engineers Inc
5000 Brittonfield Pkwy, PO Box 4873
Syracuse, NY 13221

RECEIVED
MAY 18 2001

Dear Mr. Mooney:

In response to your recent request, we have reviewed the New York Natural Heritage Program databases with respect to the proposed Remedial Investigation of the Three Star Anodizing Site, area as indicated on the map you provided, including a two-mile radius, located in the Town of Wappingers Falls, Dutchess County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

Your project site is not within or adjacent to a NYS Wildlife Management Area. Please check with local agencies and organizations for any local wildlife preserve areas.

Your project location is within, or adjacent to, a designated Significant Coastal Fish and Wildlife Habitat. This habitat is part of New York State's Coastal Management Program (CMP), which is administered by the NYS Department of State (DOS). Projects which may impact the habitat are reviewed by DOS for consistency with the CMP. For more information regarding this designated habitat and applicable consistency review requirements, please contact:

Greg Capobianco or Steven C. Resler - (518) 474-6000
NYS Department of State
Division of Coastal Resources and Waterfront Revitalization
41 State Street, Albany, NY 12231

The presence of rare species may result in your project requiring additional permits, permit conditions, or review. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Heidi Krahling jp

Heidi J. Krahling
Information Services
NY Natural Heritage Program

Encs.
cc: Reg. 3, Wildlife Mgr.
Reg. 3, Fisheries Mgr.
Peter Nye, Endangered Species Unit, Delmar
Pat Festa, Bureau of Fisheries, Albany

PLEASE NOTE:

As of June 1, 2001, our new address will be:

NYS DEC - Information Services
NY Natural Heritage Program
625 Broadway, 5th floor
Albany, NY 12233-4754
(518) 402-8935

# Natural Heritage Report on Rare Species and Ecological Communities

Prepared 14 May 2001 by NY Natural Heritage Program, NYS DEC, Latham, New York

This report contains SENSITIVE information that should be treated in a sensitive manner -- Please see cover letter. Refer to the Users' Guide for explanations of codes, ranks, and fields. We do not always provide maps of locations of species most vulnerable to disturbance, nor of some records whose locations and/or extents are not precisely known or are too large to display.



| County<br>** Town<br>Scientific Name,<br>COMMON NAME, &<br>Group Name | NY Legal Status,<br>Heritage Ranks, &<br>Federal Status | EO Rank,<br>Last Seen, &<br>Acreage | Detailed Location | General Habitat<br>and Quality | Office<br>Use |
|---|---|---|---|---|---|
| * DUTCHESS | | | | | |
| ** POUGHKEEPSIE,<br>WAPPINGER | | | | | |
| *Podilymbus podiceps*<br>PIED-BILLED GREBE<br>Bird | THREATENED<br>G5; S3B,S1N | E<br>1983<br>0.00 | | | 4107358<br>ESU |
| ** WAPPINGER,<br>POUGHKEEPSIE | | | | | |
| ANADROMOUS FISH<br>CONCENTRATION AREA<br>Other | UNPROTECTED<br>; S3 | E<br>1986<br>222.00 | | | 4107358<br>S |
| *Bidens bidentoides*<br>ESTUARY BEGGAR-TICKS<br>Vascular Plant | RARE<br>G3; S3 | D<br>1985-08-08<br>1.00 | | | 4107358<br>S |
| FRESHWATER INTERTIDAL<br>MUDFLATS<br>Community | UNPROTECTED<br>G3G4; S2 | BC<br>1988-09-07<br>2.00 | | | 4107358<br>S |

# Natural Heritage Report on Rar pecies and Ecological Communities

Prepared 14 May 2001 by NY Natural Heritage Program, NYS DEC, Latham, New York

This report contains SENSITIVE information that should be treated in a sensitive manner -- Please see cover letter. Refer to the Users' Guide for explanations of codes, ranks, and fields. We do not always provide maps of locations of species most vulnerable to disturbance, nor of some records whose locations and/or extents are not precisely known or are too large to display.



| * County<br>** Town<br>Scientific Name, COMMON NAME, & Group Name | NY Legal Status, Heritage Ranks, & Federal Status | EO Rank, Last Seen, & Acreage | Detailed Location | General Habitat and Quality | Office Use |
|---|---|---|---|---|---|
| * DUTCHESS<br>** WAPPINGER, POUGHKEEPSIE | | | | | |
| FRESHWATER TIDAL MARSH<br>Community | UNPROTECTED<br>G3G4; S2 | C<br>1988-09-07<br>5.00 | | | 4107358<br>S |
| *Sagittaria calycina var spongiosa*<br>SPONGY ARROWHEAD<br>Vascular Plant | THREATENED<br>G5T4; S2 | A<br>1985-08-08<br>11.00 | | | 4107358<br>S |
| * DUTCHESS, ULSTER<br>** CITY OF POUGHKEEPSIE, POUGHKEEPSIE, HYDE PARK, ESOPUS, LLOYD, MARLBOROUGH | | | | | |
| *Acipenser brevirostrum*<br>SHORTNOSE STURGEON<br>Fish | ENDANGERED<br>G3; S1<br>LE | A<br>1986<br>4,480.00 | | | 4107368<br>S<br>BOF |
| * ORANGE, ULSTER<br>** NEWBURGH, MARLBOROUGH | | | | | |

# Natural Heritage Report on Rare Species and Ecological Communities

Prepared 14 May 2001 by NY Natural Heritage Program, NYS DEC, Latham, New York

This report contains SENSITIVE information that should be treated in a sensitive manner -- Please see cover letter. Refer to the Users' Guide for explanations of codes, ranks, and fields. We do not always provide maps of locations of species most vulnerable to disturbance, nor of some records whose locations and/or extents are not precisely known or are too large to display.



| * County<br>** Town<br>Scientific Name, COMMON NAME, & Group Name | NY Legal Status, Heritage Ranks, & Federal Status | EO Rank, Last Seen, & Acreage | Detailed Location | General Habitat and Quality | Office Use |
|---|---|---|---|---|---|
| * ORANGE, ULSTER | | | | | |
| ** NEWBURGH, MARLBOROUGH | | | | | |
| *Haliaeetus leucocephalus*<br>BALD EAGLE<br>Bird | THREATENED<br>G4; S2S3B,S2N<br>(PS:LT,PDL) | D<br>1998-01-21<br>300.00 | | | 4107358<br>S<br>ESU |
| * ORANGE, ULSTER, DUTCHESS | | | | | |
| ** NEWBURGH, MARLBOROUGH, WAPPINGER, POUGHKEEPSIE | | | | | |
| *Haliaeetus leucocephalus*<br>BALD EAGLE<br>Bird | THREATENED<br>G4; S2S3B,S2N<br>(PS:LT,PDL) | D<br>1998-01-21<br>987.00 | | | 4107358<br>S<br>ESU |

9 Records Processed

## New York State Breeding Bird Atlas
## Breeding Species for Block Number(s):
## 5860A, 5860B, 5860C, 5860

| Common Name | Scientific Name | Breeding Class | Year | New York Legal Status | Heritage State Rank |
|---|---|---|---|---|---|
| Pied-billed Grebe | Podilymbus podiceps | FL | 83 | Threatened | S3 |
| Great Blue Heron | Ardea herodias | X1 | 85 | Protected | S5 |
| Green Heron | Butorides virescens | FY | 84 | Protected | S5 |
| Mute Swan | Cygnus olor | NE | 84 | Protected | SE |
| Canada Goose | Branta canadensis | NE | 84 | Game Species | S5 |
| Wood Duck | Aix sponsa | FL | 84 | Game Species | S5 |
| Mallard | Anas platyrhynchos | NY | 80 | Game Species | S5 |
| Turkey Vulture | Cathartes aura | X1 | 84 | Protected | S4 |
| Broad-winged Hawk | Buteo platypterus | NY | 81 | Protected | S5 |
| Red-tailed Hawk | Buteo jamaicensis | FL | 83 | Protected | S5 |
| American Kestrel | Falco sparverius | FL | 83 | Protected | S5 |
| Ring-necked Pheasant | Phasianus colchicus | D2 | 83 | Game Species | SE |
| Ruffed Grouse | Bonasa umbellus | X1 | 84 | Game Species | S5 |
| American Crow | Corvus brachyrhynchos | NY | 80 | Game Species | S5 |
| Killdeer | Charadrius vociferus | NY | 80 | Protected | S5 |
| Spotted Sandpiper | Actitis macularia | DD | 83 | Protected | S5 |
| American Woodcock | Scolopax minor | X1 | 84 | Game Species | S5 |
| Rock Dove | Columba livia | NE | 82 | Unprotected | SE |
| Mourning Dove | Zenaida macroura | NE | 82 | Protected | S5 |
| Black-billed Cuckoo | Coccyzus erythropthalmus | P2 | 80 | Protected | S5 |
| Yellow-billed Cuckoo | Coccyzus americanus | T2 | 84 | Protected | S5 |
| Eastern Screech-Owl | Otus asio | P2 | 84 | Protected | S5 |
| Great Horned Owl | Bubo virginianus | P2 | 84 | Protected | S5 |
| Barred Owl | Strix varia | FL | 84 | Protected | S5 |
| Chimney Swift | Chaetura pelagica | NY | 80 | Protected | S5 |
| Ruby-throated Hummingbird | Archilochus colubris | T2 | 84 | Protected | S5 |
| Belted Kingfisher | Ceryle alcyon | NY | 85 | Protected | S5 |
| Red-bellied Woodpecker | Melanerpes carolinus | X1 | 85 | Protected | S5 |
| Downy Woodpecker | Picoides pubescens | FY | 84 | Protected | S5 |
| Hairy Woodpecker | Picoides villosus | FY | 83 | Protected | S5 |
| Northern Flicker | Colaptes auratus | FL | 85 | Protected | S5 |
| Pileated Woodpecker | Dryocopus pileatus | FL | 83 | Protected | S5 |
| Eastern Wood-Pewee | Contopus virens | FL | 84 | Protected | S5 |
| Least Flycatcher | Empidonax minimus | S2 | 84 | Protected | S5 |
| Eastern Phoebe | Sayornis phoebe | NY | 84 | Protected | S5 |
| Great Crested Flycatcher | Myiarchus crinitus | T2 | 84 | Protected | S5 |
| Eastern Kingbird | Tyrannus tyrannus | NE | 83 | Protected | S5 |

Note: For reports covering multiple blocks, only the record containing the most recent year for the highest level of breeding recorded for each species is shown.

| Common Name | Scientific Name | Breeding Class | Year | New York Legal Status | Heritage State Rank |
|---|---|---|---|---|---|
| Tree Swallow | Tachycineta bicolor | FY | 85 | Protected | S5 |
| Northern Rough-winged Swallow | Stelgidopteryx serripennis | FS | 84 | Protected | S5 |
| Bank Swallow | Riparia riparia | X1 | 85 | Protected | S5 |
| Barn Swallow | Hirundo rustica | NY | 83 | Protected | S5 |
| Blue Jay | Cyanocitta cristata | FY | 81 | Protected | S5 |
| Fish Crow | Corvus ossifragus | FL | 85 | Protected | S4 |
| Black-capped Chickadee | Poecile atricapillus | NY | 80 | Protected | S5 |
| Tufted Titmouse | Baeolophus bicolor | FY | 83 | Protected | S5 |
| White-breasted Nuthatch | Sitta carolinensis | FL | 85 | Protected | S5 |
| Brown Creeper | Certhia americana | X1 | 85 | Protected | S5 |
| Carolina Wren | Thryothorus ludovicianus | NE | 80 | Protected | S5 |
| House Wren | Troglodytes aedon | NY | 80 | Protected | S5 |
| Blue-gray Gnatcatcher | Polioptila caerulea | FY | 84 | Protected | S5 |
| Eastern Bluebird | Sialia sialis | P2 | 84 | Protected | S5 |
| Veery | Catharus fuscescens | FL | 84 | Protected | S5 |
| Wood Thrush | Hylocichla mustelina | NY | 80 | Protected | S5 |
| American Robin | Turdus migratorius | NY | 83 | Protected | S5 |
| Gray Catbird | Dumetella carolinensis | NE | 82 | Protected | S5 |
| Northern Mockingbird | Mimus polyglottos | NE | 80 | Protected | S5 |
| Brown Thrasher | Toxostoma rufum | FY | 84 | Protected | S5 |
| Cedar Waxwing | Bombycilla cedrorum | FY | 84 | Protected | S5 |
| European Starling | Sturnus vulgaris | NY | 82 | Unprotected | SE |
| White-eyed Vireo | Vireo griseus | X1 | 84 | Protected | S4 |
| Warbling Vireo | Vireo gilvus | FY | 83 | Protected | S5 |
| Red-eyed Vireo | Vireo olivaceus | NE | 80 | Protected | S5 |
| Blue-winged Warbler | Vermivora pinus | FY | 85 | Protected | S5 |
| Yellow Warbler | Dendroica petechia | FY | 83 | Protected | S5 |
| Chestnut-sided Warbler | Dendroica pensylvanica | T2 | 84 | Protected | S5 |
| Prairie Warbler | Dendroica discolor | FY | 84 | Protected | S5 |
| Black-and-white Warbler | Mniotilta varia | T2 | 84 | Protected | S5 |
| American Redstart | Setophaga ruticilla | FY | 84 | Protected | S5 |
| Worm-eating Warbler | Helmitheros vermivorus | S2 | 84 | Protected | S4 |
| Ovenbird | Seiurus aurocapillus | FY | 83 | Protected | S5 |
| Louisiana Waterthrush | Seiurus motacilla | S2 | 84 | Protected | S5 |
| Common Yellowthroat | Geothlypis trichas | NY | 84 | Protected | S5 |
| Scarlet Tanager | Piranga olivacea | FY | 83 | Protected | S5 |
| Northern Cardinal | Cardinalis cardinalis | NY | 84 | Protected | S5 |
| Rose-breasted Grosbeak | Pheucticus ludovicianus | FL | 85 | Protected | S5 |
| Indigo Bunting | Passerina cyanea | NY | 80 | Protected | S5 |
| Eastern Towhee | Pipilo erythrophthalmus | FL | 84 | Protected | S5 |
| Chipping Sparrow | Spizella passerina | FY | 82 | Protected | S5 |
| Field Sparrow | Spizella pusilla | FL | 84 | Protected | S5 |

Note: For reports covering multiple blocks, only the record containing the most recent year for the highest level of breeding recorded for each species is shown.

| Common Name | Scientific Name | Breeding Class | Year | New York Legal Status | Heritage State Rank |
|---|---|---|---|---|---|
| Song Sparrow | Melospiza melodia | NE | 80 | Protected | S5 |
| Swamp Sparrow | Melospiza georgiana | FL | 83 | Protected | S5 |
| Red-winged Blackbird | Agelaius phoeniceus | NE | 82 | Protected | S5 |
| Common Grackle | Quiscalus quiscula | FY | 85 | Protected | S5 |
| Brown-headed Cowbird | Molothrus ater | NE | 83 | Protected | S5 |
| Baltimore Oriole | Icterus galbula | NY | 84 | Protected | S5 |
| House Finch | Carpodacus mexicanus | NY | 83 | Protected | SE |
| American Goldfinch | Carduelis tristis | B2 | 84 | Protected | S5 |
| House Sparrow | Passer domesticus | NY | 83 | Unprotected | SE |

**Total Species** 88

Note: For reports covering multiple blocks, only the record containing the most recent year for the highest level of breeding recorded for each species is shown.

## NEW YORK STATE - BREEDING BIRD ATLAS REPORT

The enclosed data from the New York State Breeding Bird Atlas represents a cumulative effort from 1980-1985. These data are the result of on-site surveys within each block conducted by numerous volunteers. The intensity level and effort in data collecting varies throughout the State. Some blocks have been more thoroughly searched than others. For these reasons, we cannot provide a definitive statement concerning the absence of a breeding record for a species not listed in a block. We can only provide a listing of species known to be breeding or suspected of breeding in each block or set of blocks.

For each species listed, its breeding class code and year, its New York State Legal Status, and its Natural Heritage Program state rarity rank are provided. Explanations of these fields are as follows:

### BREEDING CLASS AND YEAR

Indicates the highest class of evidence used to document breeding in that block or set of blocks during the course of the Breeding Bird Atlas Survey, and the year this evidence was recorded. Breeding classes used, and their codes, are listed below, in descending order of breeding confirmation, from strongest evidence of confirmed breeding down to evidence of possible breeding.

| | CODE | DEFINITION OF BREEDING EVIDENCE |
|---|---|---|
| Confirmed Breeding: | | |
| | NY | Nest with young. |
| | NE | Identifiable nest and eggs, bird sitting on nest or eggs, identifiable eggshells found beneath nest, or identifiable dead nestling(s). |
| | FY | Adult(s) with food for young. |
| | FS | Adult carrying fecal sac. |
| | ON | Adult(s) entering or leaving nest site in circumstances indicating occupied nest. |
| | FL | Recently fledged young (including downy young of precocial species - waterfowl, shorebirds). |
| | FE | Female with egg in the oviduct. |
| | UN | Used nest found. |
| | DD | Distraction display or injury-feigning. |
| Probable Breeding: | | |
| | B2 | Nest building or excavation or a nest hole. |
| | N2 | Visiting probable nest site. Nest building by wrens and woodpeckers. |
| | D2 | Courtship and display, agitated behavior or anxiety calls from adults suggesting probable presence nearby of a nest or young; well-developed brood-patch or cloacal protuberance on trapped adult. |
| | T2 | Bird (or pair) apparently holding territory. |
| | S2 | Singing male present (or breeding calls heard) on more than one date in the same place. |
| | P2 | Pair observed in suitable habitat in breeding season. |

Continued on next page...

Possible Breeding:

| | |
|---|---|
| X1 | Species observed in possible nesting habitat but no other indication of breeding noted, or singing male(s) present (or breeding calls heard), in breeding season (based upon one visit). |

## NEW YORK STATE LEGAL STATUS - ANIMALS

Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

E = Endangered Species: any species which meet one of the following criteria:

1) Any native species in imminent danger of extirpation
2) Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

T = Threatened Species: any species which meet one of the following criteria:

1) Any native species likely to become an endangered species within the foreseeable future in New York.
2) Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.

SC = Special Concern Species: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).

P = Protected Wildlife (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.

U = Unprotected (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a licence to take may be required.

G = Game (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NY NATURAL HERITAGE PROGRAM STATE RARITY RANKS:

Each species has a state rank, which reflects its rarity within New York State, as determined by the NY Natural Heritage Program. These ranks carry no legal weight.

S1 = Typically 5 or fewer occurrences in New York State, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.

S2 = Typically 6 to 20 occurrences in New York State, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.

S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.

S4 = Apparently secure in New York State.

S5 = Demonstrably secure in New York State.

SH = Historically known from New York State, but not seen in the past 15 years.

SX = Apparently extirpated from New York State.

SE = Exotic, not native to New York State

NR = Not ranked (e.g., hybrids)

Questions concerning these data may be addressed to:

New York Natural Heritage Program
NYS DEC - Wildlife Resources Center
700 Troy-Schenectady Road
Latham, New York 12110-2400

Copies of the published book "The Atlas of Breeding Birds in New York State", Robert F. Andrle and Janet R. Carroll, Editors, may be purchased directly from Cornell University Press. Call phone number 1-800-666-2211 to order.

12/99

# APPENDIX H

# Qualitative Human Health Risk Assessment Report

TABLE 1
SELECTION OF OFF-SITE EXPOSURE PATHWAYS
Three Star Anodizing Site

| Scenario Timeframe | Medium | Exposure Medium | Exposure Point | Receptor Population | Receptor Age | Exposure Route | Type of Analysis | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|---|---|---|
| Current/ Future | Creek Sediment | Creek sediment | Sediment | | | | | The creek contains constituents at concentrations above screening guidance values. |
| | | | | Recreational visitor | Adult, Adolescent, Child | Ingestion, dermal contact | Qual. | It is possible that incidental ingestion or dermal contact with sediment could occur during recreational activities on the creek. |
| | | | | Swimmer | Adult, Adolescent, child | Ingestion, dermal contact | Qual. | Evidence of swimming was observed along the creek (I.e. rope swing) providing evidence of occassional use of the creek for this purpose. Possible incidental ingestion or dermal contact with sediment could occur during while swimming in the creek. |
| | | Fish Tissue | Fish consumption | Subsistence consumer | Adult, Adolescent, Child | Ingestion | Qual. | It is possible ingestion of fish tissue could occur in subsistence consumers. |
| | | | | Recreational anglers | Adult, Adolescent, Child | Ingestion | Qual. | It is possible ingestion of fish tissue could occur in recreational anglers. |
| | | Shallow ground water | Seeps/sediment along creek bank | Recreational visitor | Adult, Adolescent, child | Ingestion, dermal contact | None | Limited, intermittent, seepage along creek bank has been observed. Occasional contact with ground water seeps are possible. Sediment samples collected from the area where seeps were observed did not provide evidence of a source area. |

TABLE 1
SELECTION OF OFF-SITE EXPOSURE PATHWAYS
Three Star Anodizing Site

| Scenario Timeframe | Medium | Exposure Medium | Exposure Point | Receptor Population | Receptor Age | Exposure Route | Type of Analysis | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|---|---|---|
| Current/ Future (continued) | Creek Surface water | Creek Surface water | Surface water | | | | | Surface water concentrations were within TOGS screening values for human exposures. |
| | | | | Recreational visitor | Adult, Adolescent, Child | Ingestion, dermal contact | None | Surface water concentrations were within TOGS screening values for human exposures. Potential contact with surface water is judged to be acceptable with regard to potential Site constituents. |
| | | | | Swimmer | Adult, Adolescent, child | Ingestion, dermal contact | None | Evidence of swimming was observed along the creek (I.e. rope swing). Occassional use of the creek for this purpose is likely. Possible incidental ingestion or dermal contact with water could occur during while swimming in the creek. Surface water concentrations were within TOGS screening values for human exposures. Potential contact with surface water is judged to be acceptable with regard to potential Site constituents. |
| | Shallow/deep ground water | Ground water | Potable water | Resident | Adult, Adolescent, Child | Ingestion, dermal contact | None | No wells used for potable water were identified by NYSDEC or Dutchess County Department of Health. The Village of Wappingers Falls provides a public water supply. A permit is required to install wells for potable uses. No wells for potable uses are allowed in the Village of Wappingers Falls where the pubic water supply is available. |
| | | Creek sediment | Sediment | Recreational visitor | Adult, Adolescent, Child | Ingestion, dermal contact | None | It is possible for deep ground water to migrate downgradient along the creek bed material and provide a pathway and potential exposure via incidental contact during recreational activities. However, surface water concentrations below TOGS screening values did not provide evidence that this potential pathway is complete. |

TABLE 1
SELECTION OF OFF-SITE EXPOSURE PATHWAYS
Three Star Anodizing Site

| Scenario Timeframe | Medium | Exposure Medium | Exposure Point | Receptor Population | Receptor Age | Exposure Route | Type of Analysis | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|---|---|---|
| Current/ Future (continued) | Lagoon sediment | Wappingers Creek | Surface water | Recreational visitor | Adult, Adolescent, Child | Ingestion, dermal contact | None | It is possible for lagoon surface water to be transported into the creek. Lagoon surface water concentrations were within TOGS screening values for human expsoures. Potential contact with surface water is judged to be acceptable with regard to potential Site constituents. |
| | | | Sediment | Recreational visitor/ swimmer | Adult, Adolescent, child | Ingestion, dermal contact | Qual. | Lagoon sediment concentrations are above guidance screening values. It is possible for lagoon sediments to be transported into the creek, settle to the creek bed, and provide a pathway and potential exposure via incidental ingestion of sediment during recreational activities. |
| | Site surface runoff | Wappingers Creek | Surface water | Recreational visitor/ swimmer | Adult, Adolescent, Child | Ingestion, dermal contact | None | It is possible for constituents to be transported from the Site to the creek in surface runoff providing a pathway and potential exposure via incidental ingestion or dermal contact with surface water during recreational activities. Surface water concentrations below TOGS screening values for human exposures, as measured during storm event monitoring of creek surface water in the vicinity of the site, indicated acceptable water quality with regard to potential site constituents. |
| | | | Sediment | Recreational visitor/ swimmer | Adult, Adolescent, Child | Ingestion, dermal contact | Qual. | It is possible for constituents to be transported from the Site to the creek in surface runoff providing a pathway and potential exposure via incidental ingestion or dermal contact with sediment during recreational activities. |

TABLE 1
SELECTION OF OFF-SITE EXPOSURE PATHWAYS
Three Star Anodizing Site

| Scenario Timeframe | Medium | Exposure Medium | Exposure Point | Receptor Population | Receptor Age | Exposure Route | Type of Analysis | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|---|---|---|
| Current | Facility buildings | Sanitary System Failure | Creek - Surface water | Recreational visitor/ Swimmer | Adult, Adolescent, Child | Ingestion, dermal contact | None | The design of the sanitary system for the facility is not known. Past discharges to the creek from the sanitary system were documented by Dutchess County Department of Health. Except for the former Axton-Cross Building, the facility buildings are not active at this time. Therefore, this pathway is judged to be incomplete under current uses. |
| | | | Creek - Sediment | Recreational visitor/ Swimmer | Adult, Adolescent, Child | Ingestion, dermal contact | None | The design of the sanitary system for the facility is not known. Past discharges to the creek from the sanitary system were documented by Dutchess County Department of Health. Except for the former Axton-Cross Building, the facility buildings are not active at this time. Therefore, this pathway is judged to be incomplete under current uses. |
| Future | Facility buildings | Sanitary System Failure | Creek - Surface water | Recreational visitor/ Swimmer | Adult, Adolescent, Child | Ingestion, dermal contact | Qual. | The design of the sanitary system for the facility is not known. Past discharges to the creek from the sanitary system were documented by Dutchess County Department of Health. To prevent future discharges to the creek and potential exposures, the sanitary system will need to be addressed prior to occupying buildings. |
| | | | Creek - Sediment | Recreational visitor/ Swimmer | Adult, Adolescent, Child | Ingestion, dermal contact | Qual. | The design of the sanitary system for the facility is not known. Past discharges to the creek from the sanitary system were documented by Dutchess County Department of Health. To prevent future discharges to the creek and potential exposures, the sanitary system will need to be addressed prior to occupying buildings. |

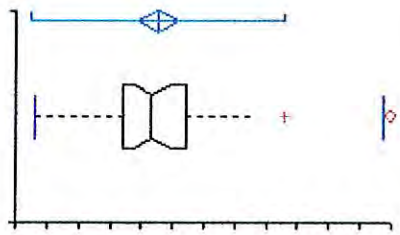
# APPENDIX I

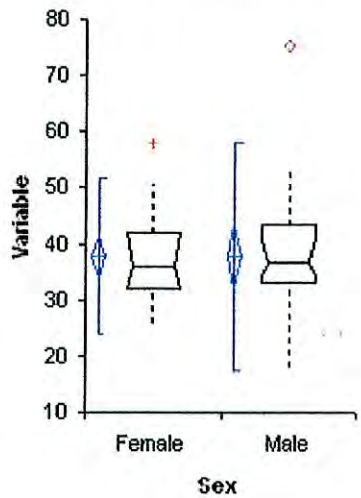
## Box plot evaluations of spatial trends

## Box-Whisker plots

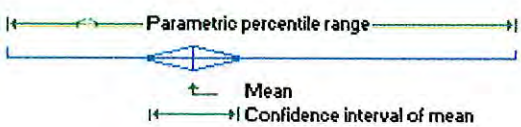
**See also:** Normality Test, Frequency histogram.

Box-plots graphically show the **central location** and **scatter/dispersion** of the observations of a sample(s). Single continuous descriptives shows a single horizontal box-plot for the sample. Comparative descriptives shows vertical box-plots for each sample, side-by-side for comparison.



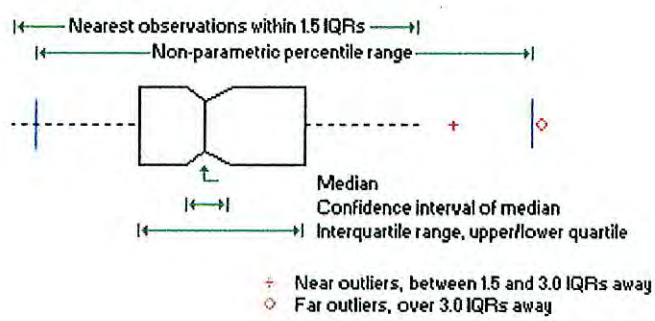



The blue line series shows **parametric statistics:**



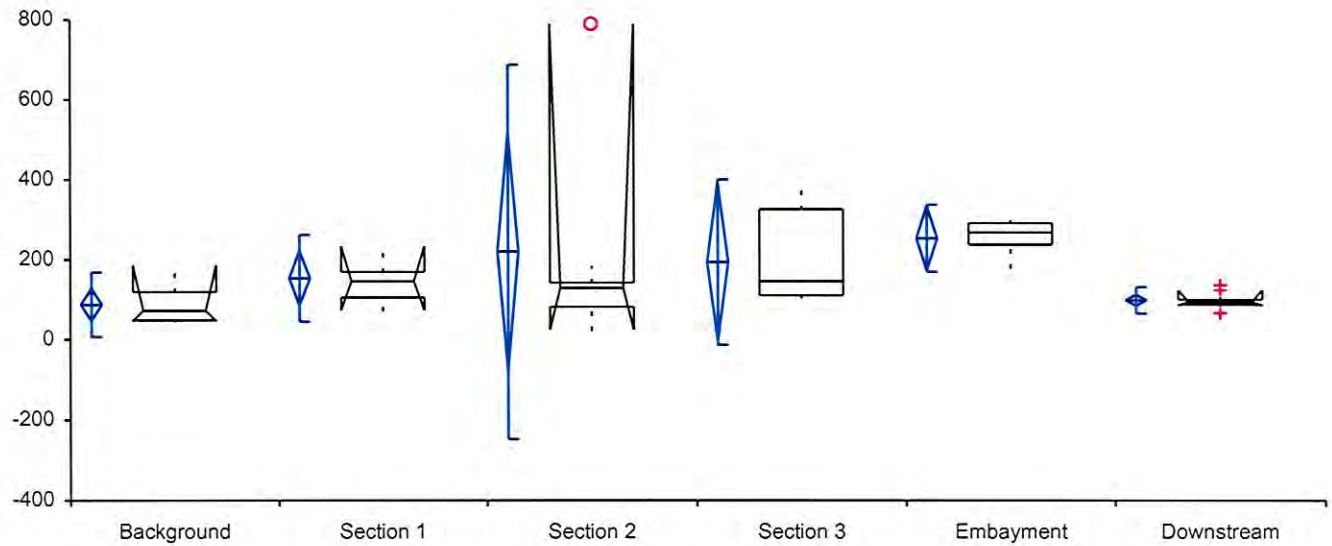

- the blue diamond shows the **mean** and the requested **confidence interval around the mean**.
- the blue notched lines show the requested **parametric percentile range**.

The notched box and whiskers show **non-parametric statistics**:



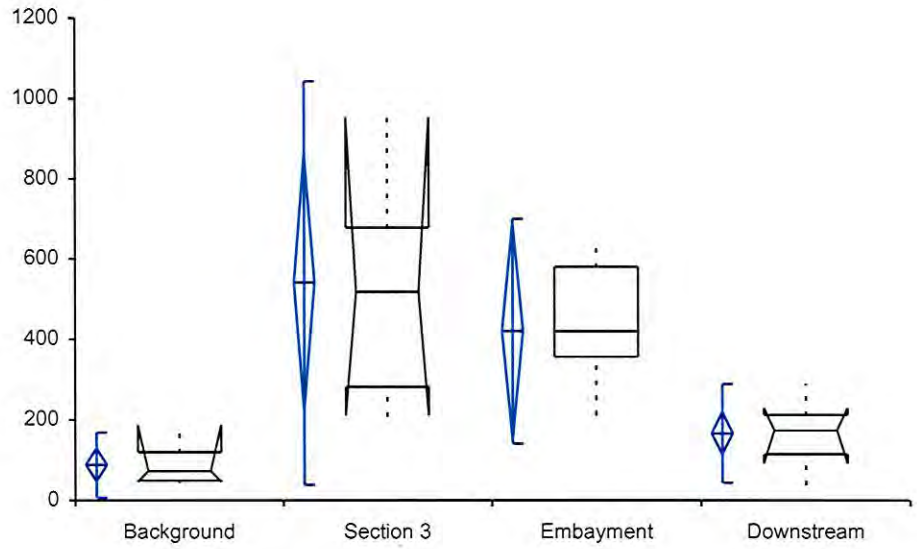

- the notched box shows the **median**, lower and upper **quartiles**, and **confidence interval around the median**.
- the dotted-line connects the **nearest observations within 1.5 IQRs** (inter-quartile ranges) of the lower and upper quartiles.
- red crosses (+) and circles (o) indicate **possible** outliers - observations more than 1.5 IQRs (**near outliers**) and 3.0 IQRs (**far outliers**) from the quartiles.
- the blue vertical lines show the requested **non-parametric percentile range**.

| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of lead concentrations in surface sediment |
| **Variables** | Lead: Background, Section 1, Section 2, Section 3, Embayment, Downstream |
| **Performed by** | |
| **Date** | 5 November 2003 |



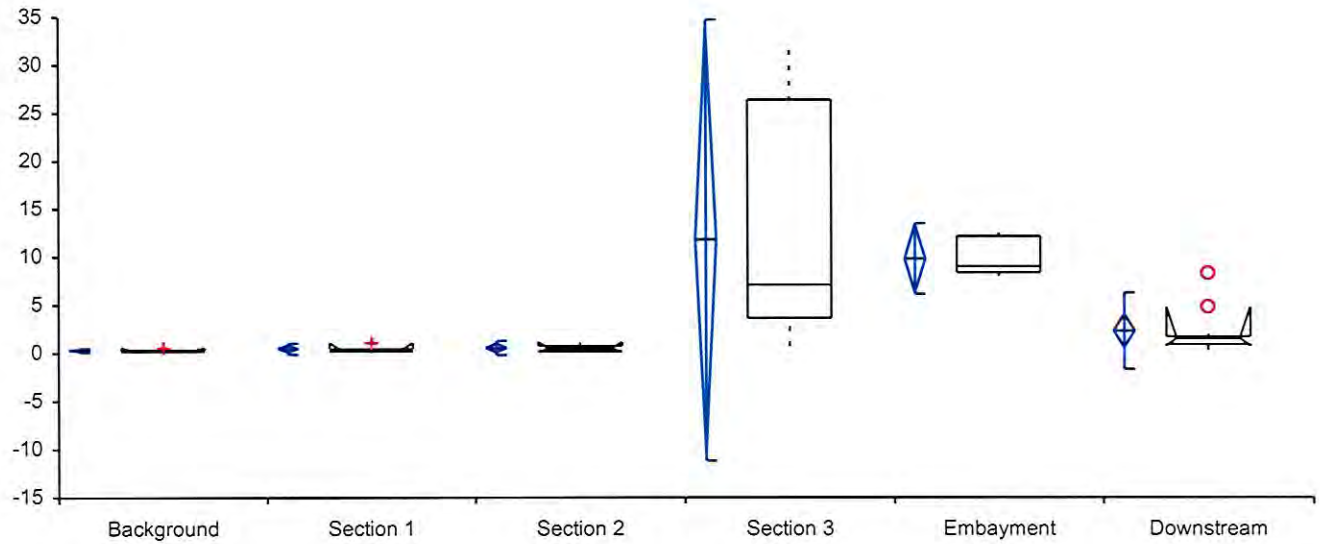

| Lead | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 87 | 49 | 17 | 46 to 128 | 73 | 71 | 46 to 187 |
| **Section 1** | 6 | 153 | 66 | 27 | 84 to 223 | 147 | 65 | 73 to 235 |
| **Section 2** | 6 | 220 | 284 | 116 | -78 to 519 | 130 | 61 | 24 to 790 |
| **Section 3** | 4 | 194 | 126 | 63 | -6.1 to 395 | 148 | 216 | - to - |
| **Embayment** | 4 | 254 | 51 | 26 | 172 to 336 | 269 | 54 | - to - |
| **Downstream** | 10 | 99 | 20 | 6.4 | 85 to 114 | 95 | 13 | 86 to 125 |

| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of lead concentrations in deeper sediment |
| **Variables** | Lead: Background, Section 3, Embayment, Downstream |
| **Performed by** | |
| **Date** | 10 November 2003 |



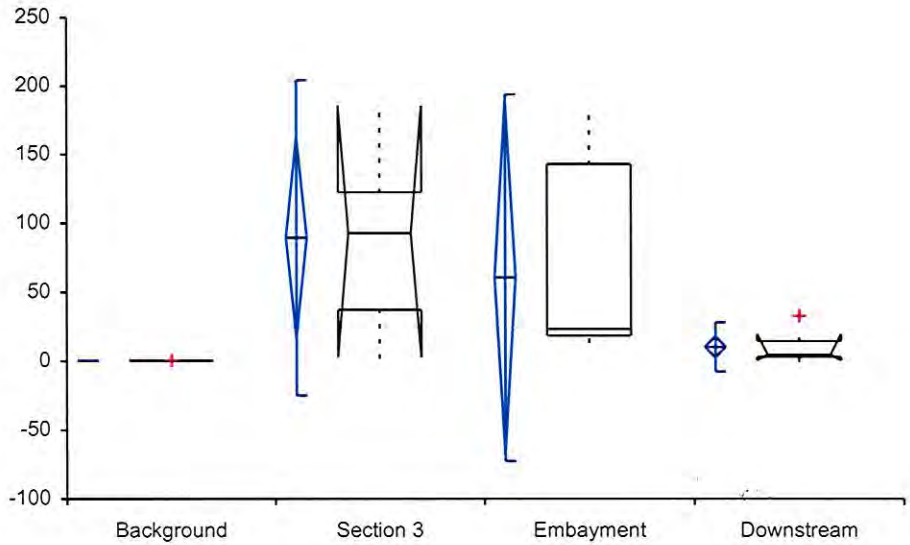

| Lead | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 87 | 49 | 17 | 46 to 128 | 73 | 71 | 46 to 187 |
| **Section 3** | 6 | 541 | 306 | 125 | 220 to 862 | 518 | 397 | 210 to 955 |
| **Embayment** | 4 | 421 | 170 | 85 | 150 to 691 | 420 | 224 | - to - |
| **Downstream** | 10 | 166 | 75 | 24 | 113 to 219 | 174 | 98 | 91 to 230 |

| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of mercury concentrations in surface sediment |
| **Variables** | Mercury: Background, Section 1, Section 2, Section 3, Embayment, Downstream |
| **Performed by** | **Date** 5 November 2003 |



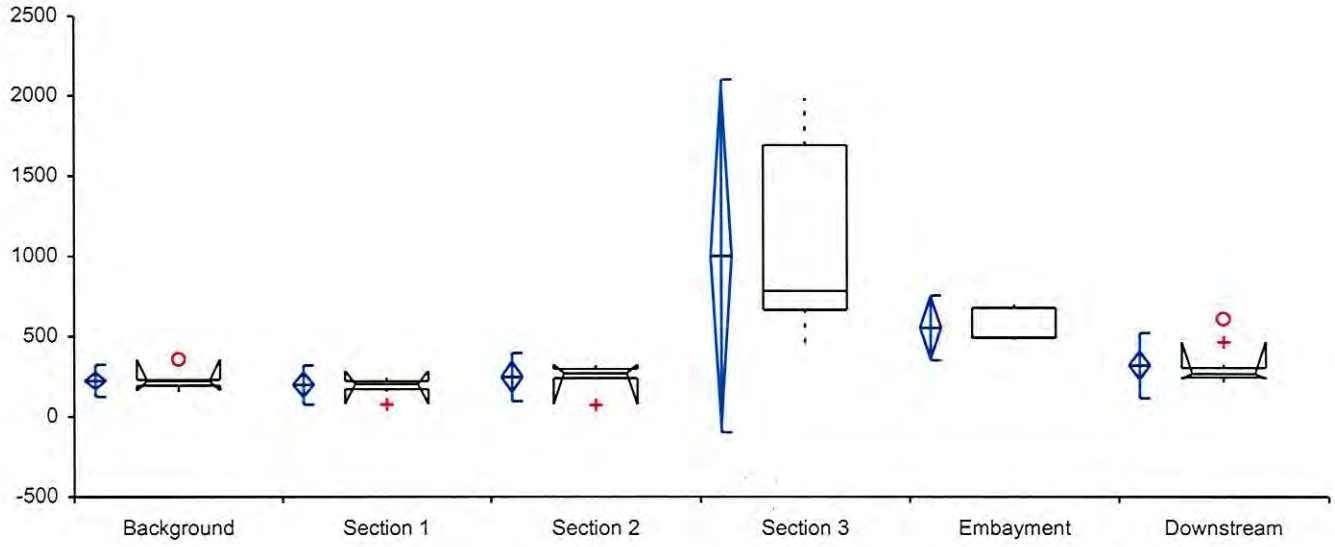

| Mercury | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 0.30 | 0.13 | 0.04 | 0.19 to 0.40 | 0.30 | 0.13 | 0.18 to 0.57 |
| **Section 1** | 6 | 0.45 | 0.35 | 0.14 | 0.09 to 0.82 | 0.39 | 0.25 | 0.15 to 1.1 |
| **Section 2** | 6 | 0.54 | 0.45 | 0.18 | 0.07 to 1.0 | 0.45 | 0.60 | 0.15 to 1.2 |
| **Section 3** | 4 | 12 | 14 | 7.0 | -10 to 34 | 7.1 | 23 | - to - |
| **Embayment** | 4 | 9.8 | 2.2 | 1.1 | 6.2 to 13 | 9.0 | 3.7 | - to - |
| **Downstream** | 10 | 2.3 | 2.4 | 0.77 | 0.57 to 4.0 | 1.6 | 0.82 | 0.77 to 4.8 |

| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of mercury concentrations in deeper sediment |
| **Variables** | Mercury: Background, Section 3, Embayment, Downstream |
| **Performed by** | |
| **Date** | 10 November 2003 |



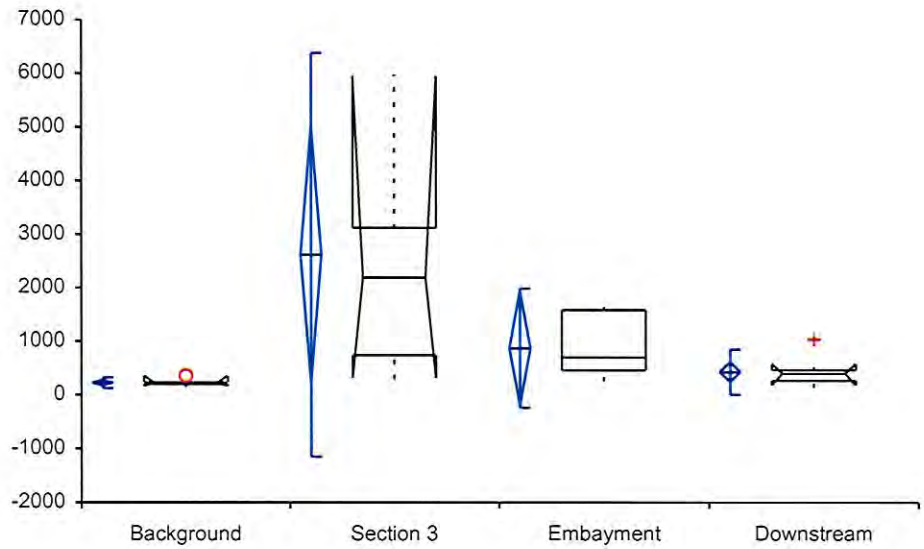

| Mercury | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 0.30 | 0.13 | 0.04 | 0.19 to 0.40 | 0.30 | 0.13 | 0.18 to 0.57 |
| **Section 3** | 6 | 90 | 70 | 28 | 17 to 163 | 93 | 86 | 2.4 to 186 |
| **Embayment** | 4 | 61 | 81 | 41 | -68 to 190 | 24 | 125 | - to - |
| **Downstream** | 10 | 10 | 11 | 3.4 | 2.5 to 18 | 4.8 | 12 | 0.4 to 20 |

| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of zinc concentrations in surface sediment |
| **Variables** | Zinc: Background, Section 1, Section 2, Section 3, Embayment, Downstream |
| **Performed by** | **Date** 5 November 2003 |




| Zinc | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 225 | 61 | 21 | 174 to 275 | 223 | 35 | 162 to 359 |
| **Section 1** | 6 | 199 | 74 | 30 | 121 to 277 | 203 | 52 | 78 to 285 |
| **Section 2** | 6 | 247 | 92 | 37 | 151 to 344 | 269 | 58 | 74 to 325 |
| **Section 3** | 4 | 1004 | 669 | 335 | -62 to 2069 | 784 | 1029 | - to - |
| **Embayment** | 4 | 555 | 123 | 62 | 359 to 751 | 497 | 189 | - to - |
| **Downstream** | 10 | 320 | 124 | 39 | 231 to 409 | 268 | 58 | 238 to 470 |

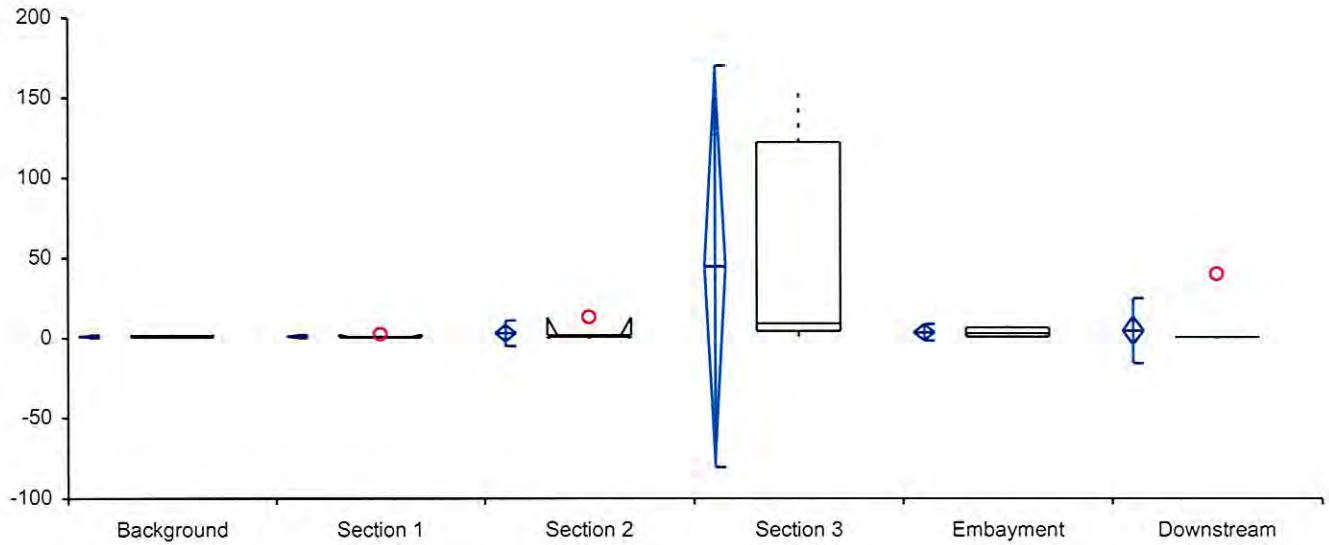
| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of zinc concentrations in deeper sediment |
| **Variables** | Zinc: Background, Section 3, Embayment, Downstream |
| **Performed by** | |
| **Date** | 10 November 2003 |




| Zinc | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 225 | 61 | 21 | 174 to 275 | 223 | 35 | 162 to 359 |
| **Section 3** | 6 | 2616 | 2291 | 935 | 212 to 5021 | 2195 | 2378 | 307 to 5955 |
| **Embayment** | 4 | 874 | 679 | 339 | -206 to 1955 | 701 | 1132 | - to - |
| **Downstream** | 10 | 429 | 260 | 82 | 243 to 615 | 398 | 200 | 179 to 588 |

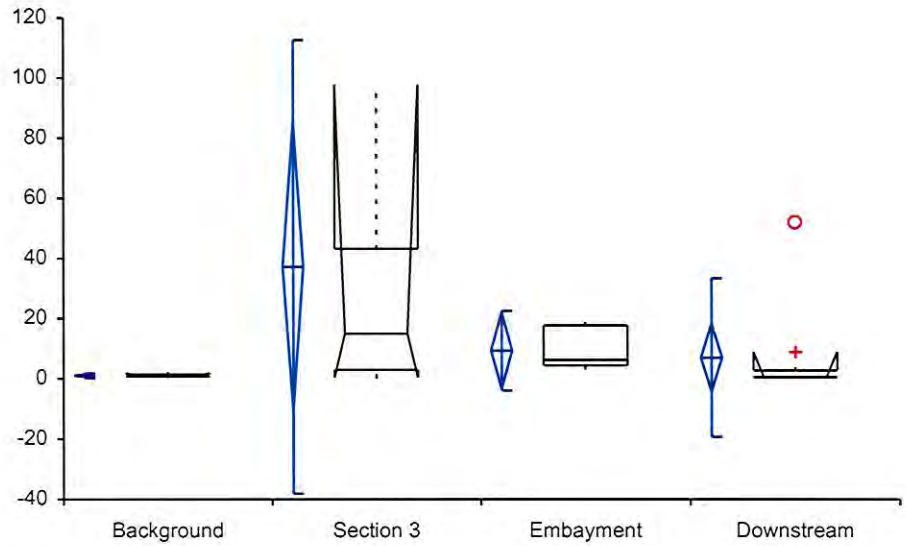
**Test** **Comparative descriptives**
Comparison of antimony concentrations in surface sediment
**Variables** Antimony: Background, Section 1, Section 2, Section 3, Embayment, Downstream

**Date** 5 November 2003



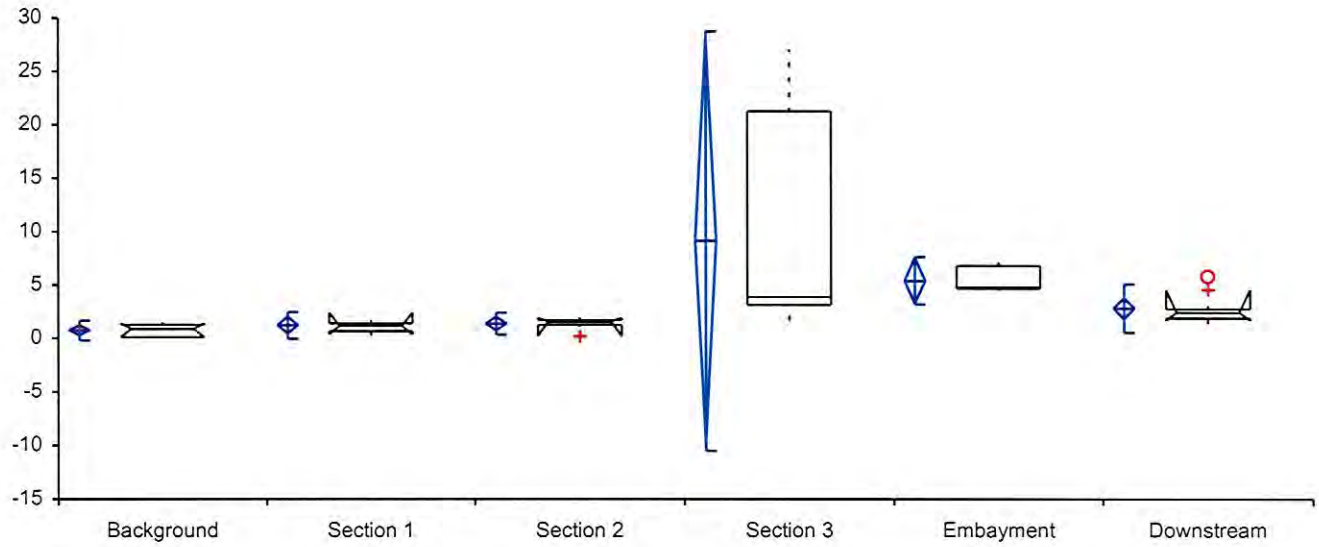

| Antimony | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| Background | 8 | 0.98 | 0.52 | 0.18 | 0.5 to 1.4 | 0.75 | 0.88 | 0.55 to 1.9 |
| Section 1 | 6 | 1.0 | 0.69 | 0.28 | 0.3 to 1.7 | 0.77 | 0.43 | 0.51 to 2.3 |
| Section 2 | 6 | 3.0 | 4.9 | 2 | -2.1 to 8.1 | 1.3 | 1.0 | 0.20 to 13 |
| Section 3 | 4 | 45 | 76 | 38 | -77 to 166 | 9.2 | 118 | - to - |
| Embayment | 4 | 3.6 | 3.2 | 1.6 | -1.5 to 8.6 | 3.2 | 5.8 | - to - |
| Downstream | 10 | 4.7 | 12 | 3.9 | -4.2 to 14 | 0.80 | 0.10 | 0.70 to 0.80 |

| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of antimony concentrations in deeper sediment |
| **Variables** | Antimony: Background, Section 3, Embayment, Downstream |
| **Performed by** | |
| **Date** | 10 November 2003 |



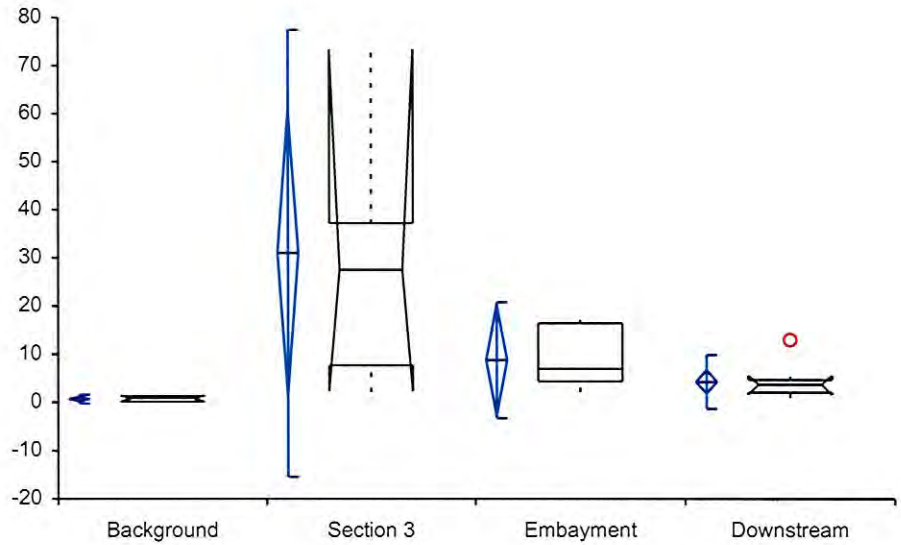

| Antimony | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 1.0 | 0.52 | 0.18 | 0.55 to 1.4 | 0.75 | 0.88 | 0.55 to 1.9 |
| **Section 3** | 6 | 37.2 | 46 | 19 | -11 to 85 | 15 | 40 | 0.33 to 98 |
| **Embayment** | 4 | 9.2 | 8.1 | 4.0 | -3.6 to 22 | 6.3 | 13 | - to - |
| **Downstream** | 10 | 7.0 | 16 | 5.1 | -4.5 to 18 | 0.6 | 2.3 | 0.40 to 8.9 |

| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of cadmium concentrations in surface sediment |
| **Variables** | Cadmium: Background, Section 1, Section 2, Section 3, Embayment, Downstream |
| **Performed by** | **Date** 5 November 2003 |



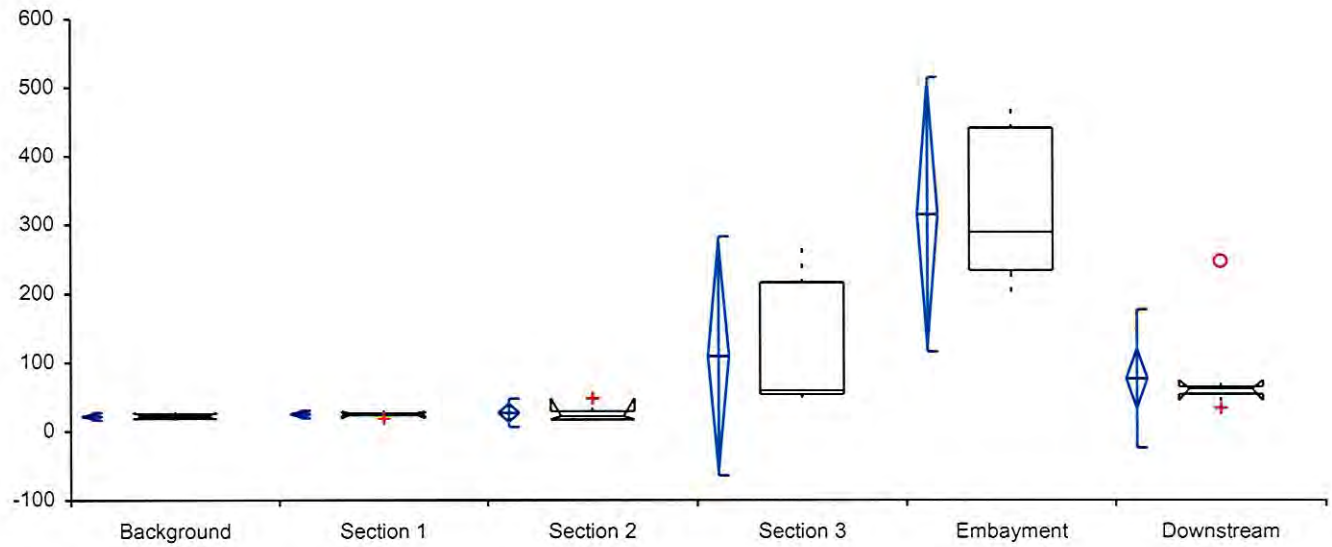

| Cadmium | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 0.7 | 0.56 | 0.20 | 0.27 to 1.2 | 0.87 | 1.2 | 0.10 to 1.4 |
| **Section 1** | 6 | 1.2 | 0.76 | 0.31 | 0.41 to 2.0 | 1.2 | 0.75 | 0.34 to 2.4 |
| **Section 2** | 6 | 1.4 | 0.63 | 0.26 | 0.71 to 2.0 | 1.6 | 0.48 | 0.20 to 1.9 |
| **Section 3** | 4 | 9.2 | 12 | 5.97 | -9.9 to 28 | 3.9 | 18 | - to - |
| **Embayment** | 4 | 5.4 | 1.4 | 0.68 | 3.2 to 7.6 | 4.8 | 2.1 | - to - |
| **Downstream** | 10 | 2.8 | 1.4 | 0.44 | 1.8 to 3.8 | 2.5 | 0.88 | 1.7 to 4.6 |

| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of cadmium concentrations in deeper sediment |
| **Variables** | Cadmium: Background, Section 3, Embayment, Downstream |
| **Performed by** | |
| **Date** | 10 November 2003 |



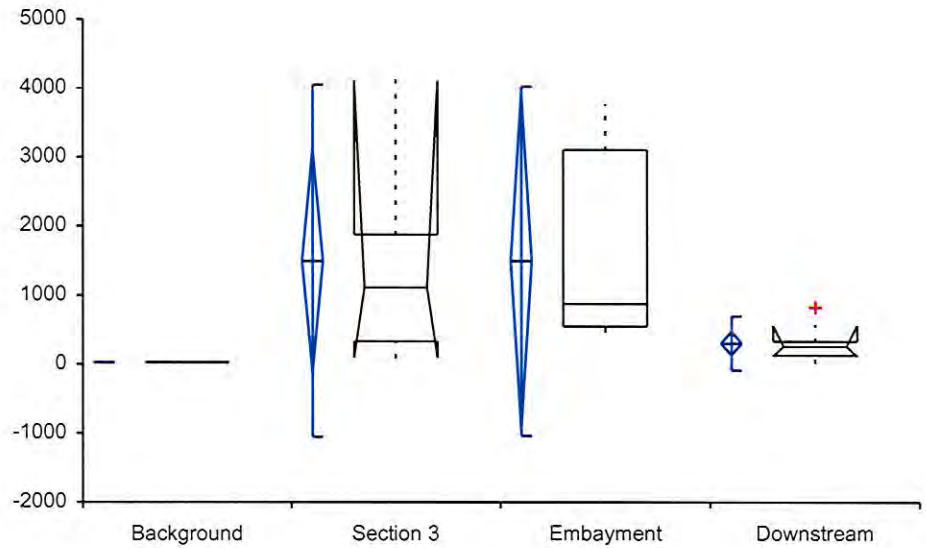

| Cadmium | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 0.74 | 0.56 | 0.20 | 0.27 to 1.2 | 0.87 | 1.2 | 0.10 to 1.4 |
| **Section 3** | 6 | 31 | 28 | 12 | 1.4 to 61 | 28 | 30 | 2.3 to 74 |
| **Embayment** | 4 | 8.8 | 7.3 | 3.7 | -2.8 to 20 | 7.0 | 12 | - to - |
| **Downstream** | 10 | 4.3 | 3.4 | 1.1 | 1.8 to 6.8 | 3.7 | 2.7 | 1.5 to 5.6 |

| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of chromium concentrations in surface sediment |
| **Variables** | Chromium: Background, Section 1, Section 2, Section 3, Embayment, Downstream |
| **Performed by** | **Date** 5 November 2003 |




| Chromium | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 22 | 3.6 | 1.3 | 19 to 25 | 21.500 | 7.1 | 18 to 27 |
| **Section 1** | 6 | 25 | 3.4 | 1.4 | 21 to 28 | 25.500 | 2.5 | 19 to 29 |
| **Section 2** | 6 | 27 | 12 | 5.1 | 14 to 40 | 22.3 | 12 | 17 to 48 |
| **Section 3** | 4 | 109 | 105 | 53 | -59 to 277 | 59.500 | 163 | - to - |
| **Embayment** | 4 | 315 | 122 | 61 | 122 to 509 | 289.500 | 208 | - to - |
| **Downstream** | 10 | 77 | 61 | 19 | 33 to 120 | 61.500 | 11 | 44 to 74 |

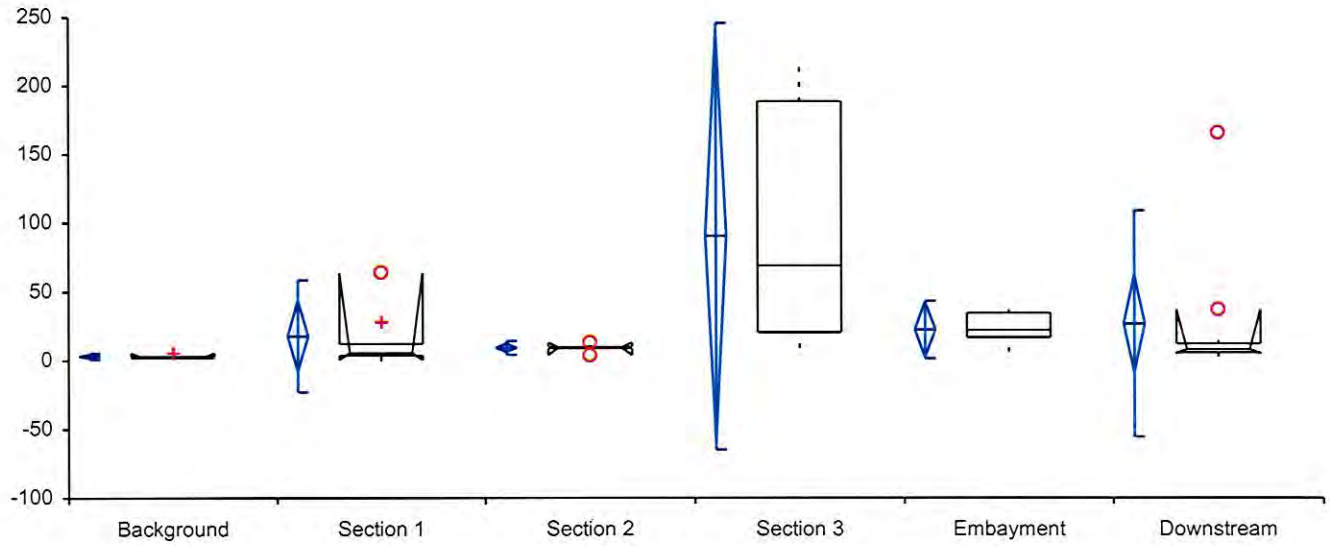
| | |
|---|---|
| **Test** | **Comparative descriptives** |
| | Comparison of chromium concentrations in deeper sediment |
| **Variables** | Chromium: Background, Section 3, Embayment, Downstream |
| **Performed by** | |
| **Date** | 10 November 2003 |




| Chromium | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 8 | 22 | 3.6 | 1.3 | 19 to 25 | 22 | 7.1 | 18 to 27 |
| **Section 3** | 6 | 1498 | 1551 | 633 | -130 to 3126 | 1114 | 1546 | 89 to 4120 |
| **Embayment** | 4 | 1495 | 1541 | 771 | -958 to 3947 | 872 | 2564 | - to - |
| **Downstream** | 10 | 300 | 239 | 76 | 129 to 471 | 258 | 200 | 115 to 566 |

**Test** **Comparative descriptives**
Comparison of tPAH concentrations in surface sediment
**Variables** PAH: Background, Section 1, Section 2, Section 3, Embayment, Downstream

**Date** 6 November 2003




| tPAH | n | Mean | SD | SE | 95% CI of Mean | Median | IQR | 95% CI of Median |
|---|---|---|---|---|---|---|---|---|
| **Background** | 6 | 3.0 | 1.5 | 0.6 | 1.4 to 4.6 | 2.6 | 1.1 | 1.7 to 5.5 |
| **Section 1** | 6 | 18 | 25 | 10 | -8.3 to 44 | 5.4 | 8.5 | 0.2 to 64 |
| **Section 2** | 6 | 9.1 | 3.1 | 1.3 | 5.9 to 12 | 9.4 | 0.81 | 3.6 to 13 |
| **Section 3** | 4 | 90 | 94 | 47 | -60 to 241 | 69 | 169 | - to - |
| **Embayment** | 4 | 22 | 13 | 6.4 | 2.0 to 43 | 22 | 18 | - to - |
| **Downstream** | 10 | 27 | 50 | 16 | -9.2 to 62 | 8.3 | 6.7 | 4.7 to 37 |

# EXHIBIT A

# Bathymetric map of Wappingers Creek

Source:

Map obtained from New York State Department of Environmental Conservation, Division of Fish, Wildlife, and Marine Resources.

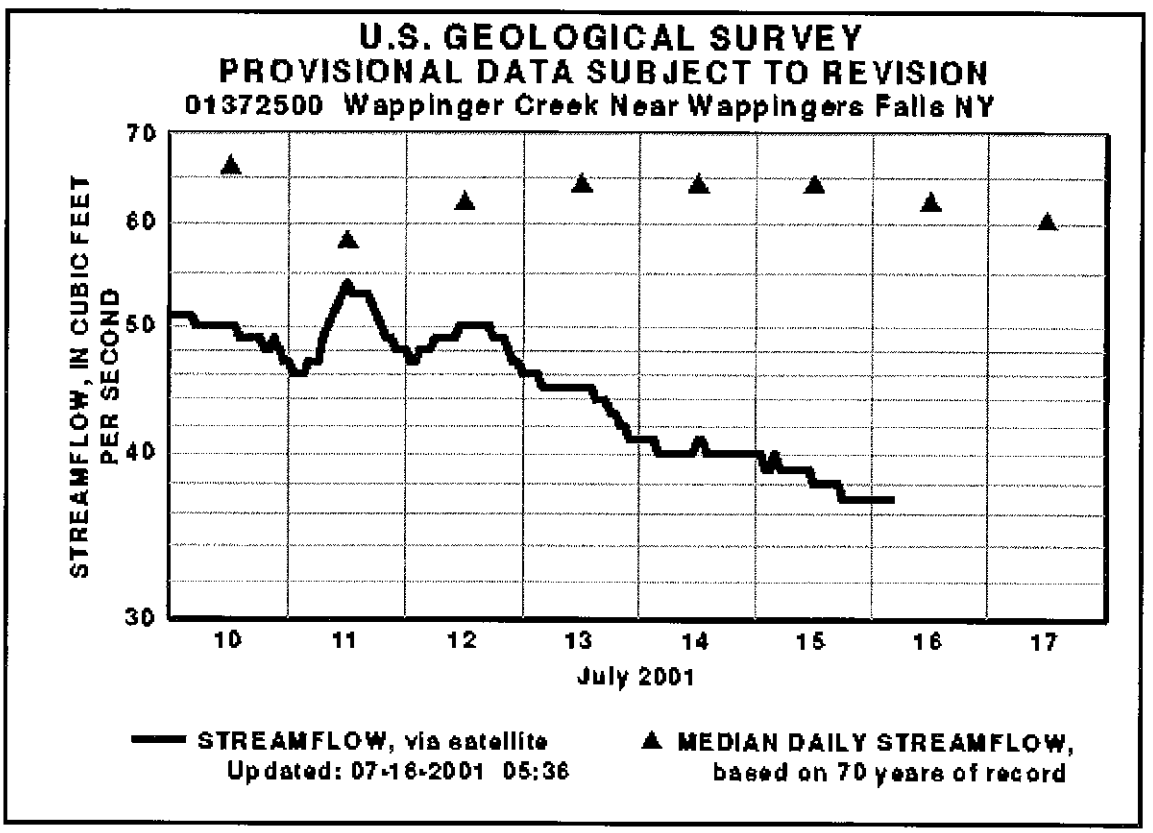
# EXHIBIT B

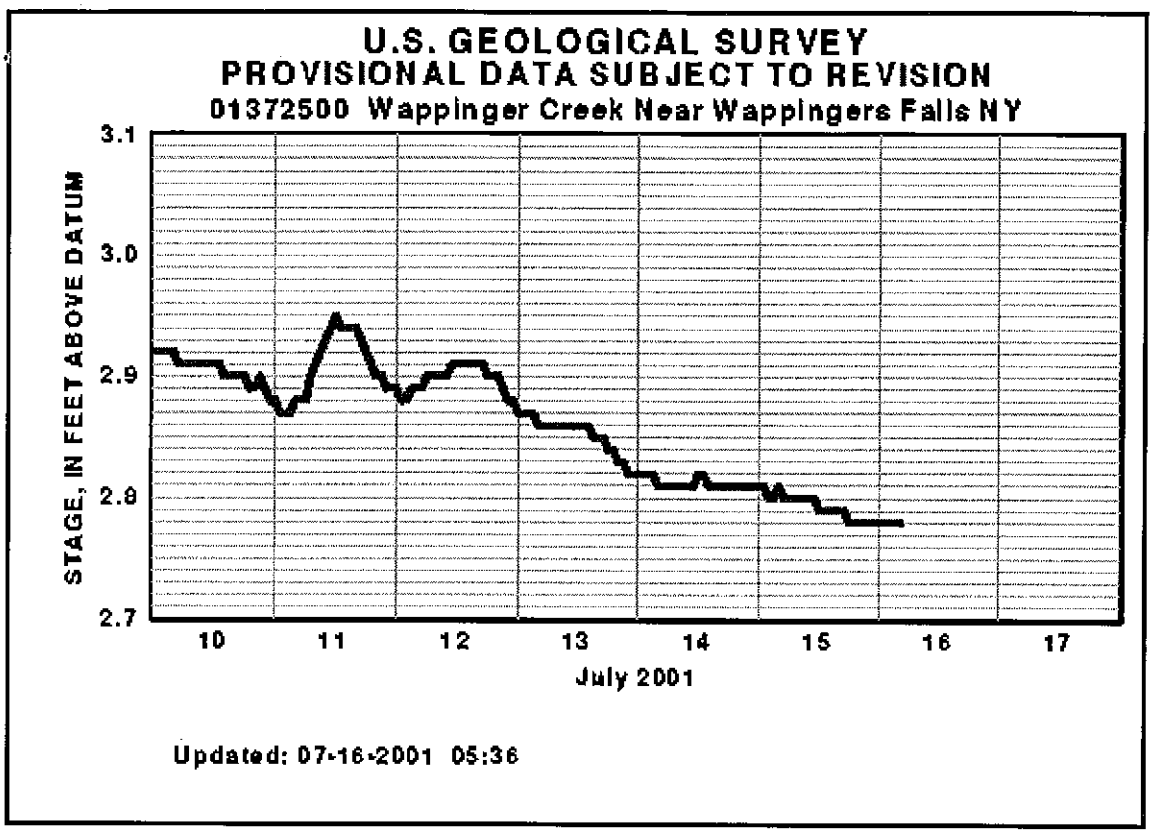
## Wappingers Creek flow data, Hudson River tide data

# PROVISIONAL DATA SUBJECT TO REVISION

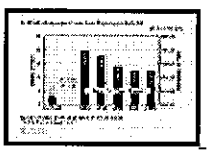
## 01372500-- Wappinger Creek Near Wappingers Falls NY

| Latest Conditions | | | |
|---|---|---|---|
| Flow ($ft^3/s$) | Stage (ft) | Date | Time |
| 37 | 2.8 | 07/16 | 04:45 |






- Additional sensor graph(s) available (click on graph or sensor name)



[ Recorded Peak Stages ]

- Download provisional data
- Retrieve historical daily value data
- Retrieve historical peak flow data
- Map of region surrounding station

| | Daily Mean Discharge Statistics for 07/16 based on 70 years of record, in (ft³/s) | | | | | |
|---|---|---|---|---|---|---|
| Latest flow 07/16 04:45 | Minimum | Mean | Maximum | 80 percent exceedance | 50 percent exceedance | 20 percent exceedance |
| 37 | 9.2 | 127 | 1,860 | 24 | 62 | 133 |
| *Percent exceedance means that 80, 50, or 20 percent of all daily mean flows for 07/16 have been greater than the the value shown.* | | | | | | |

| Flood Thresholds | |
|---|---|
| Flow (ft³/s) | Stage (ft) |
| --- | 8.0 |

*Return to Water Resources of New York Home page*

*Please direct questions or comments to <GS-W-NYalb_Webmaster@usgs.gov>*
*or contact:*

*Information Specialist*
*U.S. Geological Survey*
*425 Jordan Rd.*
*Troy, NY 12180*
*Tel. 518/285-5602*

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*rt_www -- (rev 1.1)*

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## Current Conditions

**Poughkeepsie, NY**
as reported at Poughkeepsie, NY. Last updated Monday, July 16, at 7:53 AM Eastern Daylight Time

Your 24hr/7day a week High School Class Reunion on the Net

Find Old Friends! classmates

Fair

**63**°F Feels Like: N/A

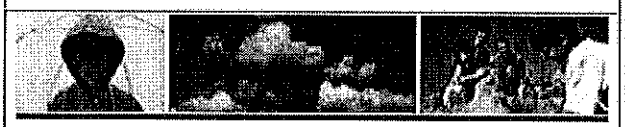
| | |
|---|---|
| **UV Index:** | 1 Minimal |
| **Wind:** | calm |
| **Dew Point:** | 59 °F |
| **Humidity:** | 87 % |
| **Visibility:** | Unlimited |
| **Barometer:** | 30.05 inches and rising |

Averages & Records | Detailed Local Forecast | Hour by Hour Details | Audio and Video Forecast

Temperature Converter
Enter a number and click on the "Calculate" button

°F = °C Calculate Reset

## Weather and ...



**Personalize this section to see how the weather impacts:**

- Golf Courses
- Airport Delays
- Pollen Counts
- Sun Safety Tips
- Air Quality Info
- Gardening Tips
- Scenic Drives
- National Parks
- Water Temps

Personalize this section

## Rec Loc

Visit by Ci
Sho by Di
Use from
Lon by Pl
Onli by M
Rea by H
Hot by H

## 10 Day Forecast

**Poughkeepsie, NY**
Monday, July 16, at 3:09 AM Eastern Daylight Time

| | | Hi (°F) | Lo (°F) |
|---|---|---|---|
| Today Jul 16 | Partly Cloudy<br>UV Index: 9 High | 81 °F | 63 °F |
| Tue Jul 17 | Showers<br>UV Index: 6 Moderate | 80 °F | 62 °F |
| Wed Jul 18 | Scattered Showers<br>UV Index: 8 High | 80 °F | 62 °F |
| Thu Jul 19 | Isolated T-Storms<br>UV Index: 9 High | 78 °F | 58 °F |
| Fri | | | |

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Allstate. Get Rewarded! In most states safe drivers can save up to 20%

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getsmart.com Click Here to Visit www.getsmart.com

2.99% Intro APR

## Maps

Click Here for Race Day Weather

| | | | | |
|---|---|---|---|---|
| Fri Jul 20 | Isolated T-Storms<br>UV Index: 8 High | | 81 °F | 59 °F |
| Sat Jul 21 | Partly Cloudy<br>UV Index: 9 High | | 82 °F | 62 °F |
| Sun Jul 22 | Partly Cloudy<br>UV Index: 9 High | | 82 °F | 60 °F |
| Mon Jul 23 | Partly Cloudy<br>UV Index: 9 High | | 84 °F | 61 °F |
| Tue Jul 24 | Partly Cloudy<br>UV Index: 9 High | | 82 °F | 63 °F |
| Wed Jul 25 | Partly Cloudy<br>UV Index: 9 High | | 82 °F | 60 °F |


## Go Shopping

## In The Spotlight

## Local Linker

**New York**
Local Ski Resorts
Check New York Flu Conditions
Check La Guardia Flight Arrivals

**New Jersey**
Check N.J. Flu Conditions
Check Newark Flight Arrivals
Newark Pollen

**Connecticut**
Bradley Intl. Flight Arrivals
Mohawk Mntn. Ski Conditons
Check CT Flu Conditions

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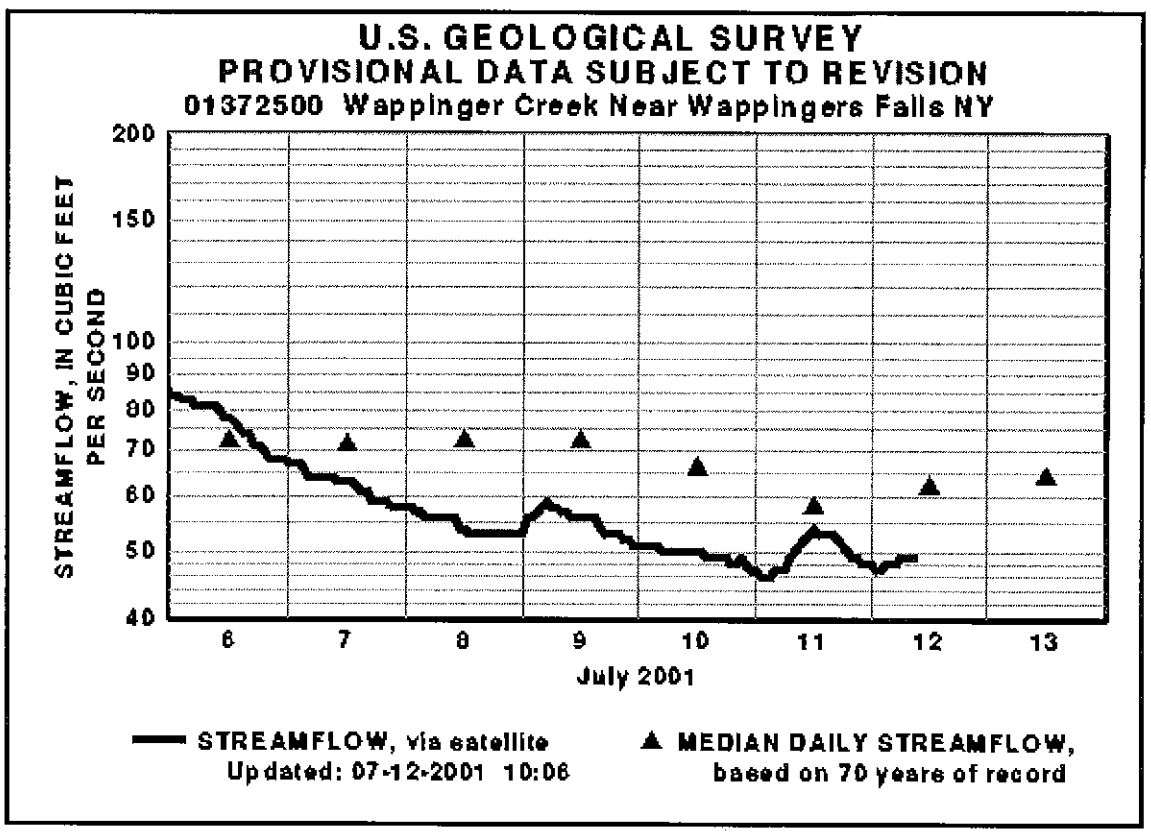
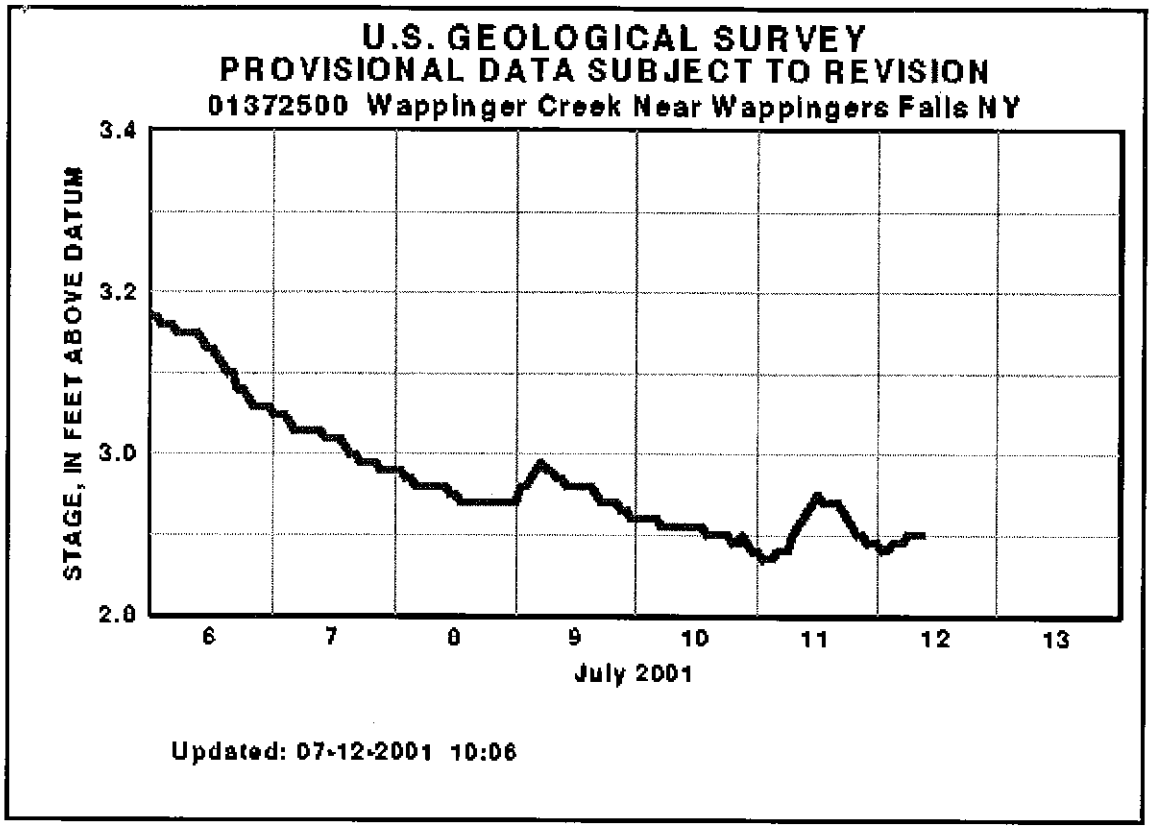
# PROVISIONAL DATA SUBJECT TO REVISION

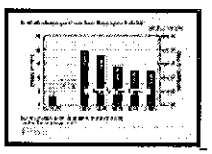
## 01372500-- Wappinger Creek Near Wappingers Falls NY

| Latest Conditions | | | |
|---|---|---|---|
| Flow ($ft^3/s$) | Stage (ft) | Date | Time |
| 49 | 2.9 | 07/12 | 09:15 |






- Additional sensor graph(s) available (click on graph or sensor name)



[ Recorded Peak Stages ]

- Download provisional data
- Retrieve historical daily value data
- Retrieve historical peak flow data
- Map of region surrounding station

| | Daily Mean Discharge Statistics for 07/12 based on 70 years of record, in (ft³/s) | | | | | |
|---|---|---|---|---|---|---|
| Latest flow 07/12 09:15 | Minimum | Mean | Maximum | 80 percent exceedance | 50 percent exceedance | 20 percent exceedance |
| 49 | 12 | 79 | 291 | 29 | 62 | 124 |
| *Percent exceedance means that 80, 50, or 20 percent of all daily mean flows for 07/12 have been greater than the the value shown.* | | | | | | |

| Flood Thresholds | |
|---|---|
| Flow (ft³/s) | Stage (ft) |
| --- | 8.0 |

Water Resources

Data Category: Surface Water | Geographic Area: New York | GO

# Daily Streamflow for New York

ALL DATA ARE EASTERN STANDARD TIME

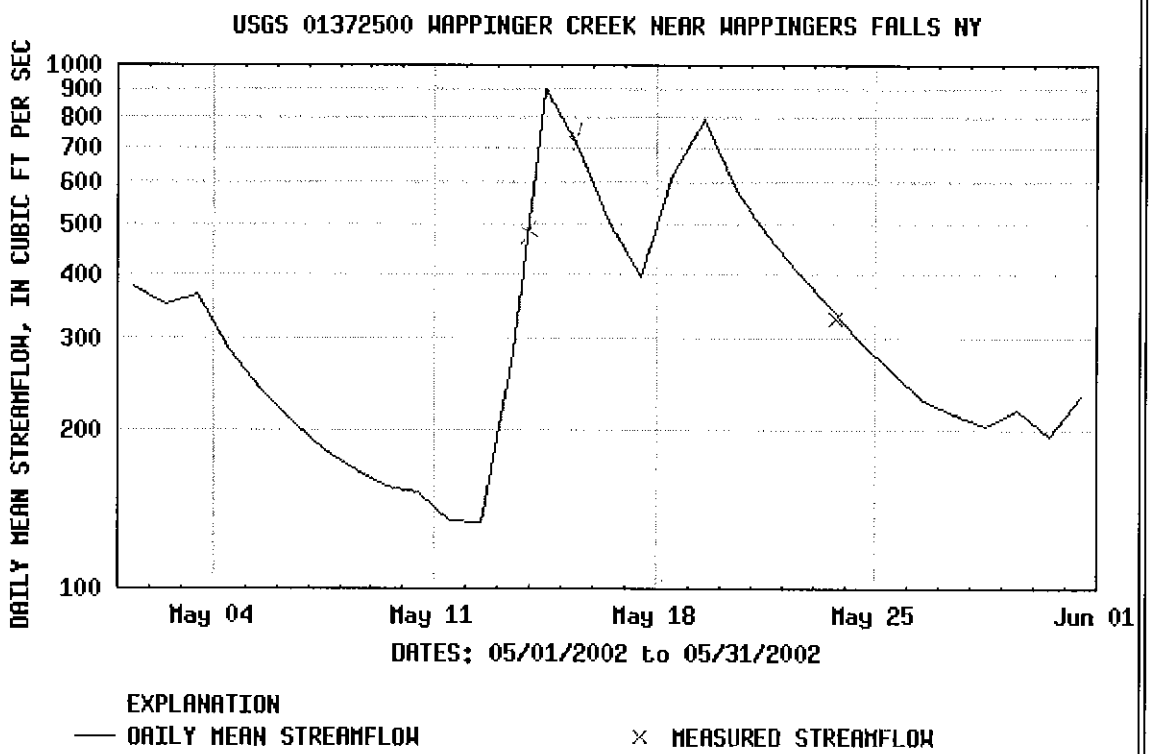
## USGS 01372500 WAPPINGER CREEK NEAR WAPPINGERS FALLS NY

Available data for this site: Surface-water: Daily streamflow GO

Dutchess County, New York
Hydrologic Unit Code 02020008
Latitude 41°39'11", Longitude 73°52'23" NAD27
Drainage area 181.00 square miles
Contributing drainage area 181 square miles
Gage datum 114.37 feet above sea level NGVD29

**Output formats**

- Tab-separated data file
- Graph
- Reselect output format




Download a presentation-quality graph

Questions about data gs-w-ny_NWISWeb_Data_Inquiries@usgs.gov
Feedback on this website gs-w-ny_NWISWeb_Maintainer@usgs.gov

Top
Explanation of terms

**Surface Water for New York: Daily Streamflow**
**http://waterdata.usgs.gov/ny/nwis/discharge?**

**Retrieved on 2003-11-13 14:52:22 EST**
Department of the Interior, U.S. Geological Survey
USGS Water Resources of New York
Privacy Statement || Disclaimer || Accessibility
1.41 1.35 nadww01

Water Resources

Data Category: Surface Water | Geographic Area: New York | GO

# Daily Streamflow for New York

ALL DATA ARE EASTERN STANDARD TIME

## USGS 01372500 WAPPINGER CREEK NEAR WAPPINGERS FALLS NY

Available data for this site: Surface-water: Daily streamflow GO

Dutchess County, New York
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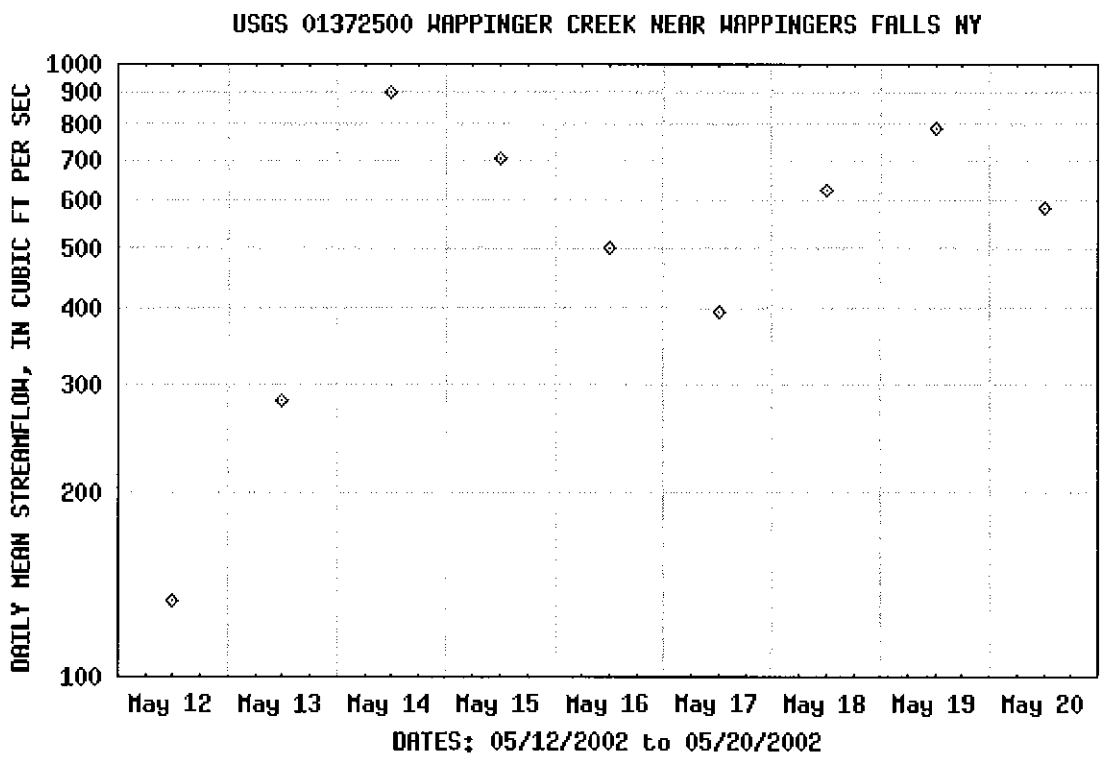
- Tab-separated data file
- Graph
- Reselect output format




Download a presentation-quality graph

Questions about data gs-w-ny_NWISWeb_Data_Inquiries@usgs.gov
Feedback on this website gs-w-ny_NWISWeb_Maintainer@usgs.gov

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**Surface Water for New York: Daily Streamflow**
**http://waterdata.usgs.gov/ny/nwis/discharge?**

**Retrieved on 2003-11-13 14:57:54 EST**
**Department of the Interior, U.S. Geological Survey**
**USGS Water Resources of New York**
**Privacy Statement || Disclaimer || Accessibility**
1.4 1.34 nadww01

Water Resources

Data Category: Surface Water | Geographic Area: New York | GO

# Daily Streamflow for New York

ALL DATA ARE EASTERN STANDARD TIME

## USGS 01372500 WAPPINGER CREEK NEAR WAPPINGERS FALLS NY

Available data for this site: Surface-water: Daily streamflow | GO

Dutchess County, New York
Hydrologic Unit Code 02020008
Latitude 41°39'11", Longitude 73°52'23" NAD27
Drainage area 181.00 square miles
Contributing drainage area 181 square miles
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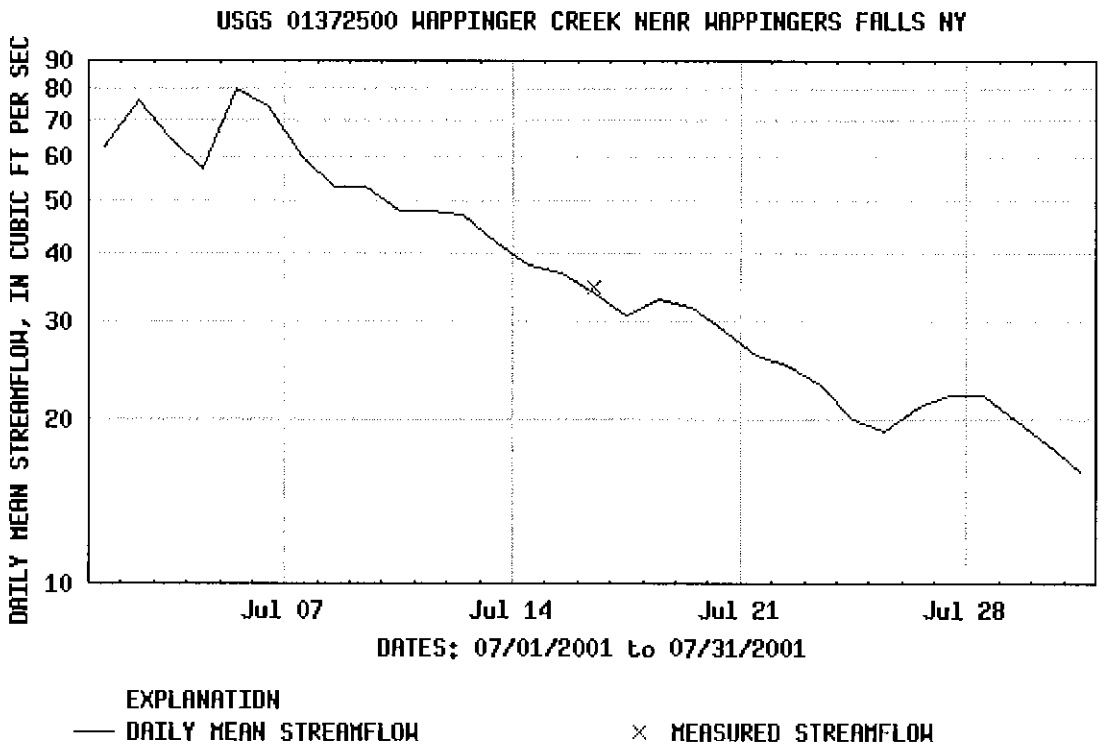
**Output formats**

- Tab-separated data file
- Graph
- Reselect output format




Download a presentation-quality graph

Questions about data gs-w-ny_NWISWeb_Data_Inquiries@usgs.gov
Feedback on this website gs-w-ny_NWISWeb_Maintainer@usgs.gov

Top
Explanation of terms

**Surface Water for New York: Daily Streamflow**
**http://waterdata.usgs.gov/ny/nwis/discharge?**

**Retrieved on 2003-11-13 14:51:31 EST**
**Department of the Interior, U.S. Geological Survey**
**USGS Water Resources of New York**
**Privacy Statement || Disclaimer || Accessibility**
1.39 1.31 nadww01

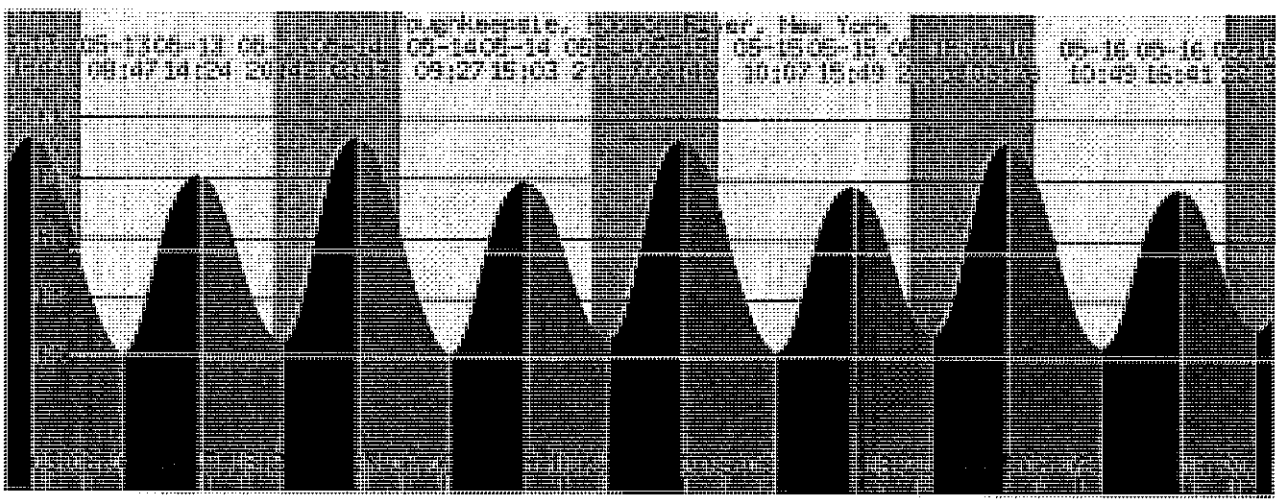
# WWW Tide and Current Predictor

Web interface by Dean Pentcheff.
Calculations and graphics by David Flater's XTide Program.
**(Pick a different site | Frequently Asked Questions)**

NOT FOR NAVIGATION. This program is furnished in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of merchantability or fitness for a particular purpose. Do not use this program as a basis for any decisions that could result in harm to people, other organisms, or property. Check these predictions against officially sanctioned tables. Agencies like NOAA exist because there is a need for certifiably correct tide predictions. Do not rely on these predictions if you need guaranteed results. There is NO WAY we can get certified data on a zero budget. We rely on users like you to tell us when something is wrong. Please continue to do so. **Remember that weather conditions affect tidal ranges and current speeds, sometimes very strongly.**

## Poughkeepsie, Hudson River, New York

## 13 May 2002 - 16 May 2002



*If present, horizontal lines mark mean sea level and datum (usually mean lower low water). Colors under the curve indicate rising and falling tide (not ebb and flood currents).*

Make Prediction Using Options

## Prediction Options

**Select a different site**

**Select display type**

- ○ Tabular List (quickest)
- ○ Text Plot (Plot Type: ◉ Horizontal ○ Vertical) (more plot options below)
- ◉ Graphic Plot: size 640 by 240 pixels (more plot options below)
- ○ One-Month Calendar (Type: ◉ Compact ○ Compact+ ○ Calendar ○ Text)
- ○ Extreme Highest and Lowest Tides Only

○ Strict Intervals (Interval Time: 1 minute )

**Select presentation options**

4 days Length of time to display (ignored by One-Month Calendars)

+0 Change text size (only for browsers supporting font size changes)

Select tide height units: ○ meters ○ feet ◉ default

☐ Suppress credits and warnings on top of page

☐ Suppress sunrise/sunset and lunar information

☐ Printer-friendly bare output (☐ Force plot to B&W lines)

☐ Show site information from database

☐ Show the URL that would recreate this prediction

**Starting time and time display options**

Start at: 2002 May 13 at 00 : 00

◉ Local timezone: [America/New_York] (automatic daylight saving correction)

○ UTC (also known as GMT or Zulu time)

Hour format: ◉ 24-hour time ○ am/pm time

☐ Show day of week

**Select options for plots**

☐ Omit mean sea level and datum lines on plot

☐ Omit high/low times on plots (clears overlapping text)

☐ Plot with lines only, not color-filled (graphical plot only)

Pick colors for color elements (graphical plot only):

| Colors: | black | white | yellow | red | skyblue | deep-skyblue | seagreen | blue |
|---|---|---|---|---|---|---|---|---|
| Elements: | | | | | | | | |
| Text Color | ◉ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Datum Line Color | ○ | ◉ | ○ | ○ | ○ | ○ | ○ | ○ |
| Mean Sea Level Line | ○ | ○ | ◉ | ○ | ○ | ○ | ○ | ○ |
| Mark Tics Color | ○ | ○ | ○ | ◉ | ○ | ○ | ○ | ○ |
| Day Background | ○ | ○ | ○ | ○ | ◉ | ○ | ○ | ○ |
| Night Background | ○ | ○ | ○ | ○ | ○ | ◉ | ○ | ○ |
| Falling/Ebb Color | ○ | ○ | ○ | ○ | ○ | ○ | ◉ | ○ |
| Rising/Flood Color | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◉ |

[ Make Prediction Using Options ]

---

Puzzled by something? Please check the Frequently Asked Questions list.
Send queries about the **WWW interface** to Dean Pentcheff at dean2@biol.sc.edu.
Send queries about the **XTide program** to David Flater at software@flaterco.com.

---

WWW Tide/Current Predictor: `http://tbone.biol.sc.edu/tide`
*Dean Pentcheff, <dean2@biol.sc.edu>*
*Biological Sciences, University of South Carolina, Columbia SC 29208 USA*

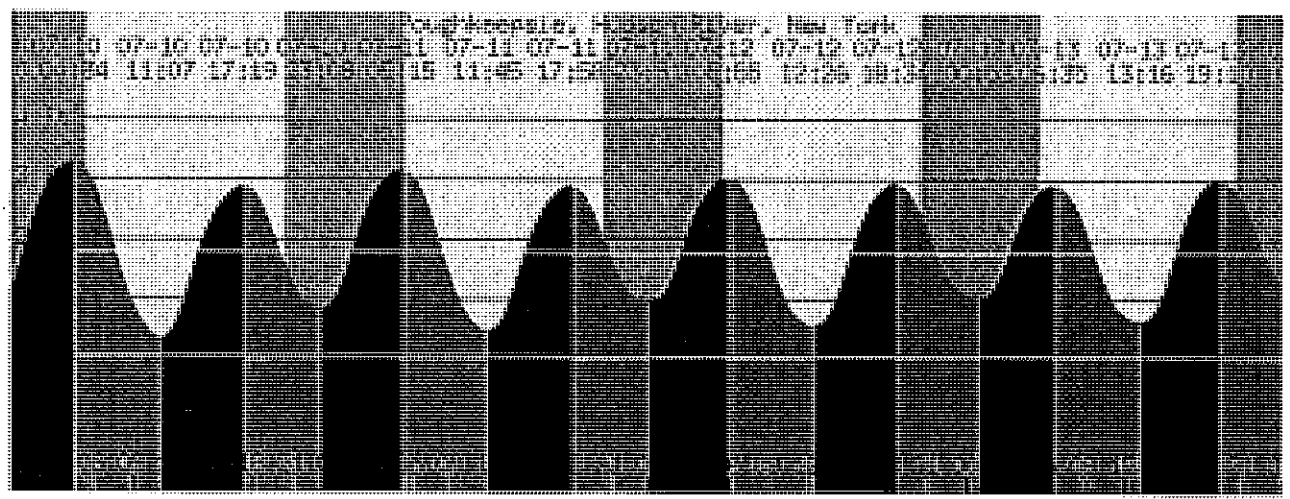
# WWW Tide and Current Predictor

Web interface by Dean Pentcheff.
Calculations and graphics by David Flater's XTide Program.
**(Pick a different site | Frequently Asked Questions)**

NOT FOR NAVIGATION. This program is furnished in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of merchantability or fitness for a particular purpose. Do not use this program as a basis for any decisions that could result in harm to people, other organisms, or property. Check these predictions against officially sanctioned tables. Agencies like NOAA exist because there is a need for certifiably correct tide predictions. Do not rely on these predictions if you need guaranteed results. There is NO WAY we can get certified data on a zero budget. We rely on users like you to tell us when something is wrong. Please continue to do so. **Remember that weather conditions affect tidal ranges and current speeds, sometimes very strongly.**

## Poughkeepsie, Hudson River, New York

## 10 July 2001 - 13 July 2001



*If present, horizontal lines mark mean sea level and datum (usually mean lower low water). Colors under the curve indicate rising and falling tide (not ebb and flood currents).*

Make Prediction Using Options

## Prediction Options

**Select a different site**

**Select display type**

- ○ Tabular List (quickest)
- ○ Text Plot (Plot Type: ◉ Horizontal ○ Vertical) (more plot options below)
- ◉ Graphic Plot: size 640 by 240 pixels (more plot options below)
- ○ One-Month Calendar (Type: ◉ Compact ○ Compact+ ○ Calendar ○ Text)
- ○ Extreme Highest and Lowest Tides Only

○ Strict Intervals (Interval Time: 1 minute )

**Select presentation options**

4 days Length of time to display (ignored by One-Month Calendars)

+0 Change text size (only for browsers supporting font size changes)

Select tide height units: ○ meters ○ feet ◉ default

☐ Suppress credits and warnings on top of page

☐ Suppress sunrise/sunset and lunar information

☐ Printer-friendly bare output (☐ Force plot to B&W lines)

☐ Show site information from database

☐ Show the URL that would recreate this prediction

**Starting time and time display options**

Start at: 2001 Jul 10 at 00 : 00

◉ Local timezone: [America/New_York] (automatic daylight saving correction)

○ UTC (also known as GMT or Zulu time)

Hour format: ◉ 24-hour time ○ am/pm time

☐ Show day of week

**Select options for plots**

☐ Omit mean sea level and datum lines on plot

☐ Omit high/low times on plots (clears overlapping text)

☐ Plot with lines only, not color-filled (graphical plot only)

Pick colors for color elements (graphical plot only):

| Colors: | black | white | yellow | red | skyblue | deep-skyblue | seagreen | blue |
|---|---|---|---|---|---|---|---|---|
| Elements: | | | | | | | | |
| Text Color | ◉ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Datum Line Color | ○ | ◉ | ○ | ○ | ○ | ○ | ○ | ○ |
| Mean Sea Level Line | ○ | ○ | ◉ | ○ | ○ | ○ | ○ | ○ |
| Mark Tics Color | ○ | ○ | ○ | ◉ | ○ | ○ | ○ | ○ |
| Day Background | ○ | ○ | ○ | ○ | ◉ | ○ | ○ | ○ |
| Night Background | ○ | ○ | ○ | ○ | ○ | ◉ | ○ | ○ |
| Falling/Ebb Color | ○ | ○ | ○ | ○ | ○ | ○ | ◉ | ○ |
| Rising/Flood Color | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◉ |

[ Make Prediction Using Options ]

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Puzzled by something? Please check the Frequently Asked Questions list.
Send queries about the **WWW interface** to Dean Pentcheff at dean2@biol.sc.edu.
Send queries about the **XTide program** to David Flater at software@flaterco.com.

---

WWW Tide/Current Predictor: `http://tbone.biol.sc.edu/tide`
*Dean Pentcheff, <dean2@biol.sc.edu>*
*Biological Sciences, University of South Carolina, Columbia SC 29208 USA*

EXHIBIT C

# Sediment physical parameter data

PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
315-437-1420 • (866) 7PW-LABS • FAX 315-437-1752

September 8, 2003

Mr. William Ayling
O'Brien & Gere Laboratories, Inc.
5000 Brittonfield Parkway
East Syracuse, New York 13057

Re: L-03058
Laboratory Testing
Wappingers Creek
Sediment Investigation
Job No. 10653/27258

Dear Mr. Ayling:

Enclosed are the results of laboratory testing performed at your request on four tube sediment samples delivered to our laboratory on May 28, 2003 for the above referenced project. Results include:

| | | |
|---|---|---|
| 1. | Sieve Analysis ASTM D422 & D1140<br>Laboratory I.D. #17193- 17196 | 4 each |
| 2. | Hydrometer Analysis ASTM D422<br>Laboratory I.D. #17193- 17196 | 4 each |

All requested tests have been completed on the previously received sample(s) for the above project. All sample remains are scheduled to be disposed of on October 8, 2003. Please notify PW Laboratories, Inc. by letter or telephone prior to October 8, 2003 if you would prefer to pick up the sample(s) or that the sample(s) be retained by PW Laboratories, Inc. for an additional period of time.

Thank you for this opportunity to work with you.

Very truly yours,

PW LABORATORIES, INC.

Virginia J. Thoma
Manager - Laboratory Services
VJT/klw
encs:

pw labs

PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
315-437-1420 • (866) 7PW-LABS • FAX 315-437-1752

# SIEVE ANALYSIS OF SOIL / AGGREGATE

PROJECT TITLE Laboratory Testing
Wappingers Creek
Sediment Investigation
Job No. 10653/27258

PROJECT # L-03058
TEST METHOD ASTM D422 & D1140

REPORT # 1
REPORT DATE September 8, 2003

| | | | Sieve Size - Percent Passing Sieve | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab I.D. # | Sample | Depth (inches) | 1 1/2" | 1" | 3/4" | 1/2" | 3/8" | 1/4" | #4 | #10 | #30 | #40 | #60 | #100 | #200 | |
| 17193 | WP- T3A | 0.0- 6.0 | -- | 100 | 99.4 | 99.2 | 98.6 | 97.8 | 97.4 | 96.1 | 78.3 | 74.4 | 66.9 | 57.4 | 44.2 | |
| 17194 | SED Core 2 | 0.0- 6.0 | -- | -- | -- | -- | -- | 100 | 99.9 | 99.0 | 82.3 | 76.8 | 64.1 | 48.8 | 32.3 | |
| 17195 | SED Core 3 | 0.0- 6.0 | -- | 100 | 99.4 | 99.4 | 99.4 | 99.4 | 99.2 | 98.4 | 88.1 | 84.7 | 74.0 | 50.2 | 30.7 | |
| 17196 | SED Core 4 | 0.0- 6.0 | 100 | 91.5 | 91.2 | 76.6 | 68.5 | 62.3 | 58.6 | 53.4 | 35.8 | 31.8 | 26.4 | 22.0 | 17.4 | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

Sample mass, as received, meets minimum mass requirements of test method: Yes X No ____

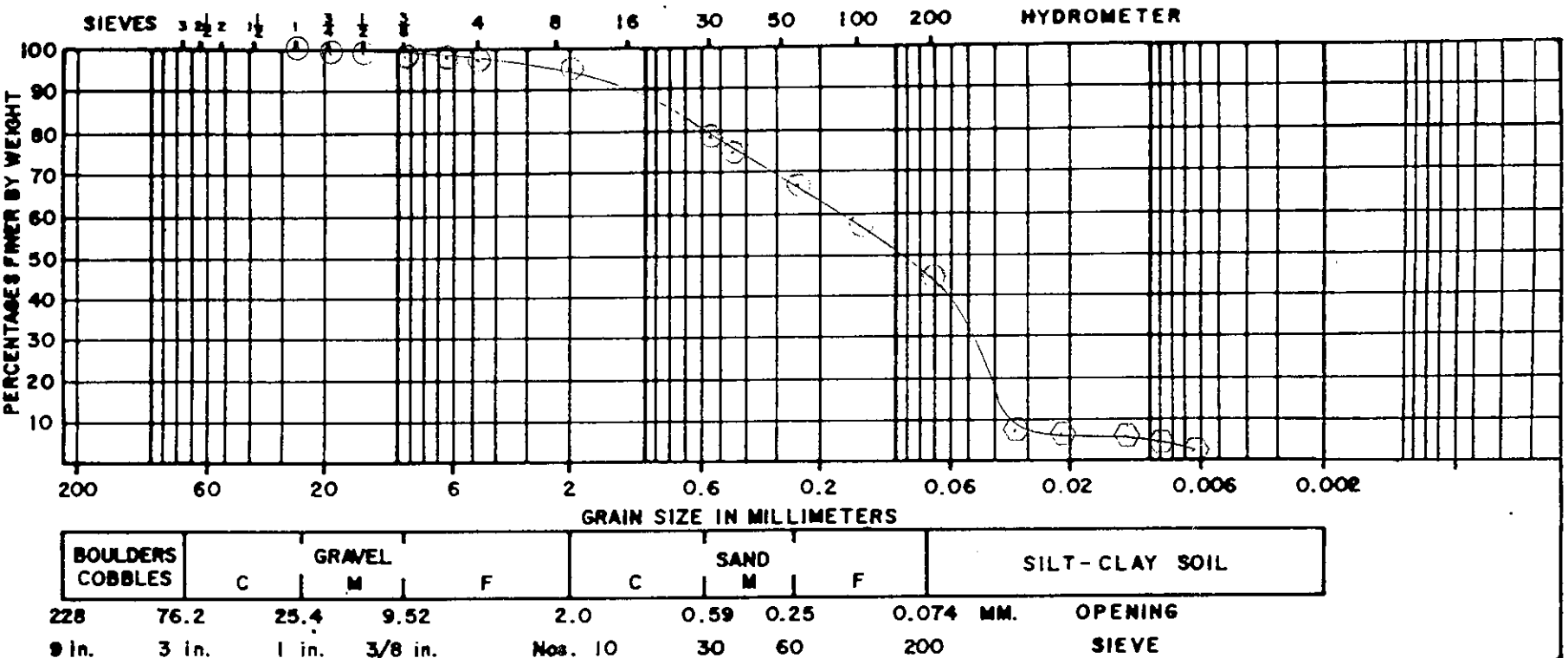
Prewashed: Yes X No ____

Remarks:

Performed By: TT

Checked By: V.J. Thoma

# GRAIN SIZE ANALYSIS




L-03058 Lab I.D. #: 17193

Laboratory Testing Sample WP-T3A

Wappingers Creek Depth: 0.0"-6.0"

Sediment Investigation

Job No. 10653/27258

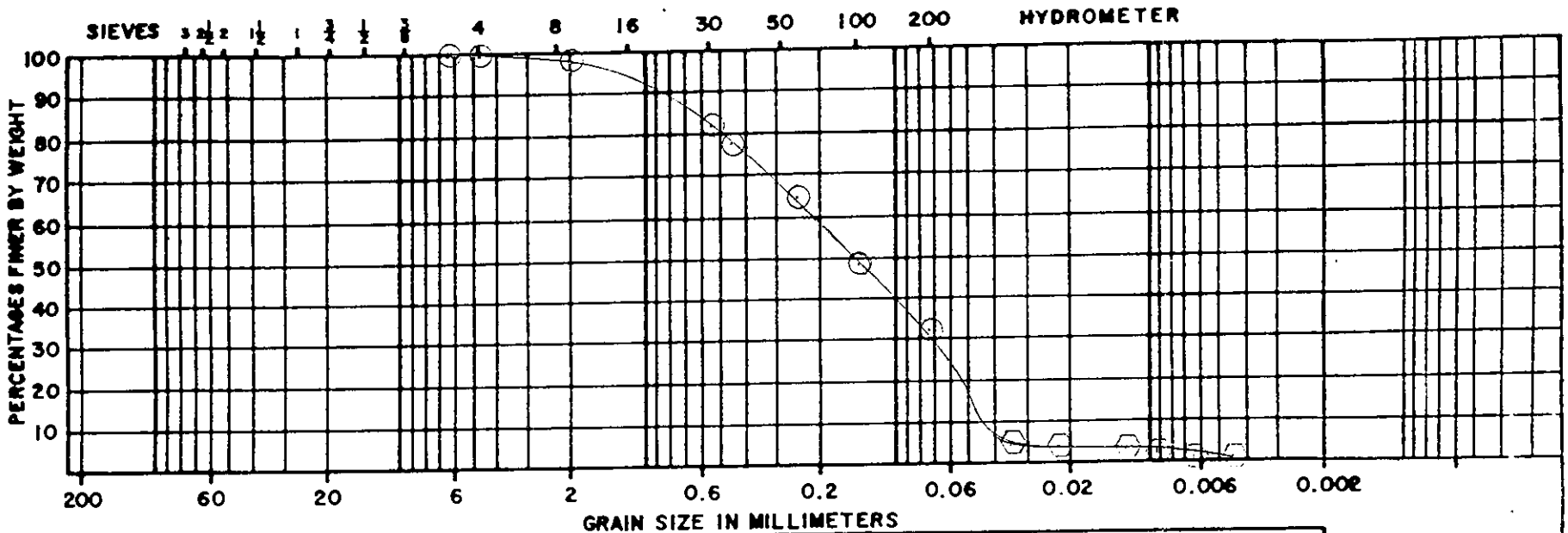
⊙ Sieve Analysis ASTM D422 & D1140

⬡ Hydrometer Analysis ASTM D422


PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
315-437-1420 • (866) 7PW-LABS • FAX 315-437-1752


Job No.: L-03058
Report No: 1
September 8, 2003

# GRAIN SIZE ANALYSIS




| BOULDERS COBBLES | GRAVEL C | GRAVEL M | GRAVEL F | SAND C | SAND M | SAND F | SILT-CLAY SOIL |
|---|---|---|---|---|---|---|---|

228 76.2 25.4 9.52 2.0 0.59 0.25 0.074 MM. OPENING

9 in. 3 in. 1 in. 3/8 in. Nos. 10 30 60 200 SIEVE

L-03058

Laboratory Testing

Wappingers Creek

Sediment Investigation

Job No. 10653/27258

Lab I.D. #: 17194

Sample SED Core 2

Depth: 0.0"-6.0"

⊙ Sieve Analysis ASTM D422 & D1140

⬡ Hydrometer Analysis ASTM D422

PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
315-437-1420 • (866) 7PW-LABS • FAX 315-437-1752

pw labs

Job No.: L-03058
Report No: 2
September 8, 2003

# GRAIN SIZE ANALYSIS

PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
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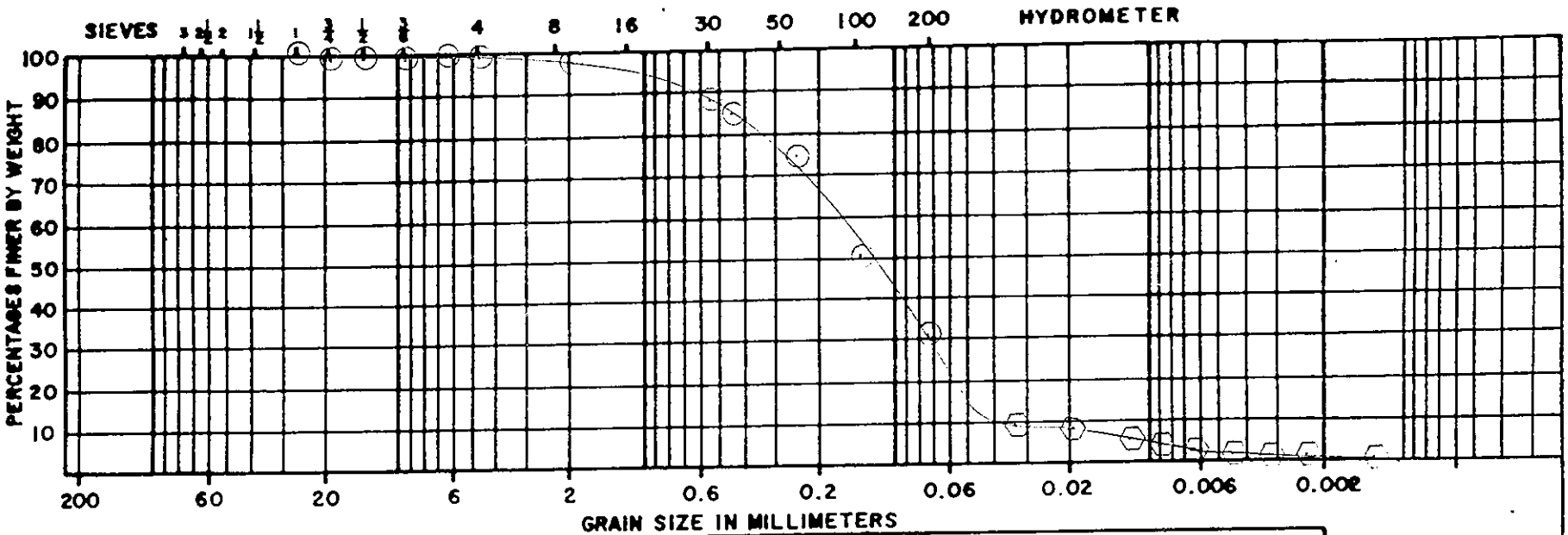



| BOULDERS COBBLES | GRAVEL C | GRAVEL M | GRAVEL F | SAND C | SAND M | SAND F | SILT-CLAY SOIL |
|---|---|---|---|---|---|---|---|

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 228 | 76.2 | 25.4 | 9.52 | 2.0 | 0.59 | 0.25 | 0.074 | MM. | OPENING |
| 9 in. | 3 in. | 1 in. | 3/8 in. | Nos. 10 | 30 | 60 | 200 | | SIEVE |

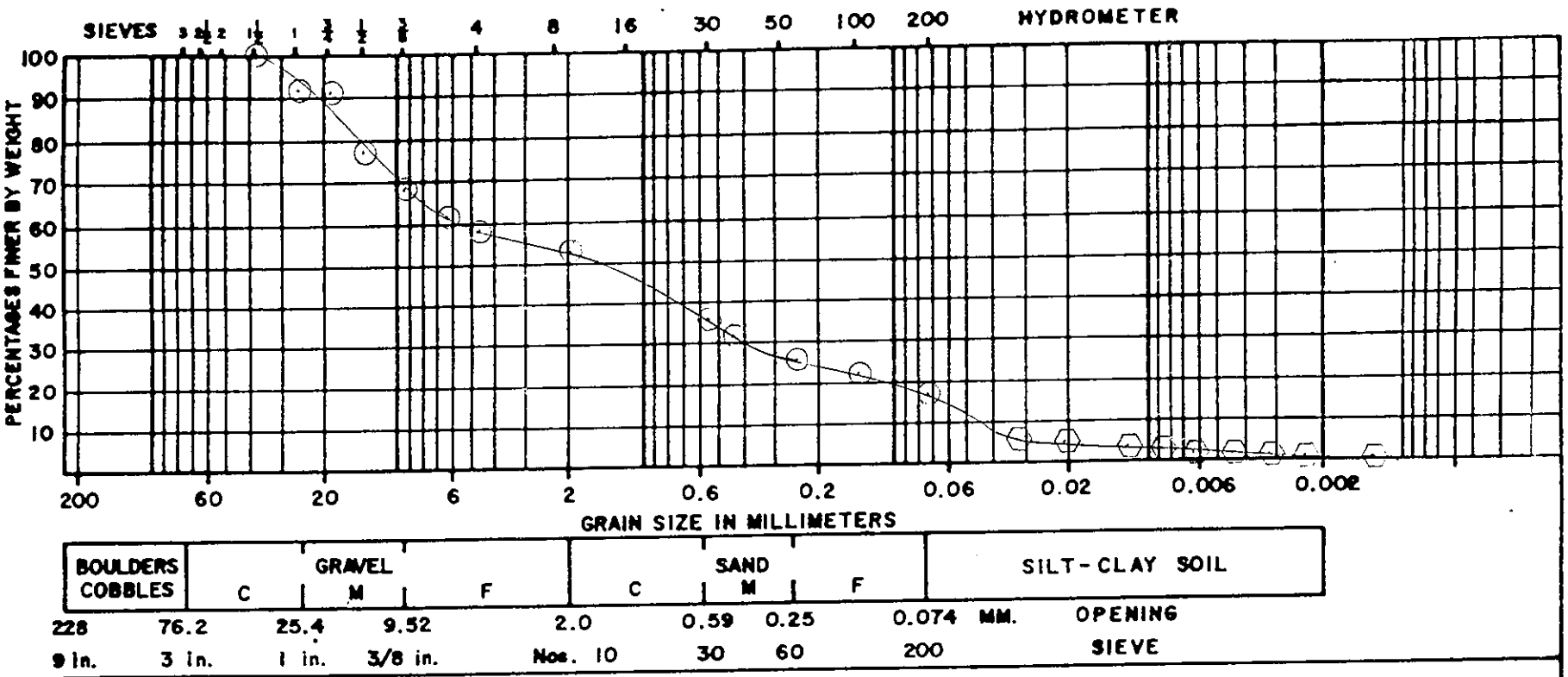
L-03058
Laboratory Testing
Wappingers Creek
Sediment Investigation
Job No. 10653/27258

Lab I.D. #: 17195
Sample SED Core 3
Depth: 0.0"-6.0"

⊙ Sieve Analysis ASTM D422 & D1140
⊙ Hydrometer Analysis ASTM D422

Job No.: L-03058
Report No: 3
September 8, 2003

# GRAIN SIZE ANALYSIS





PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
315-437-1420 • (800) TEST-LABS • FAX 315-437-1752


L-03058

Laboratory Testing

Wappingers Creek

Sediment Investigation

Job No. 10653/27258

Lab I.D. #: 17196

Sample SED Core 4

Depth: 0.0"-6.0"

⊙ Sieve Analysis ASTM D422 & D1140

⬡ Hydrometer Analysis ASTM D422

Job No.: L-03058

Report No: 4

September 8, 2003

# Appendix B

# Biota Sampling Report for Wappinger Creek (EA 2007)

# Biota Sampling Report for Wappinger Creek Three Star Anodizing Site (3-14-058) Wappingers Falls, New York

*Prepared for*

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

*Prepared by*

EA Engineering, P.C. and Its Affiliate
EA Science and Technology
3 Washington Center
Newburgh, New York 12550
(845) 565-8100

October 2007
Revision: DRAFT
EA Project No. 14368.10

# Biota Sampling Report for Wappinger Creek
# Three Star Anodizing Site (3-14-058)
# Wappingers Falls, New York

*Prepared for*

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

*Prepared by*

EA Engineering, P.C. and Its Affiliate
EA Science and Technology
3 Washington Center
Newburgh, New York 12550
(845) 565-8100

---

Christopher J. Canonica, P.E., Program Manager — Date
EA Engineering, P.C.

---

Paul H. Muessig, Project Manager — Date
EA Science and Technology

October 2007
Revision: DRAFT
EA Project No. 14368.10

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APPENDIX D: DATA USABILITY SUMMARY REPORT (provided on CD)
APPENDIX E: FIELD PHOTO LOG
APPENDIX F: SUMMARY OF FIELD AND VALIDATED ANALYTICAL DATA

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| Number | Title |
|---|---|
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# 1. INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) tasked EA Engineering, P.C. and its affiliate EA Science and Technology to collect aquatic biota from Wappinger Creek at the Three Star Anodizing site, Wappingers Falls, New York (Figure 1).

The Work Assignment was conducted under the NYSDEC State Superfund Standby Contract (Work Assignment No. D004438-10).

The objectives of this Work Assignment were to:

- Collect aquatic biota (fish and aquatic invertebrate) samples from the tidal portion of Wappinger Creek to determine the concentration of eight metals in fish and invertebrate tissue

- Analyze tissue samples for arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc.

As part of this task, EA collected fish and aquatic invertebrate tissue and subcontracted laboratory services for analysis of arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc in tissue samples. Data were reviewed and validated by an independent data validation subconsultant.

# 2. SAMPLING AND ANALYTICAL METHODS

## 2.1 FISH TISSUE COLLECTION

Fish were collected from two sampling areas shown on Figure 2; locations and sampling procedures are described in more detail below:

- ***Fish Sampling Area 1 (FSA-1) – Embayment and Shoal***—Sampling began in the embayment and worked upstream through the shoal area until the target number of samples were collected.

- ***Fish Sampling Area 2 (FSA-2) – The Downstream Section***—Sampling began at the County Route 28 bridge and worked upstream until the target number of samples were collected.

A total of 60 samples of fish tissue were collected across the two sampling areas. The Work Assignment and Field Sampling Plan (EA 2007) specified that for each sampling area, 15 samples would be collected for each of 2 target species for a total of 30 samples.

| WAPPINGER CREEK FISH COLLECTION | | |
|---|---|---|
| Location | Target Species | No. of Samples |
| FSA -1 | Largemouth Bass | 15 |
| | Spottail Shiner | 15 |
| FSA -2 | Largemouth Bass | 15 |
| | Spottail Shiner | 15 |
| TOTAL | | 60 |

The target species for this sampling effort were largemouth bass (*Micropterus salmoides*) and spottail shiner *(Notropis hudsonius)*. These species were chosen to represent different trophic levels; that is, largemouth bass represent top trophic level piscivore and spottail shiner represent lower trophic level forage fish. During the field sampling effort, it became apparent that adequate numbers of the target species could not be collected to fill the sampling quotas; therefore, in consultation with NYSDEC, other target species of opportunity were selected to augment the number of samples. The "targets of opportunity" were selected to represent similar trophic levels as the target species. Smallmouth bass *(Micropterus dolomieu)* were collected to complete the quota for largemouth bass and banded killifish (*Fundulus diaphanus*) and tessellated darters (*Etheostoma olmstedi*) were collected to supplement spottail shiner samples.

Fish tissue sampling was conducted on 1-3 May 2007.

Electrofishing by boat was the primary collection gear for sampling Wappinger Creek; however, 100-ft beach seine, experimental gill nets, and wire-mesh minnow traps were also used.

Sampling was conducted under NYSDEC License to Collect and Possess No. 1051. Sampling procedures complied with the Field Sampling Plan (EA 2007) and were consistent with *Draft Procedures for Collection and Preparation of Aquatic Biota for Contaminant Analysis* (NYSDEC Division of Fish, Wildlife, and Marine Resources, Bureau of Habitat 2002). These methods were established to optimize collection of specimens for contaminant analysis rather than quantification of sampling effort.

## 2.2 INVERTEBRATE TISSUE COLLECTION

Invertebrate sampling was conducted at four locations shown on Figure 3 and described below:

- Wappinger Biota Station 1 (WBS-1) – Shoal area
- Wappinger Biota Station 2 (WBS-2) – Embayment
- Wappinger Biota Station 3 (WBS-3) – Downstream section (i.e., the widest section of Wappinger Creek)
- Wappinger Biota Station 4 (WBS-4) – County Route 28 Bridge.

Odonata (i.e., dragonfly larvae) were selected as the target organism for assessment of metal contaminants in forage invertebrate tissue. If the targeted taxon could not be collected, non-target species of opportunity were to be retained for analysis. Suggested invertebrate targets of opportunity included crayfish, stonefly larvae, caddis fly larvae, hellgrammites, and mollusks.

A total of 20 invertebrate samples were proposed for analysis; five samples from each of four stations:

| WAPPINGER CREEK INVERTEBRATE COLLECTION | | |
|---|---|---|
| Location | Target Organism | No. of Samples |
| WBS-1 | Dragonfly Larvae | 5 |
| WBS-2 | Dragonfly Larvae | 5 |
| WBS-3 | Dragonfly Larvae | 5 |
| WBS-4 | Dragonfly Larvae | 5 |
| TOTAL | | 20 |

Sampling efforts for invertebrates were conducted during the fish sampling on 1-4 May and additionally on 14 June and 29 August 2007.

Invertebrate nets, sieve buckets, ponar dredge, crayfish traps, and hand picking from rocks and stem and root masses of aquatic vegetation were used as collection methods for sampling Wappinger Creek.

## 2.3 SAMPLE PREPARATION AND ANALYSIS

Total length and weight were recorded for all fish specimens. After measuring length and weight, fish samples were inspected for gross morphological conditions and abnormalities: fin erosion, skin ulcers, skeletal/shell anomalies, and neoplasms (tumors). Completed Field Data Forms are provided in Appendix A.

Largemouth and smallmouth bass collected for filet samples were placed in individual zip-lock bags labeled with sample number, location, date, taxon, initials of the sampling crew, and sample type (i.e., fillet). The bags were placed on ice in the field and then frozen as soon as possible after return from the field.

Total length and weight of individual forage fish that composed each composite sample for whole body analysis were recorded. Groups of forage fish and invertebrates comprising each composite sample were placed in labeled zip-lock bags and placed on ice in the field. After return from the field, these samples were transferred to decontaminated glass jars provided by the laboratory and frozen.

Frozen samples were double bagged and shipped on ice in coolers by overnight courier service to Pace Analytical Services. All samples in each cooler were logged on a Chain-of-Custody Form (Appendix B) which was affixed to the inside of the cooler. Coolers were taped closed and sealed with a signed Custody Seal.

Final tissue preparation and homogenization for analysis were performed by the analytical laboratory. Tissue sample preparation followed the protocols described in *Draft Procedures for Collection and Preparation of Aquatic Biota for Contaminant Analysis*, except for project specific modifications specified in the Contract Work Assignment and described in the Field Sampling Plan (EA 2007). Largemouth bass and smallmouth bass were prepared by the analytical laboratory using the standard filleting method while composite samples of spottail shiner, banded killifish, and tessellated darters were prepared for whole body analysis by the analytical laboratory.

The sample mass was sufficient to provide the laboratory with adequate tissue to allow achievement of the established analytical detection limits, whether the sample was a filet or a composite. Pace Analytical Services specified that 5 g of tissue was adequate to achieve the specified detection limits, but that samples consisting of 10-15 g of tissue were preferable. Bass filets were prepared with scales removed, but skin on; each sample consisted of one entire filet. The left filet was used for all primary analyses; the right filet was used for field duplicate analyses. The unused fillet from each specimen and unused homogenate were retained by the laboratory, in the event that additional analyses were requested.

Each sample was analyzed for arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc concentrations. U.S. Environmental Protection Agency SW-846 Method 7471A was used for mercury and Method 6020 was used for the Resource Conservation and Recovery Act

metals. Laboratory quality control methods and samples are described in the project Quality Assurance Project Plan (EA 2007) and included matrix spike/matrix spike duplicate, laboratory control sample, blanks, instrument calibrations, dilutions, and field duplicates.

The laboratory data packages (Appendix C) were reviewed for compliance with protocols and methods and data usability by Environmental Data Services, Inc of Williamsburg, Virginia. The Data Usability Summary Review Reports are provided in Appendix D. These data have been validated according to the protocols and quality control requirements for the analytical methods, EPA Region II Standard Operating Procedure (HW2 Revision, 11 January 1992) for the Evaluation of Metals Data for the Contract Laboratory Program.

# 3. FIELD OBSERVATIONS AND ANALYTICAL RESULTS

## 3.1 SAMPLE COLLECTIONS

### 3.1.1 Fish Sampling

Fish samples were collected from the tidal reach of Wappinger Creek on 1-3 May 2007 from the sampling areas designated FSA-1, the upstream embayment and shoal, and FSA-2, the downstream reach above the highway bridge at County Route 28. The primary sampling method was boat electrofishing focused in the vicinity of woody debris along the intertidal shore zone and in the embayment within 1-2 hours of high tide. Supplemental sampling using gill nets and beach seines was also conducted. A photo record of field sampling activities and aquatic habitat in the study reach is provided in Appendix E.

The majority of largemouth bass for analysis of edible filets were collected by electrofishing; however, the number of specimens collected was insufficient to meet the sample quota for area FSA-1. Four smallmouth bass collected in area FSA-1 by electrofishing were used to complete the sample quota for top predators from this sampling area. Two field duplicate samples of largemouth bass were analyzed.

Forage fish for analysis of whole body contaminant burden were collected by electrofishing and beach seine. Fifteen samples plus a field duplicate of spottail shiner were collected from area FSA-1; seven samples plus a field duplicate of spottail shiner were collected from area FSA-2. In consultation with NYSDEC, the sample quota for FSA-2 was completed with 6 samples of banded killifish and 2 samples of tessellated darter.

Largemouth bass ranged in size from 269 to 509 mm total length and 278-2,600 g total weight. The mean length and weight for largemouth bass from area FSA-2 were slightly higher than for bass collected from area FSA-1. Smallmouth bass were collected only from area FSA-1 and measured 344-407 mm in total length; weight ranged from 424 to 1,003 g. All bass of both species appeared generally healthy and robust. Four largemouth bass (two from each sampling area) and one smallmouth bass had lesions on their mandible and abdominal area. All the sores were fresh and clean with no apparent secondary fungal or bacterial infections. As these collections were made during the spawning season, it is possible that the sores were a result of abrasions sustained during nest excavation activities. No other abnormalities or deformities were observed on any of the other bass.

Composite samples of spottail shiners were comprised of 1-6 individuals; most composites contained two specimens. The total length of spottail shiners collected from area FSA-1 ranged from 94 to 115 mm; the mean length of the composite samples ranged from approximately 100 to 111 mm. The total length of spottail shiners collected from area FSA-2 ranged from 76 to 114 mm; the mean length of the composite samples ranged from approximately 81 to 113 mm. The weight of spottail shiners from FSA-1 ranged from 7.1 to 15.1 g; spottail shiners from FSA-2 weighed between 3.7 and 14.6 g. No abnormalities or deformities were observed on any

spottail shiners. The 6 samples of banded killifish from FSA-2 were composites of between 3 and 26 specimens. Total length of banded killifish ranged from 30 to 84 mm with average lengths of composite samples between 40.9 mm 68.3 mm. Individual weights ranged from 0.3 to 2.3 g. No abnormalities or deformities were observed for any banded killifish.

Total length of tessellated darters ranged from 51 to 64 mm; the mean length of the two composite samples were 58 and 59.2 mm. Individual weights ranged from 1.1 to 3 g. No abnormalities or deformities were observed for any tessellated darters.

### 3.1.2 Invertebrate Sampling

Invertebrate sampling occurred on 1-4 May, 21 June, and 29 August 2007. The most productive sampling was from picking organisms off rocks in the intertidal zone. In general, macroinvertebrates were scarce on all sampling dates. No Odonate larvae were collected on any date and few adult dragonflies were observed in the sampling areas. Numerous grab samples were collected using nets, buckets, and ponar dredge in the cove (WBS-2), along the shore, on the shoal (WBS-1), and in the channel of the tidal reach of Wappinger Creek (WBS-3 and WBS-4). During the May 2007 sampling, the cove and main channel of the Creek had open water with minimal aquatic vegetation. During the subsequent June and August sampling, much of the specified sampling areas in the tidal reach were choked with water chestnut. On the June and August visits, the cove was filled with a diversity of emergent and submerged wetland vegetation. An extensive effort was expended examining the stems and root mass to aquatic vegetation in the cove wetland and the extensive beds of water chestnut for invertebrates. No live Odonates or their cast-off exoskeletons were found on stems of the wetland vegetation. Extensive searching among rocks and on the substrate of the wetland produced only one crayfish (during the August visit), too small to constitute a sample. Occasional mayfly larvae, cadis fly larvae, amphipods, and isopods were encountered, but were not numerous or large enough to generate a sample.

Only two locations, WBS-4 and the south shoreline near WBS-3, produced sufficient organisms for composite samples. At both locations, zebra mussel and an unidentified species of snail were collected within a very concentrated and defined area of the shoreline; mussels and snails were not observed in any abundance outside of these two limited areas. The width of the shells of the zebra mussels were generally less than 10 mm, and the length of the spiral of the snails was typically less than 6 mm. The shells of both species were thin and fragile. The sample homogenate was prepared from the whole organisms including the shell. The composite samples of approximately 5 g typically consisted of 30-40 mussels or 55-65 snails.

### 3.1.3 Other Observations of Vertebrate Wildlife

Numerous observations of great blue heron, green heron, and American egret feeding and roosting in the shallows were made during the three sampling events. Osprey were also observed during all three sampling events; during the last event, an osprey was observed capturing what appeared to be a bass in the vicinity of WBS-3. An active beaver den and

beaver were observed along the shoreline in the vicinity of the cove (WBS-2). A number of large carp were observed during the second and third sampling events within the cove during high tide.

## 3.2 TISSUE CONTAMINANT DATA

### 3.2.1 Fish Tissue

The analytical results from the tissue analyses reported in wet weight are provided in Appendix F and summarized in Table 1. Nickel was below detection (0.34 mg/kg) in all but one fish tissue sample; one spottail shiner sample from FSA-1 was reported at 0.36 mg/kg. The concentrations of arsenic, cadmium, chromium, copper, lead, nickel, and zinc in edible portion filet samples from largemouth bass and smallmouth bass were generally reported with either a "U" and/or "J" qualifier; that is, either not detected or estimated concentration between the Method Detection Limit and the Reporting Limit. Mercury was the only metal in the validated dataset that was above the reporting limit. Mercury in largemouth bass filets ranged from 0.074 to 0.410 mg/kg in area FSA-1 and from 0.062 to 0.600 mg/kg from FSA-2. Smallmouth bass filets from FSA-1 had mercury concentrations between 0.090 and 0.340 mg/kg.

For most whole body samples (spottail shiner, banded killifish, and tessellated darter), the concentrations of arsenic, cadmium, chromium, copper, lead, and nickel were reported with a "U" or "J" qualifier. The zinc results for one batch of 14 spottail shiner whole body samples was rejected during data validation because of low recoveries (-3.1-12.9 percent) for the associated matrix spike/matrix spike duplicate sample. Of the other 17 samples, lead concentrations were between 22 and 48 mg/kg except for one sample reported at 78 mg/kg with a "J" qualifier. Mercury concentrations ranged from 0.016 to 0.067 mg/kg for the whole body forage fish samples. The reported mercury concentrations for banded killifish, tessellated darter, and most of the spottail shiners from FSA-2 were listed with a "J" qualifier.

### 3.2.2 Invertebrate Tissue (*Note: Invertebrate analytical results have not completed the data validation process*)

Concentrations of arsenic, cadmium, chromium, copper, lead, and nickel were generally lower in the mollusks (zebra mussel and snails) than in the fish. Mercury concentrations were typically lower in the invertebrate samples (0.0060-0.0230 mg/kg) than in the fish (0.0160-0.6000 mg/kg). Zinc concentrations in the invertebrate samples (5.4-25.0 mg/kg) were generally lower than in the whole body forage fish samples (18.0-78.0 mg/kg), but higher than the fish filet samples (5.3-11.0 mg/kg).

### 3.2.3 Statistical Comparison among Stations and Taxa

Fisher's least significant difference test was used to compare chemical concentrations among sample locations for each taxa. Results of the station location comparisons were used to determine if data from different locations could be lumped for purposes of comparing chemical concentration among taxa. Comparisons among taxa were then performed. Because the

distributions of chemical concentrations were non-normal, the least significant difference tests were computed on the data ranks rather than the data scores as described by Conover and Iman (1979), and Iman (1982). All statistical tests were done using the SAS Institute, Inc. (2001) statistical software Version 8.02 with a comparison-wise Type I error rate of $\alpha = 0.05$.

Comparisons by species indicated no significant difference between sampling stations (FSA-1 versus FSA-2; WBS-3 versus WBS-4) in the tissue concentration of metal contaminants (Table 2). Consequently, tissue concentration data from the different sampling stations were combined to test for differences among species.

Comparison among species (Table 3 and Figure 4) indicated considerable variability among taxon. The taxa distributed into three groups based on percent solids: invertebrates were highest, the bass species were lowest, and the forage fish species were grouped intermediate. The invertebrates generally had higher metal tissue concentrations than fish for arsenic, cadmium, copper, lead, and nickel (Table 1). Forage fish generally had higher concentrations of zinc and bass had higher concentrations of mercury. There was considerable statistical overlap among trophic groups (invertebrates, forage fish, and top predators) based on tissue concentrations of the eight metals; although some similarities among the sampled taxa were noted. The invertebrates were grouped together statistically (Table 3 and Figure 4) for cadmium, nickel, and lead; the two bass species were grouped together for copper and lead. All the fish species grouped together for nickel and the three forage fish species grouped together for copper, lead, and zinc.

# 4. REFERENCES

Conover, W.J. and Iman, R.L. 1979. On multiple comparison procedures. Technical Report LA-7677-MS, Los Alamos Scientific Laboratory.

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Iman, R.L. 1982. Some aspects of the rank transform in analysis of variance problems. Proceedings of the Seventh Annual SAS Users Group International Conference, 7, 676-680.

New York State Department of Environmental Conservation (NYSDEC). 2002. Procedures for Collection and Preparation of Aquatic Biota for Contaminant Analysis. Draft. Division of Fish, Wildlife, and Marine Resources, Bureau of Habitat.

SAS Institute, Inc. 2001. SAS/STAT™ User's Guide, Release 8.02 Edition. SAS Institute, Inc., Cary, North Carolina.

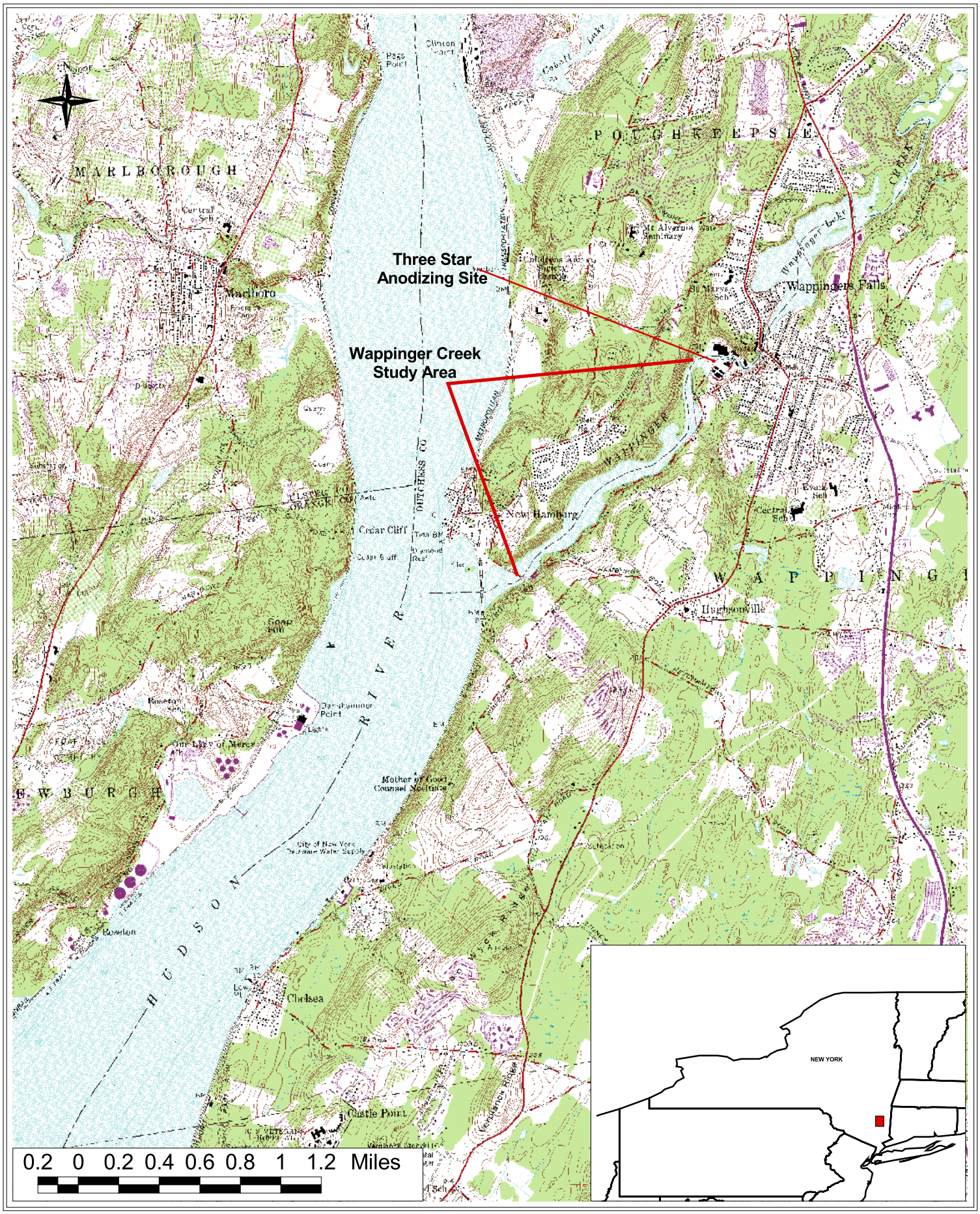


Figure 1. Location map showing Wappinger Creek study area and Three Star Anodizing site.

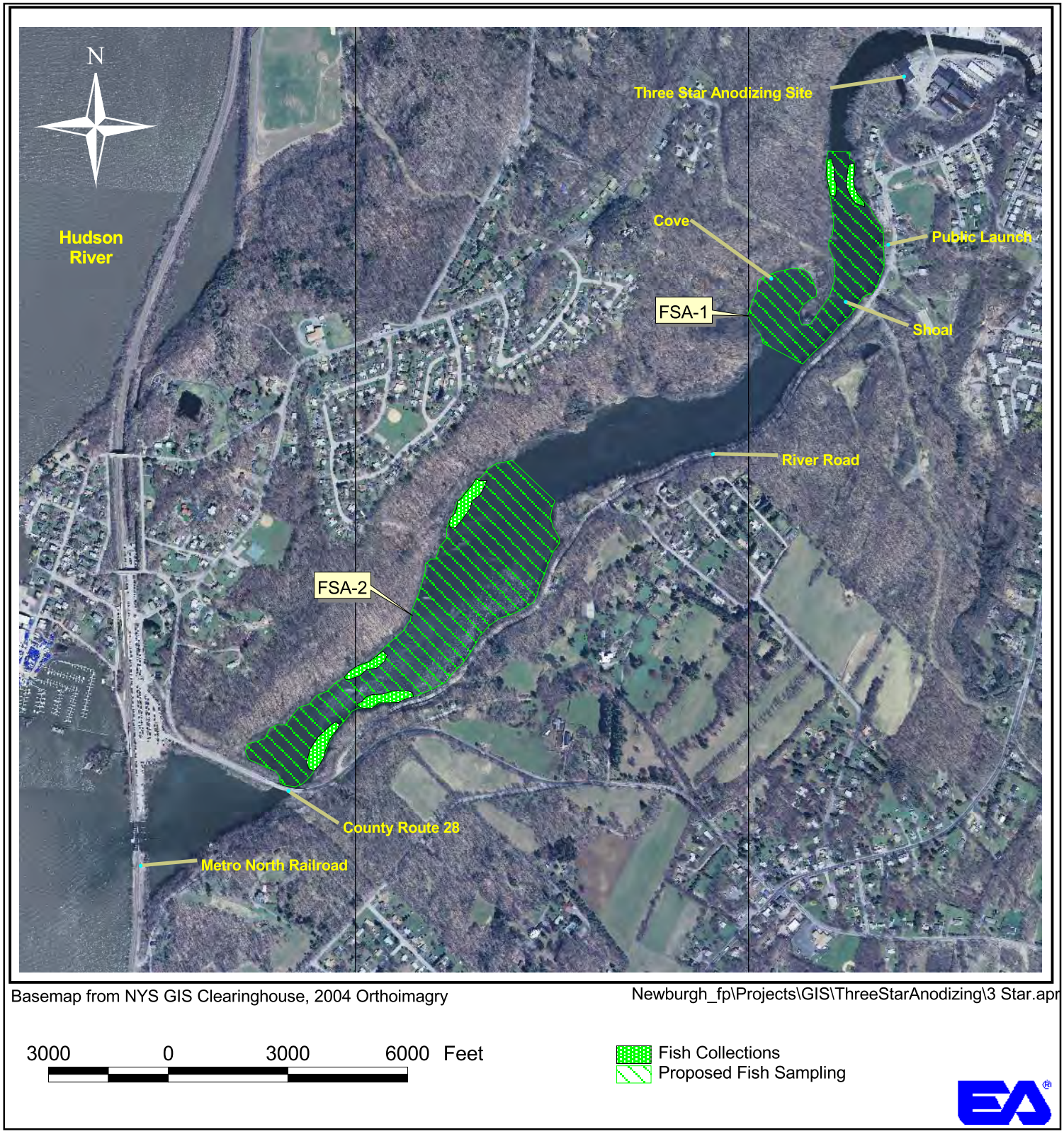


Figure 2. Location of sampling zones and fish collections in Wappinger Creek below Three Star Anodizing site, May 2007.

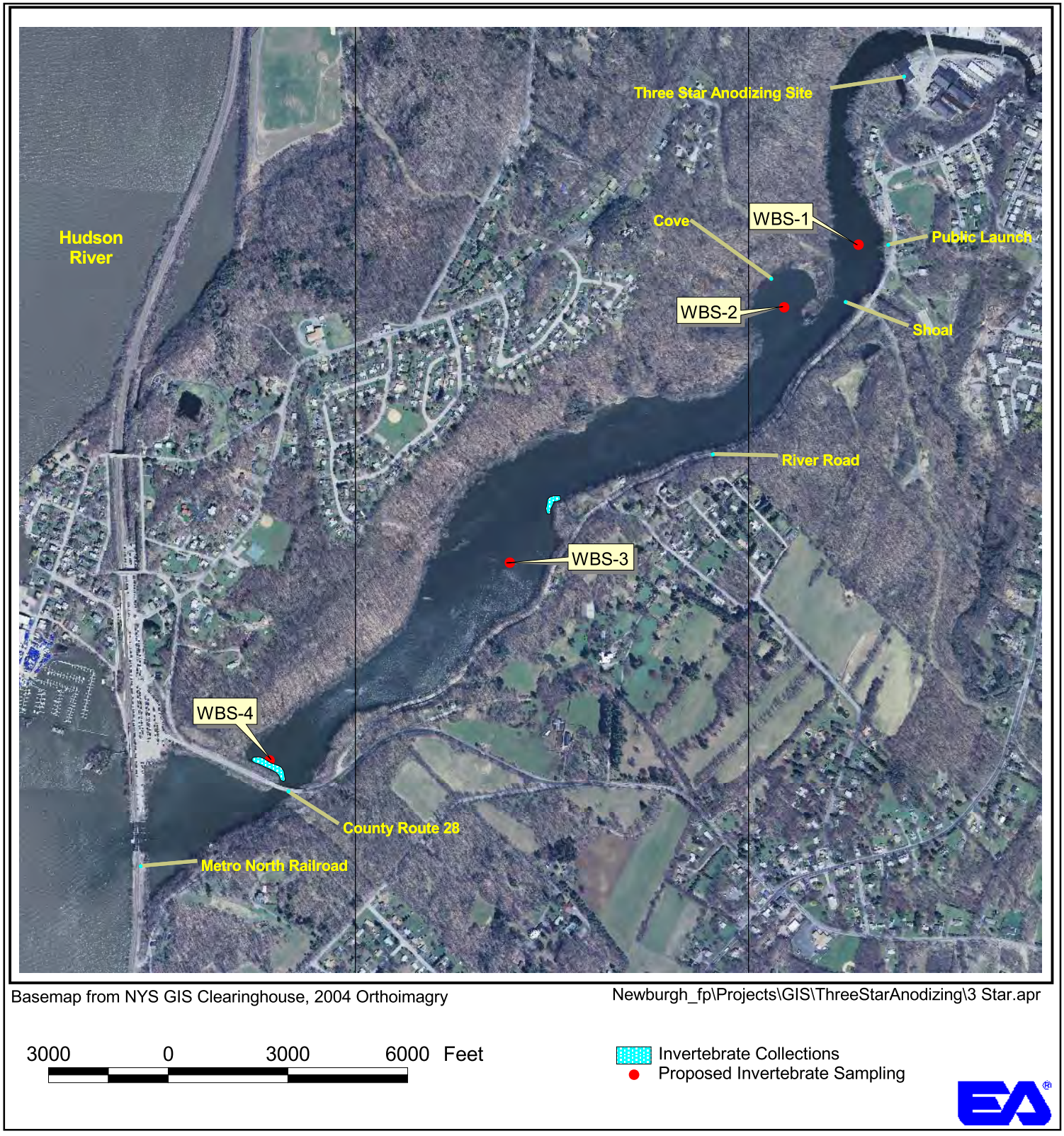


Figure 3. Location of sampling stations and invertebrate collections in Wappinger Creek below Three Star Anodizing site, May 2007.

Figure 4. Summary of Taxon Groups Indicated by Statistical Analysis of Differences in Tissue Metal Concentrations Among Taxon Collected from Wappinger Creek Below the Three Star Anodizing Site, 2007.

| Analyte | t Group | Snail | Mussel | Spottail Shiner | Banded Killifish | Tesselated Darter | Largemouth Bass | Smallmouth Bass |
|---|---|---|---|---|---|---|---|---|
| Percent Solids | A | | | | | | | |
| | B | | | | | | | |
| | C | | | | | | | |
| | | | | | | | | |
| Arsenic | A | | | | | | | |
| | B | | | | | | | |
| | C | | | | | | | |
| | D | | | | | | | |
| | E | | | | | | | |
| | | | | | | | | |
| Cadmium | A | | | | | | | |
| | B | | | | | | | |
| | C | | | | | | | |
| | | | | | | | | |
| Chromium | A | | | | | | | |
| | B | | | | | | | |
| | C | | | | | | | |
| | | | | | | | | |
| Copper | A | | | | | | | |
| | B | | | | | | | |
| | C | | | | | | | |
| | D | | | | | | | |
| | | | | | | | | |
| Mercury | A | | | | | | | |
| | B | | | | | | | |
| | C | | | | | | | |
| | D | | | | | | | |
| | | | | | | | | |
| Nickel | A | | | | | | | |
| | B | | | | | | | |
| | | | | | | | | |
| Lead | A | | | | | | | |
| | B | | | | | | | |
| | C | | | | | | | |
| | D | | | | | | | |
| | | | | | | | | |
| Zinc | A | | | | | | | |
| | B | | | | | | | |
| | C | | | | | | | |

# TABLE 1 SUMMARY OF ANALYTICAL RESULTS FOR METAL CONCENTRATION IN FISH AND INVERTEBRATE TISSUE COLLECTED FROM THE TIDAL REACH OF WAPPINGER CREEK, BELOW THE THREE STAR ANODIZING SITE, MAY-AUGUST 2007

| Location | Taxon | No. of Samples | Statistic | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc | Percent Solids |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FSA-1 | Largemouth bass | 12 | Mean | 0.039 | 0.0094 | 0.23 | 0.25 | 0.024 | 0.1596 | 0.34 | 7.01 | 20.3 |
| | | | Min | 0.025 | 0.0081 | 0.21 | 0.19 | 0.024 | 0.0740 | 0.34 | 5.30 | 19.0 |
| | | | Max | 0.066 | 0.0200 | 0.24 | 0.41 | 0.024 | 0.4100 | 0.34 | 9.20 | 21.3 |
| | | | Std Dev | 0.013 | 0.0034 | 0.01 | 0.06 | 0.000 | 0.0968 | 0.00 | 1.15 | 0.8 |
| FSA-2 | Largemouth bass | 16 | Mean | 0.036 | 0.0095 | 0.21 | 0.24 | 0.024 | 0.2403 | 0.34 | 7.99 | 20.0 |
| | | | Min | 0.018 | 0.0081 | 0.19 | 0.05 | 0.024 | 0.0620 | 0.34 | 5.40 | 18.2 |
| | | | Max | 0.053 | 0.0200 | 0.24 | 0.44 | 0.024 | 0.6000 | 0.34 | 11.00 | 22.0 |
| | | | Std Dev | 0.010 | 0.0039 | 0.01 | 0.08 | 0.000 | 0.1813 | 0.00 | 1.67 | 1.0 |
| FSA-1 | Smallmouth bass | 4 | Mean | 0.141 | 0.0081 | 0.21 | 0.29 | 0.024 | 0.1975 | 0.34 | 6.13 | 20.4 |
| | | | Min | 0.095 | 0.0081 | 0.19 | 0.25 | 0.024 | 0.0900 | 0.34 | 5.60 | 18.7 |
| | | | Max | 0.180 | 0.0081 | 0.22 | 0.36 | 0.024 | 0.3400 | 0.34 | 6.40 | 21.6 |
| | | | Std Dev | 0.040 | 0.0000 | 0.01 | 0.05 | 0.000 | 0.1118 | 0.00 | 0.36 | 1.3 |
| FSA-1 | Spottail shiner | 16 | Mean | 0.097 | 0.0304 | 0.28 | 0.67 | 0.186 | 0.0368 | 0.34 | 35.19 | 24.5 |
| | | | Min | 0.066 | 0.0100 | 0.19 | 0.06 | 0.044 | 0.0230 | 0.34 | 18.00 | 22.1 |
| | | | Max | 0.160 | 0.1100 | 0.62 | 1.40 | 0.700 | 0.0490 | 0.36 | 78.00 | 28.1 |
| | | | Std Dev | 0.028 | 0.0248 | 0.10 | 0.28 | 0.164 | 0.0073 | 0.00 | 16.64 | 1.6 |
| FSA-2 | Spottail shiner | 8 | Mean | 0.101 | 0.0240 | 0.26 | 0.86 | 0.201 | 0.0401 | 0.34 | 32.63 | 24.4 |
| | | | Min | 0.067 | 0.0090 | 0.17 | 0.50 | 0.049 | 0.0160 | 0.34 | 25.00 | 22.8 |
| | | | Max | 0.210 | 0.0620 | 0.45 | 3.10 | 0.480 | 0.0670 | 0.34 | 41.00 | 26.1 |
| | | | Std Dev | 0.048 | 0.0162 | 0.09 | 0.91 | 0.153 | 0.0183 | 0.00 | 6.44 | 1.2 |
| FSA-2 | Banded killifish | 6 | Mean | 0.062 | 0.0198 | 0.21 | 1.01 | 0.076 | 0.0172 | 0.34 | 29.83 | 22.9 |
| | | | Min | 0.052 | 0.0100 | 0.18 | 0.71 | 0.031 | 0.0160 | 0.34 | 26.00 | 20.7 |
| | | | Max | 0.073 | 0.0350 | 0.24 | 1.60 | 0.110 | 0.0190 | 0.34 | 34.00 | 24.1 |
| | | | Std Dev | 0.008 | 0.0105 | 0.02 | 0.32 | 0.031 | 0.0010 | 0.00 | 3.71 | 1.3 |
| FSA-2 | Tessellated darter | 2 | Mean | 0.059 | 0.0081 | 0.18 | 0.57 | 0.079 | 0.0195 | 0.34 | 26.50 | 24.5 |
| | | | Min | 0.048 | 0.0081 | 0.17 | 0.54 | 0.063 | 0.0170 | 0.34 | 22.00 | 23.9 |
| | | | Max | 0.070 | 0.0081 | 0.19 | 0.59 | 0.094 | 0.0220 | 0.34 | 31.00 | 25.1 |
| | | | Std Dev | 0.016 | 0.0000 | 0.01 | 0.04 | 0.022 | 0.0035 | 0.00 | 6.36 | 0.8 |

| Location | Taxon | No. of Samples | Statistic | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc | Percent Solids |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WBS-3 | Mussel | 6 | Mean | 0.280 | 0.0803 | 0.30 | 3.28 | 0.837 | 0.0080 | 14.23 | 7.30 | 39.1 |
| | | | Min | 0.250 | 0.0640 | 0.16 | 1.40 | 0.220 | 0.0062 | 1.80 | 5.40 | 27.2 |
| | | | Max | 0.360 | 0.0970 | 0.70 | 7.70 | 1.800 | 0.0110 | 39.00 | 12.00 | 59.3 |
| | | | Std Dev | 0.041 | 0.0137 | 0.20 | 2.72 | 0.685 | 0.0018 | 17.43 | 2.51 | 10.9 |
| WBS-4 | Mussel | 1 | Value | 0.270 | 0.0590 | 0.39 | 1.60 | 0.370 | 0.0060 | 20.00 | 5.40 | 43.3 |
| WBS-3 | Snail | 6 | Mean | 0.387 | 0.0735 | 0.36 | 29.00 | 1.007 | 0.0167 | 6.93 | 16.33 | 34.1 |
| | | | Min | 0.330 | 0.0590 | 0.24 | 17.00 | 0.610 | 0.0120 | 1.40 | 12.00 | 30.1 |
| | | | Max | 0.510 | 0.1000 | 0.67 | 56.00 | 1.600 | 0.0230 | 24.00 | 25.00 | 39.7 |
| | | | Std Dev | 0.064 | 0.0147 | 0.16 | 13.68 | 0.434 | 0.0039 | 8.76 | 4.50 | 3.4 |
| WBS-4 | Snail | 1 | Value | 0.340 | 0.0620 | 0.42 | 20.00 | 0.670 | 0.0170 | 58.00 | 15.00 | 46.9 |

TABLE 2 STATISTICAL COMPARISON OF METAL CONCENTRATION IN TISSUE OF FISH AND INVERTEBRATES BETWEEN SAMPLING LOCATIONS IN WAPPINGER CREEK BELOW THE THREE STAR ANODIZING SITE, 2007

| Taxon | Chemical | Location | Median | t Grouping |
|---|---|---|---|---|
| Largemouth bass | Percent Solids | FSA-1 | 20.5 | A |
| | | FSA-2 | 20 | A |
| | Arsenic | FSA-1 | 0.038 | A |
| | | FSA-2 | 0.032 | A |
| | Cadmium | FSA-1 | <DL | A |
| | | FSA-2 | <DL | A |
| | Chromium | FSA-1 | 0.23 | A |
| | | FSA-2 | 0.21 | B |
| | Copper | FSA-2 | 0.24 | A |
| | | FSA-1 | 0.23 | A |
| | Mercury | FSA-2 | 0.15 | A |
| | | FSA-1 | 0.12 | A |
| | Nickel | FSA-1 | <DL | A |
| | | FSA-2 | <DL | A |
| | Lead | FSA-1 | <DL | A |
| | | FSA-2 | <DL | A |
| | Zinc | FSA-2 | 7.7 | A |
| | | FSA-1 | 6.9 | A |
| Mussel | Percent Solids | WBS-4 | 43.3 | A |
| | | WBS-3 | 35.85 | A |
| | Arsenic | WBS-4 | 0.27 | A |
| | | WBS-3 | 0.26 | A |
| | Cadmium | WBS-3 | 0.0775 | A |
| | | WBS-4 | 0.059 | A |
| | Chromium | WBS-4 | 0.39 | A |
| | | WBS-3 | 0.225 | A |
| | Copper | WBS-3 | 1.7 | A |
| | | WBS-4 | 1.6 | A |
| | Mercury | WBS-3 | 0.00765 | A |
| | | WBS-4 | 0.006 | A |
| | Nickel | WBS-4 | 20 | A |
| | | WBS-3 | 4.35 | A |
| | Lead | WBS-3 | 0.73 | A |
| | | WBS-4 | 0.37 | A |
| | Zinc | WBS-3 | 6.5 | A |
| | | WBS-4 | 5.4 | A |

| Taxon | Chemical | Location | Median | t Grouping |
|---|---|---|---|---|
| Snail | Percent Solids | WBS-4 | 46.9 | A |
| | | WBS-3 | 33.4 | A |
| | Arsenic | WBS-3 | 0.37 | A |
| | | WBS-4 | 0.34 | A |
| | Cadmium | WBS-3 | 0.0725 | A |
| | | WBS-4 | 0.062 | A |
| | Chromium | WBS-4 | 0.42 | A |
| | | WBS-3 | 0.31 | A |
| | Copper | WBS-3 | 25 | A |
| | | WBS-4 | 20 | A |
| | Mercury | WBS-3 | 0.017 | A |
| | | WBS-4 | 0.017 | A |
| | Nickel | WBS-4 | 58 | A |
| | | WBS-3 | 3.45 | A |
| | Lead | WBS-3 | 0.845 | A |
| | | WBS-4 | 0.67 | A |
| | Zinc | WBS-3 | 15.5 | A |
| | | WBS-4 | 15 | A |
| Spottail shiner | Percent Solids | FSA-2 | 24.8 | A |
| | | FSA-1 | 24.25 | A |
| | Arsenic | FSA-1 | 0.084 | A |
| | | FSA-2 | 0.079 | A |
| | Cadmium | FSA-1 | 0.021 | A |
| | | FSA-2 | 0.02 | A |
| | Chromium | FSA-1 | 0.265 | A |
| | | FSA-2 | 0.23 | A |
| | Copper | FSA-1 | 0.635 | A |
| | | FSA-2 | 0.525 | A |
| | Mercury | FSA-2 | 0.04 | A |
| | | FSA-1 | 0.0355 | A |
| | Nickel | FSA-2 | <DL | A |
| | | FSA-1 | <DL | A |
| | Lead | FSA-2 | 0.145 | A |
| | | FSA-1 | 0.135 | A |
| | Zinc | FSA-2 | 32.5 | A |
| | | FSA-1 | 31.5 | A |

TABLE 3 STATISTICAL COMPARISON OF METAL CONCENTRATION IN TISSUE OF FISH AND INVERTEBRATES AMONG TAXA COLLECTED FROM WAPPINGER CREEK BELOW THE THREE STAR ANODIZING SITE, 2007

| Chemical | Taxon | Median | t Grouping |
|---|---|---|---|
| Percent Solids | Mussel | 36.3 | A |
| | Snail | 34.6 | A |
| | Spottail shiner | 24.6 | B |
| | Tessellated darter | 24.5 | B |
| | Banded killifish | 23.35 | B |
| | Smallmouth bass | 20.7 | C |
| | Largemouth bass | 20 | C |
| Arsenic | Snail | 0.36 | A |
| | Mussel | 0.26 | B |
| | Smallmouth bass | 0.145 | C |
| | Spottail shiner | 0.0825 | C |
| | Banded killifish | 0.0615 | D |
| | Tessellated darter | 0.059 | D |
| | Largemouth bass | 0.0345 | E |
| Cadmium | Mussel | 0.074 | A |
| | Snail | 0.071 | A |
| | Spottail shiner | 0.02 | B |
| | Banded killifish | 0.0155 | B |
| | Smallmouth bass | <DL | C |
| | Tessellated darter | <DL | C |
| | Largemouth bass | <DL | C |
| Chromium | Snail | 0.32 | A |
| | Spottail shiner | 0.255 | A B |
| | Mussel | 0.25 | B |
| | Largemouth bass | 0.22 | B |
| | Banded killifish | 0.215 | B |
| | Smallmouth bass | 0.215 | B |
| | Tessellated darter | 0.18 | C |
| Copper | Snail | 24 | A |
| | Mussel | 1.6 | B |
| | Banded killifish | 0.905 | B C |
| | Spottail shiner | 0.575 | C |
| | Tessellated darter | 0.565 | C |
| | Smallmouth bass | 0.28 | D |
| | Largemouth bass | 0.23 | D |

| Chemical | Taxon | Median | t Grouping |
|---|---|---|---|
| Mercury | Smallmouth bass | 0.18 | A |
| | Largemouth bass | 0.145 | A |
| | Spottail shiner | 0.0355 | B |
| | Tessellated darter | 0.0195 | C |
| | Snail | 0.017 | C |
| | Banded killifish | 0.017 | C |
| | Mussel | 0.0073 | D |
| Nickel | Mussel | 6.8 | A |
| | Snail | 5.4 | A |
| | Smallmouth bass | <DL | B |
| | Tessellated darter | <DL | B |
| | Largemouth bass | <DL | B |
| | Banded killifish | <DL | B |
| | Spottail shiner | <DL | B |
| Lead | Snail | 0.8 | A |
| | Mussel | 0.37 | A |
| | Spottail shiner | 0.135 | B |
| | Tessellated darter | 0.0785 | B C |
| | Banded killifish | 0.071 | C |
| | Smallmouth bass | <DL | D |
| | Largemouth bass | <DL | D |
| Zinc | Spottail shiner | 31.5 | A |
| | Banded killifish | 29.5 | A B |
| | Tessellated darter | 26.5 | A B |
| | Snail | 15 | B |
| | Largemouth bass | 6.9 | C |
| | Smallmouth bass | 6.25 | C |
| | Mussel | 5.8 | C |

# Appendix A

# Completed Field Data Forms

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY  Station: [X] FSA-1  [ ] FSA-2

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): (Print and sign) R. Ballentine  Brian Andersen  DAVID CRANDALL

FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | Whole Body Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA- | Micropterus | 5-1-07 | Electro shock | 368 | 822.2 | |
| 1-LMB-F.01 | salmoides | ~~5-1-07~~ BA | | | | |
| TSAWC-05/07-FSA- | Micropterus | 5-1-07 | Electro shock | 336 | 624.1 | |
| 1-LMB-F-02 | Salmoides | | | | | |
| TSAWC-05/07-FSA- | Micropterus | 5-1-07 | Electro shock | 364 | 747.6 | |
| 1-LMB-F-03 | Salmoides | | | | | |
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electro shock | 465 | 1819.1 | ~~sore~~ sore on lower mandible |
| 1-LMB-F-04 | salmoides | | | | | |
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electro shock | 390 | 893.4 | sore on lower mandible |
| 1-LMB-F-05 | salmoides | | | | | |

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY  Station: [X] FSA-1  [ ] FSA-2

Collection Methods: (Electrofishing), Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | Whole Body Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA | micropterus | 5-1-07 | Electroshock | 410 | 1018.4 | PRIMR / DUP |
| 1-LMB-F06 | salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-1-07 | Electroshock | 341 | 657.8 | |
| 1-LMB-F07 | salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-1-07 | Electroshock | 289 | 331.4 | |
| 1-LMB-F08 | salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-1-07 | Electroshock | 284 | 278.5 | |
| 1-LMB-F09 | salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-1-07 | Electroshock | 278 | 293.7 | |
| 1-LMB-F10 | salmoides. | | | | | |

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY  Station: [X] FSA-1  [ ] FSA-2

Collection Methods: (Electrofishing) Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | Whole Body Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electroshock | 269 | 416.2 | |
| 1-LMB ~~-05/07~~ DC F11 | salmoides | | | | | |
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electroshock | 260 | 216.9 | NOT SENT FOR ANAL. |
| 1-LMB-F12 | salmoides | | | | | |
| ~~TSAWC-05/07-FSA~~ | ~~Micropterus~~ | ~~5-1-07~~ | ~~Electroshock~~ | ~~370~~ 489 | ~~2125.0~~ | ~~MS/MSD~~ VOID |
| ~~1-LMB-F13~~ | ~~salmoides~~ | | | | | |
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electroshock | 407 | 970.2 | |
| 1-SMB-F01 | dolomieu | | | | | |
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electroshock | 406 | 998.7 | |
| 1-SMB-F02 | dolomieu | | | | | |

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

**Project Number:** 14368.10

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SITE LOCATION

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY **Station:** [X] FSA-1 [ ] FSA-2

**Collection Methods:** (Electrofishing), Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

**Collector(s) Name(s):** _____
(Print and sign)

_____

---

FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | Whole Body Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electroshock | 402 | 1002.8 | |
| 1-SMB-F03 | dolomieu | | | | | |
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electroshock. | 344 | 424.4 | ulceration/Lesion |
| 1-SMB-F04 | dolomieu | | | | | Lower Body |
| ~~TSAWC-05/07-FSA~~ | | | | | | |
| ~~1-SMB-F05~~ | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY  Station: [ ] FSA-1  [X] FSA-2

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): (Print and sign)

FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | Whole Body Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electroshock | 440 | 1597.2 | |
| 2-LMB-06 | salmoides | | | | | |
| TSAWC-05/07 | Micropterus | 5-1-07 | Electroshock. | 419 | 1047.8 | ulcer lower jaw' |
| 2-LMB-01 | salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-1-07 | Electroshock. | 412 | 1094.7 | |
| 2-LMB-02 | salmoides | | | | | |
| TSA WC-05/07-FSA | micropterus | 5-1-07 | Electroshock. | 447 | 1577.5 | |
| 2-LMB-03 | salmoides | | | | | |
| TSA WC-05/07-FSA | micropterus | 5-1-07 | Electroshock | 350 | 612.3 | |
| 2-LMB-04 | salmoides. | | | | | |

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY  Station: [ ] FSA-1  [X] FSA-2

Collection Methods: (Electrofishing), Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): (Print and sign)

FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | Whole Body Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electroshock | 296. | 378.3 | |
| 2-LMB-05 | salmoides | | | | | |
| TSAWC-05/07-FSA | Micropterus | 5-1-07 | Electroshock | 375. | 792.6 | |
| 2-LMB-07 | salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-1-07 | Electroshock | 391 | 909.9 | |
| 2-LMB-08 | salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-1-07 | Electroshock | 498 | >2000 | PRIME/DUP |
| 2-LMB-09 | salmoides | | | | (2125) | |
| TSAWC-05/07-FSA | micropterus | 5-2-07 | Electroshock | 335 | 558.4 | |
| 2-LMB-10 | salmoides | | | | | |

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY  Station: [ ] FSA-1  [X] FSA-2

Collection Methods: (Electrofishing) Bottom Trawl, (Gill net) Beach Seine, Rod and Reel, Other (specify)

Collector(s) Name(s): Brian Andersen
(Print and sign) Brian Andersen

FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | Whole Body Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA | micropterus | 5-2-07 | Electroshock. | 318 | 501.2 | |
| 2-LMB-11 | Salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-2-07 | Electroshock. | 324 | 489.9 | |
| 2-LMB-12 | salmoides. | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-2-07 | Electroshock | 407 | 1218.5 | small wound-Left Jaw |
| 2-LMB-13 | salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | 5-2-07 | Electroshock. | 435 | 1343.7 | |
| 2-LMB-14 | salmoides | | | | | |
| TSAWC-05/07-FSA | micropterus | ~~5-2-07~~ | ~~Electroshock~~ | 509 | 2600.0 | MS/MSD |
| 2-LMB-15 | Salmoides | 5-3-07 | Gill Net (DC) | | | |

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): Brian Andersen Rob Ballantine David Crandall
(Print and sign) Brian Andersen — —

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:

Composite Sample # TSAWC-05167-FSA-1-SS-W-01 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 108 | 11.6 | 016 | | | 031 | | |
| 002 | 115 | 14.2 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

Notes (eg. morphological abnormalities):
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [X] Spottail Shiner [ ] Odonates [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA-1-SS-W-02 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 100 | 9.2 | 016 | | | 031 | | |
| 002 | 107 | 12.7 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

Notes (eg. morphological abnormalities):_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering** (see FSP Section 5.4.1 for details)
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-1-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Spottail Shiner [ ] Odonates [ ] Other:_____

Composite Sample # FSAWC-05107-FSA-1-35-W-03. Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 106 | 11.1 | 016 | | | 031 | | |
| 002 | 104 | 10.3 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

Notes (eg. morphological abnormalities):_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-01-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA 1-SS-W-04 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 103 | 11.2 | 016 | | | 031 | | |
| 002 | 115 | 15.1 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB Odonates OD
Smallmouth bass SMB
Spottail shiner SS

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

**Collector(s) Name(s):** (Print and sign)

**FINFISH/SHELLFISH COLLECTED**

MS1MSD

**Species Name:** [ ] Largemouth bass [X] Spottail Shiner [ ] Odonates [ ] Other:

Composite Sample # TSAWC-05/07-FSA 1-SS-W-05 Number of Individuals: 6

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 102 | 9.5 | 016 | | | 031 | | |
| 002 | 104 | 10.9 | 017 | | | 032 | | |
| 003 | 105 | 10.9 | 018 | | | 033 | | |
| 004 | 103 | 9.5 | 019 | | | 034 | | |
| 005 | 107 | 12.4 | 020 | | | 035 | | |
| 006 | 96 | 8.0 | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [X] Spottail Shiner [ ] Odonates [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA 1-SS-W-06 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 98 | 8.8 | 016 | | | 031 | | |
| 002 | 106 | 11.3 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [X] Spottail Shiner [ ] Odonates [ ] Other:_____

Composite Sample # TSAWC-05/07 - FSA 1-SS-W-07- Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 102 | 9.8 | 016 | | | 031 | | |
| 002 | 110 | 11.2 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

**Collector(s) Name(s):** (Print and sign) _____

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [X] Spottail Shiner [ ] Odonates [ ] Other:_____

Composite Sample # TSAWL-05/07-FSA 1-SS-W-08 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 105 | 9.6 | 016 | | | 031 | | |
| 002 | 107 | 10.3 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

_____

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAW C-05/07-FSA 1-SS-W-09 Number of Individuals: 3

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 99 | 7.9 | 016 | | | 031 | | |
| 002 | 107 | 11.2 | 017 | | | 032 | | |
| 003 | 102 | 9.8 | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):**
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:

Composite Sample # TSAWC-05/07-FSA 1-SS-W-0010DC Number of Individuals: 3

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 95 | 5.3 | 016 | | | 031 | | |
| 002 | 110 | 11.0 | 017 | | | 032 | | |
| 003 | 94 | 7.1 | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

_____

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA Number of Individuals: 2
1-SS-W-~~01~~11DC

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 110 | 12.2 | 016 | | | 031 | | |
| 002 | 105 | 9.4 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB Odonates OD
Smallmouth bass SMB
Spottail shiner SS

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):**
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:

Composite Sample # TSAWC-05/07-FSA 1-SS-#12.DC Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 105 | 10.2 | 016 | | | 031 | | |
| 002 | 99 | 9.0 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [X] Spottail Shiner [ ] Odonates [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA 1-55-13 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 102 | 8.8 | 016 | | | 031 | | |
| 002 | 99 | 8.4 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

_____

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA-R-SS-14 Number of Individuals: 3

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 103 | 9.9 | 016 | | | 031 | | |
| 002 | 104 | 8.6 | 017 | | | 032 | | |
| 003 | 101 | 9.2 | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-1-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [X] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign) _____

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA 1 - SS-15.1 DUP Number of Individuals: 4

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 112 | 14.7 | 016 | | | 031 | | |
| 002 | 106 | 11.8 | 017 | | | 032 | | |
| 003 | 105 | 10.3 | 018 | | | 033 | | |
| 004 | 100 | 9.2 | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-1-07.

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [X] Spottail Shiner [ ] Odonates [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA-2-SS-01 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 100 | 10.3 | 016 | | | 031 | | |
| 002 | 82 | 5.2 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

Notes (eg. morphological abnormalities):_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-2-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [X] Spottail Shiner [ ] Odonates [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA-2-SS-02 Duplicate Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 114 | 14.6 | 016 | | | 031 | | |
| 002 | 112 | 11.5 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Electrofishing [ ] Beach Seine [ ] Minnow trap [ ] Hand Collected [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [X] Spottail Shiner [ ] Odonates [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA-2-SS-03 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 99 | 8.9 | 016 | | | 031 | | |
| 002 | 107 | 12.9 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

Notes (eg. morphological abnormalities):_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

Project Number: 14368.10 Sampling Date and Time: 5-2-07

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

Collection Method: [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

Collector(s) Name(s): _____
(Print and sign)

FINFISH/SHELLFISH COLLECTED

Species Name: [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA 2-SS-04 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 109 | 13.2 | 016 | | | 031 | | |
| 002 | 109 | 11.6 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

Notes (eg. morphological abnormalities):_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-2-01

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):**
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:

Composite Sample # TSAWC-05/07-FSA 2-55-05 Number of Individuals: 2

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 107 | 12.7 | 016 | | | 031 | | |
| 002 | 105 | 11.0 | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB Odonates OD
Smallmouth bass SMB
Spottail shiner SS

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-2-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
~~[X] Electrofishing~~ DC [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):**
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:

Composite Sample # TSPWC-05/07-FSA 2-55-06 Number of Individuals: 3

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 81 | 5.1 | 016 | | | 031 | | |
| 002 | 76 | 3.7 | 017 | | | 032 | | |
| 003 | 87 | 5.8 | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB Odonates OD
Smallmouth bass SMB
Spottail shiner SS

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-3-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [ ] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [ ] Beach Seine [ ] Hand Collected
[X] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[X] Spottail Shiner [ ] Other:_____

Composite Sample # TSAWC-05/07-FSA-2-SS-08 Number of Individuals: 1

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 105 | 11.1 | 016 | | | 031 | | |
| 002 | | | 017 | | | 032 | | |
| 003 | | | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**_____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB Odonates OD
Smallmouth bass SMB
Spottail shiner SS

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-2-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):**
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: BANDED KILLIFISH

Composite Sample #TSAWC-05/07-FSA-2=BKF=01 Number of Individuals:

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 43 | 0.8 | 016 | | | 031 | | |
| 002 | 45 | 0.4 | 017 | | | 032 | | |
| 003 | 35 | 0.4 | 018 | | | 033 | | |
| 004 | 51 | 1.3 | 019 | | | 034 | | |
| 005 | 46 | 1.1 | 020 | | | 035 | | |
| 006 | 45 | 0.3 | 021 | | | 036 | | |
| 007 | 45 | 0.9 | 022 | | | 037 | | |
| 008 | 47 | 1.3 | 023 | | | 038 | | |
| 009 | 48 | 1.1 | 024 | | | 039 | | |
| 010 | 49 | 1.1 | 025 | | | 040 | | |
| 011 | 47 | 1.0 | 026 | | | 041 | | |
| 012 | 40 | 0.7 | 027 | | | 042 | | |
| 013 | 35 | 0.5 | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB Odonates OD
Smallmouth bass SMB
Spottail shiner SS

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-2-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: BANDED Killifish

Composite Sample # TSAW2-05/07-FSA 2-BKF-02 Number of Individuals: 3

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 84 | 5.3 | 016 | | | 031 | | |
| 002 | 57 | 2.0 | 017 | | | 032 | | |
| 003 | 64 | 2.1 | 018 | | | 033 | | |
| 004 | | | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):** _____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-3-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Banded killifish (Fundulus diaphanus)

Composite Sample # TSAWC-05/07-FSA-2-BKF-03 / MS/MSD Number of Individuals: 26

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 41 | 1.0 | 016 | 62 | 2.2 | 031 | | |
| 002 | 57 | 1.8 | 017 | 48 | 1.3 | 032 | | |
| 003 | 58 | 1.4 | 018 | 54 | 1.6 | 033 | | |
| 004 | 58 | 1.4 | 019 | 47 | 1.0 | 034 | | |
| 005 | 55 | 1.2 | 020 | 48 | 1.1 | 035 | | |
| 006 | 64 | 2.4 | 021 | 53 | 1.3 | 036 | | |
| 007 | 50 | 1.1 | 022 | 42 | 0.7 | 037 | | |
| 008 | 61 | 2.1 | 023 | 40 | 0.7 | 038 | | |
| 009 | 52 | 1.2 | 024 | 41 | 0.6 | 039 | | |
| 010 | 47 | 0.9 | 025 | 38 | 0.3 | 040 | | |
| 011 | 39 | 0.5 | 026 | 37 | 0.3 | 041 | | |
| 012 | 34 | 0.3 | 027 | | | 042 | | |
| 013 | 51 | 1.2 | 028 | | | 043 | | |
| 014 | 56 | 1.6 | 029 | | | 044 | | |
| 015 | 55 | 1.7 | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):** _____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB Odonates OD
Smallmouth bass SMB
Spottail shiner SS

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-3-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):** _____
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Banded Killifish

Composite Sample # TSAWC-05/07-FSA-2-BKF-04 Number of Individuals: 6

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 57 | 1.5 | 016 | | | 031 | | |
| 002 | 56 | 1.3 | 017 | | | 032 | | |
| 003 | 57 | 1.7 | 018 | | | 033 | | |
| 004 | 51 | 1.3 | 019 | | | 034 | | |
| 005 | 63 | 2.3 | 020 | | | 035 | | |
| 006 | 63 | 2.0 | 021 | | | 036 | | |
| 007 | L | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):** _____
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-3-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):**
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Banded Killifish

Composite Sample # TSAWC-05/07-FSA-2-BKF-05 / ~~DUP~~ Number of Individuals: 24

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 45 | 0.8 | 016 | 44 | 0.8 | 031 | | |
| 002 | 50 | 1.3 | 017 | 37 | 0.3 | 032 | | |
| 003 | 49 | 0.9 | 018 | 45 | 0.8 | 033 | | |
| 004 | 40 | 0.8 | 019 | 43 | 0.6 | 034 | | |
| 005 | 64 | 2.0 | 020 | 38 | 0.5 | 035 | | |
| 006 | 48 | 0.8 | 021 | 42 | 0.6 | 036 | | |
| 007 | 50 | 1.0 | 022 | 41 | 0.5 | 037 | | |
| 008 | 42 | 0.7 | 023 | 30 | 0.3 | 038 | | |
| 009 | 39 | 0.8 | 024 | 34 | 0.3 | 039 | | |
| 010 | 52 | 0.9 | 025 | | | 040 | | |
| 011 | 43 | 0.6 | 026 | | | 041 | | |
| 012 | 49 | 1.1 | 027 | | | 042 | | |
| 013 | 55 | 1.3 | 028 | | | 043 | | |
| 014 | 47 | 0.9 | 029 | | | 044 | | |
| 015 | 41 | 0.6 | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-3-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):**
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Banded Killifish

Composite Sample # TSAWC-05/07-FSA 2-BKF-06 Number of Individuals:

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 33 | 0.2 | 016 | 31 | 0.2 | 031 | | |
| 002 | 44 | 0.9 | 017 | 30 | 0.3 | 032 | | |
| 003 | 42 | 0.6 | 018 | | | 033 | | |
| 004 | 46 | 0.5 | 019 | | | 034 | | |
| 005 | 62 | 2.1 | 020 | | | 035 | | |
| 006 | 46 | 1.0 | 021 | | | 036 | | |
| 007 | 35 | 0.3 | 022 | | | 037 | | |
| 008 | 45 | 0.8 | 023 | | | 038 | | |
| 009 | 44 | 0.6 | 024 | | | 039 | | |
| 010 | 42 | 0.9 | 025 | | | 040 | | |
| 011 | 34 | 0.7 | 026 | | | 041 | | |
| 012 | 40 | 0.6 | 027 | | | 042 | | |
| 013 | 48 | 0.9 | 028 | | | 043 | | |
| 014 | 36 | 0.5 | 029 | | | 044 | | |
| 015 | 37 | 0.4 | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-2-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [X] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [X] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):**
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [X] Other: Tessalina Darter (Etheostoma olmstedi)

Composite Sample # TSAWC-05/07-FSA-2-TD-01 Number of Individuals: 4

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 60 | 3.0 | 016 | | | 031 | | |
| 002 | 54 | 2.4 | 017 | | | 032 | | |
| 003 | 60 | 1.7 | 018 | | | 033 | | |
| 004 | 63 | 2.6 | 019 | | | 034 | | |
| 005 | | | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish/Invertebrate Composite Collection

**Project Number:** 14368.10 **Sampling Date and Time:** 5-2-07

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY

**Station:** [ ] FSA-1 [x] FSA-2 [ ] WBS-1 [ ] WBS-2 [ ] WBS-3 [ ] WBS-4

**Collection Method:** [ ] Bottom Trawl [x] Beach Seine [ ] Hand Collected
[ ] Electrofishing [ ] Minnow trap [ ] Gill net:

**Collector(s) Name(s):**
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

**Species Name:** [ ] Largemouth bass [ ] Odonates
[ ] Spottail Shiner [x] Other: Tessellated Darter

Composite Sample # TSAWC-05/07-FSA-2-TD-02 Number of Individuals: 5

| Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) | Individual Sample No. | Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|---|
| 001 | 51 | 1.1 | 016 | | | 031 | | |
| 002 | 60 | 2.0 | 017 | | | 032 | | |
| 003 | 64 | 1.4 | 018 | | | 033 | | |
| 004 | 57 | 1.1 | 019 | | | 034 | | |
| 005 | 58 | 1.8 | 020 | | | 035 | | |
| 006 | | | 021 | | | 036 | | |
| 007 | | | 022 | | | 037 | | |
| 008 | | | 023 | | | 038 | | |
| 009 | | | 024 | | | 039 | | |
| 010 | | | 025 | | | 040 | | |
| 011 | | | 026 | | | 041 | | |
| 012 | | | 027 | | | 042 | | |
| 013 | | | 028 | | | 043 | | |
| 014 | | | 029 | | | 044 | | |
| 015 | | | 030 | | | 045 | | |

**Notes (eg. morphological abnormalities):**
(use reverse side for more room)

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB Odonates OD
Smallmouth bass SMB
Spottail shiner SS

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

## SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] ~~FSA-1~~ WBS-3 [ ] ~~FSA-2~~ WBS-4

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) HAND

Collector(s) Name(s): (Print and sign) Paul Muessig, Brian Andersen
Brian Anderson

## FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | ~~Length~~ (mm) | ~~Whole Body~~ Composit Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-06/07-WBS3-MUS-01 | Zebra mussels | 6/21/07 | HAND | NA | 5.26 | 35 mussel < 1/2" |
| TSAWC-06/07-WBS3-MUS-02 | Zebra mussels | 6/21/07 | HAND | NA | ~~5.0~~ 4.98 PHM | 32 mussels < 1/2" |
| TSAWC-06/07-WBS3-MUS-03 | Zebra mussels | 6/21/07 | HAND | NA | 5.33 | 38 mussels < 1/2 |
| TSAWC-06/07-WBS3-SNL-01 | Snail | 6/21/07 | HAND | NA | 5.08 | 57 snails < 1/4" |
| TSAWC-06/07-WBS3-SNL-02 | Snail | 6/21/07 | HAND | NA | 5.29 | 62 snails < 1/4" |

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [X] ~~FSA-1~~ WBS3 [ ] ~~FSA-2~~ WBS-4

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) HAND

Collector(s) Name(s): (Print and sign) Paul Muessig, Brian Andersen, Brian Anderson

FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | ~~Whole Body~~ Mass (g) Composite | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-06/07-WBS3-SUL-03 | Snail | 6/21/07 | HAND | NA | 5.65 | 59 snails <1/4" |
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**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

## SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY

Station: [ ] ~~FSA-1~~ WBS-~~1~~ [X] ~~FSA-2~~ WBS-4

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) — HAND

Collector(s) Name(s): (Print and sign) Paul Muessig, Brian Anderson
Brian Anderson

## FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | ~~Whole Body~~ Mass (g) Composite | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-06/07-WBS4-MUS-01 | Zebra Mussels | 6/21/07 | HAND | NA | 5.10 | 31 mussels < 1/2" |
| | | | | | | |
| | | | | | | |
| TSAWC-06/07-WBS4-SNL-01 | Snail | 6/21/07 | HAND | NA | 5.09 | 57 snails < 1/4" |
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**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**

Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

**Project Number:** 14368.10

**SITE LOCATION**

**Site Name:** Tidal reach of Wappinger Creek, Wappingers Falls, NY **Station:** ~~[ ] FSA-1 [ ] FSA-2~~ WBS-3

**Collection Methods:** Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) HAND / DIPNET

**Collector(s) Name(s):** PAUL H. MUESSIG
(Print and sign)

**FINFISH/SHELLFISH COLLECTED**

| Sample No | Species | Sample Date | Collection Method | Length (mm) | Whole Body Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSAWC-08/07-WB3 | | | | | | |
| SNL-04 | SNAIL | 8/29/07 | HAND | — | 5.13 | 58 snails < 1/4" |
| TSAWC-08/07-WB3 | | | | | | |
| SNL-05 | SNAIL | 8/29/07 | HAND | — | 5.17 | 55 snails < 1/4" |
| TSAWC-08/07-WB3 | | | | | | |
| SNL-06 | SNAIL | 8/29/07 | HAND | — | 6.62 | 65 snails < 1/4" |
| TSAWC-08/07-WB3 | | | | | | |
| ~~8~~ MUS-04 | ZEBRA MUSSEL | 8/29/07 | HAND | — | 5.14 | 34 mussels < ~~1~~ 3/8" |
| TSAWC-08/07-WB3 | | | | | | |
| MUS-05 | ZEBRA MUSSEL | 8/29/07 | HAND | — | 5.00 | 37 mussels < 3/8" |
| | | | | | | |

**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Field Sheet for Finfish Fillet Collection

Project Number: 14368.10

SITE LOCATION

Site Name: Tidal reach of Wappinger Creek, Wappingers Falls, NY  Station: [ ] ~~FSA-1~~ [ ] ~~FSA-2~~ WSB -3

Collection Methods: Electrofishing, Bottom Trawl, Gill net, Beach Seine, Rod and Reel, Other (specify) HAND

Collector(s) Name(s): PAUL H. MUESSIG
(Print and sign)

FINFISH/SHELLFISH COLLECTED

| Sample No | Species | Sample Date | Collection Method | Length (mm) | Whole Body Mass (g) | Remarks (e.g. morphological abnormalities, use reverse side for more room) |
|---|---|---|---|---|---|---|
| TSDWC-08/07-WR3 | | | | | | |
| MUS-06 | ZEBRA MUSSEL | 8/29/07 | HAND | ✓ | 4.23 | 32 MUSSELS < 3/8" |
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**Recommendations for Sample Abbreviation and Numbering (see FSP Section 5.4.1 for details)**
Largemouth bass LMB
Smallmouth bass SMB
Spottail shiner SS
Odonates OD

# Appendix B

# Chain-of-Custody Forms

Pace Analytical®
www.pacelabs.com

**UPPER MIDWEST REGION**
MN: 612-607-1700 WI: 920-469-2436

COC No. 017004

# CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)

| | |
|---|---|
| Company Name: | EA ENGINEERING |
| Branch/Location: | NEWBURGH |
| Project Contact: | Paul Muessig |
| Phone: | 845-565-8100 x 1006 |
| Project Number: | 14368.10 |
| Project Name: | Three Star Analizing |
| Project State: | New York |
| Sampled By (Print): | Brian Andersen |
| Sampled By (Sign): | Brian Andersen |
| PO #: | |
| Regulatory Program: | |

FILTERED? (YES/NO) Y/N: N
PRESERVATION (CODE)* Pick Letter: A

Analyses Requested: As, Cd, Cr, Cu, Pb, Hg, Ni, ZN

| | |
|---|---|
| Quote #: | |
| Mail To Contact: | |
| Mail To Company: | |
| Mail To Address: | |
| Invoice To Contact: | |
| Invoice To Company: | |
| Invoice To Address: | |
| Invoice To Phone: | |

**Data Package Options** (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

**MS/MSD**
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

**Matrix Codes**
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

| PACE LAB # | CLIENT FIELD ID | COLLECTION DATE | COLLECTION TIME | MATRIX | Analyses Requested | As, Cd, Cr, Cu, Pb, Hg, Ni, ZN | CLIENT COMMENTS | LAB COMMENTS (Lab Use Only) | Profile # |
|---|---|---|---|---|---|---|---|---|---|
| | TSAWC-05/07-FSA-1-LMB-F-01 | 5/1/07 | | B | | X | Use Right filet for all primary samples | | |
| | TSAWC-05/07-FSA-1-LMB-F-02 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-LMB-F-03 | 5/1/07 | | B | | X | ~~MS/MSD~~ BA | | |
| | TSAWC-05/07-FSA-1-LMB-F-04 | 5/1/07 | | B | | X | MS/MSD - use left filet | | |
| | TSAWC-05/07-FSA-1-LMB-F-05 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-LMB-F-06 | 5/1/07 | | B | | X | Duplicate - use left filet | | |
| | TSAWC-05/07-FSA-1-LMB-F-07 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-LMB-F-08 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-LMB-F-09 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-LMB-F-10 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-LMB-F-11 | 5/1/07 | | B | | X | | | |
| | ~~TSAWC-05/07-FSA-1-LMB-F-12~~ | ~~5/1/07~~ | | ~~B~~ | | No Sample Bt | | | |
| | ~~TSAWC-05/07-FSA-1-LMB-F-~~ | ~~5/1/07~~ | | ~~B~~ | | No sample Bt | | | |

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

| | |
|---|---|
| Email #1: | |
| Email #2: | |
| Telephone: | |
| Fax: | |

Samples on HOLD are subject to special pricing and release of liability

| Relinquished By: | Date/Time: | Received By: | Date/Time: |
|---|---|---|---|
| [signature] | 5/7/07 1340 | | |
| | | | |
| | | | |
| | | | |
| | | | |

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

**UPPER MIDWEST REGION**
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

# CHAIN OF CUSTODY

COC No. 017005

| (Please Print Clearly) | |
|---|---|
| Company Name: | EA Engineering |
| Branch/Location: | Newburgh |
| Project Contact: | Paul Mueller |
| Phone: | 845-565-5105 x 1006 |
| Project Number: | 14368.18 |
| Project Name: | Three Star Anodizing |
| Project State: | New York |
| Sampled By (Print): | Brian Andersen |
| Sampled By (Sign): | Brian Andersen |
| PO #: | |
| Regulatory Program: | |

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

| | |
|---|---|
| Quote #: | |
| Mail To Contact: | |
| Mail To Company: | |
| Mail To Address: | |
| Invoice To Contact: | |
| Invoice To Company: | |
| Invoice To Address: | |
| Invoice To Phone: | |

**Data Package Options** (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

**MS/MSD**
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

**Matrix Codes**
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

FILTERED? (YES/NO): Y/N
PRESERVATION (CODE)*: Pick Letter

Analyses Requested: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn

| PACE LAB # | CLIENT FIELD ID | COLLECTION DATE | COLLECTION TIME | MATRIX | Y/N | Pick Letter | CLIENT COMMENTS | LAB COMMENTS (Lab Use Only) | Profile # |
|---|---|---|---|---|---|---|---|---|---|
| | TSAWC-05/07-FSA-1-SMB-F-01 | 5/1/07 | | B | | A | Use Highest for mid-strength sample | | |
| | TSAWC-05/07-FSA-1-SMB-F-02 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-1-SMB-F-03 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-1-SMB-F-04 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-2-LMB-F-01 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-2-LMB-F-02 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-2-LMB-F-03 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-2-LMB-F-04 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-2-LMB-F-05 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-2-LMB-F-06 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-2-LMB-F-07 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-2-LMB-F-08 | 5/1/07 | | B | | A | | | |
| | TSAWC-05/07-FSA-2-LMB-F-09 | 5/1/07 | | B | | A | Duplicate - use Left Filter | | |

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

| | |
|---|---|
| Email #1: | |
| Email #2: | |
| Telephone: | |
| Fax: | |

Samples on HOLD are subject to special pricing and release of liability

| Relinquished By: | Date/Time: | Received By: | Date/Time: |
|---|---|---|---|
| [signature] | 5/7/07 1340 | | |
| | | | |
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| | | | |

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present
Intact / Not Intact

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

COC No. 017006

# CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)

| | |
|---|---|
| Company Name: | EA Engineering |
| Branch/Location: | Newburgh |
| Project Contact: | Paul Muessig |
| Phone: | 845-565-8100 x 1006 |
| Project Number: | 14368.10 |
| Project Name: | Three Star Anodizing |
| Project State: | New York |
| Sampled By (Print): | Brian Andersen |
| Sampled By (Sign): | Brian Andersen |
| PO #: | |
| Regulatory Program: | |

FILTERED? (YES/NO) — Y/N: N
PRESERVATION (CODE)* — Pick Letter: A

Data Package Options (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

MS/MSD
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

| Quote #: | |
|---|---|
| Mail To Contact: | |
| Mail To Company: | |
| Mail To Address: | |
| Invoice To Contact: | |
| Invoice To Company: | |
| Invoice To Address: | |
| Invoice To Phone: | |

| PACE LAB # | CLIENT FIELD ID | COLLECTION DATE | COLLECTION TIME | MATRIX | Analyses Requested | As, Cd, Cr, Cu, Pb, Hg, Ni, Zn | CLIENT COMMENTS | LAB COMMENTS (Lab Use Only) | Profile # |
|---|---|---|---|---|---|---|---|---|---|
| | TSAWC-05/07-FSA-2-LMB-F-10 | 5/2/07 | | B | | X | use right label for grammary sample | | |
| | TSAWC-05/07-FSA-2-LMB-F-11 | 5/2/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-2-LMB-F-12 | 5/2/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-2-LMB-F-12 | 5/2/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-2-LMB-F-13 | 5/2/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-2-LMB-F-14 | 5/2/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-2-LMB-F-15 | 5/3/07 | | B | | X | MS/MSD use left [illegible] | | |
| | TSAWC-05/07-FSA-1-SS-W-01 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-SS-W-02 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-SS-W-03 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-SS-W-04 | 5/1/07 | | B | | X | | | |
| | TSAWC-05/07-FSA-1-SS-W-05 | 5/1/07 | | B | | X | MS/MSD | | |
| | TSAWC-05/07-FSA-1-SS-W-06 | 5/1/07 | | B | | X | | | |

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

| | |
|---|---|
| Email #1: | |
| Email #2: | |
| Telephone: | |
| Fax: | |

Samples on HOLD are subject to special pricing and release of liability

| Relinquished By: | Date/Time: | Received By: | Date/Time: |
|---|---|---|---|
| [signature] | 5/7/07 1340 | | |
| | | | |
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| | | | |

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

**UPPER MIDWEST REGION**
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# CHAIN OF CUSTODY

COC No. 017007

(Please Print Clearly)

| | |
|---|---|
| Company Name: | FA Engineering |
| Branch/Location: | Newburgh |
| Project Contact: | Paul Muessig |
| Phone: | 845-565-8100 x 1006 |
| Project Number: | 14368.10 |
| Project Name: | ThreeStar Anodizing |
| Project State: | New York |
| Sampled By (Print): | Brian Anderson |
| Sampled By (Sign): | Brian Anderson |
| PO #: | Regulatory Program: |

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

| Quote #: | |
|---|---|
| Mail To Contact: | |
| Mail To Company: | |
| Mail To Address: | |
| Invoice To Contact: | |
| Invoice To Company: | |
| Invoice To Address: | |
| Invoice To Phone: | |

**Data Package Options** (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

**MS/MSD**
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

**Matrix Codes**
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

| PACE LAB # | CLIENT FIELD ID | COLLECTION DATE | COLLECTION TIME | MATRIX | Analyses Requested: FILTERED? (YES/NO) Y/N | PRESERVATION (CODE)* Pick Letter A | As, Cd, Cr, Cu, Pb, Hg, Ni, Zn | | | | | | | CLIENT COMMENTS | LAB COMMENTS (Lab Use Only) | Profile # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TSAWC-05/07-FSA-1-SS-W-07 | 5/1/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-1-SS-W-08 | 5/1/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-1-SS-W-09 | 5/1/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-1-SS-W-10 | 5/1/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-1-SS-W-11 | 5/1/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-1-SS-W-12 | 5/1/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-1-SS-W-13 | 5/1/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-1-SS-W-14 | 5/1/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-1-SS-W-15 | 5/1/07 | | B | | X | | | | | | | | PRIMARY + Duplicate | | |
| | TSAWC-05/07-FSA-2-SS-W-01 | 5/1/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-2-SS-W-02 | 5/2/07 | | B | | X | | | | | | | | PRIMARY + Duplicate | | |
| | TSAWC-05/07-FSA-2-SS-W-03 | 5/2/07 | | B | | X | | | | | | | | | | |
| | TSAWC-05/07-FSA-2-SS-W-04 | 5/2/07 | | B | | X | | | | | | | | | | |

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

| | |
|---|---|
| Email #1: | |
| Email #2: | |
| Telephone: | |
| Fax: | |

Samples on HOLD are subject to special pricing and release of liability

| Relinquished By: | Date/Time: | Received By: | Date/Time: |
|---|---|---|---|
| [signature] | 5/7/07 1340 | | |
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| | | | |

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

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# CHAIN OF CUSTODY

COC No. 017020

| (Please Print Clearly) | |
|---|---|
| Company Name: | EA Engineering |
| Branch/Location: | Newburgh |
| Project Contact: | Paul Muessig |
| Phone: | 845-565-8100 x 1006 |
| Project Number: | 14368.10 |
| Project Name: | Three Star Anodizing |
| Project State: | New York |
| Sampled By (Print): | Brian Andersen |
| Sampled By (Sign): | Brian Andersen |
| PO #: | |
| Regulatory Program: | |

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Melhanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

| Quote #: | |
|---|---|
| Mail To Contact: | |
| Mail To Company: | |
| Mail To Address: | |
| Invoice To Contact: | |
| Invoice To Company: | |
| Invoice To Address: | |
| Invoice To Phone: | |

**Data Package Options** (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

**MS/MSD**
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

**Matrix Codes**

| | |
|---|---|
| A = Air | W = Water |
| B = Biota | DW = Drinking Water |
| C = Charcoal | GW = Ground Water |
| O = Oil | SW = Surface Water |
| S = Soil | WW = Waste Water |
| SI = Sludge | WP = Wipe |

| PACE LAB # | CLIENT FIELD ID | COLLECTION DATE | COLLECTION TIME | MATRIX | Analyses Requested: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn | CLIENT COMMENTS | LAB COMMENTS (Lab Use Only) | Profile # |
|---|---|---|---|---|---|---|---|---|
| FILTERED? (YES/NO) | | | | | Y/N: N | | | |
| PRESERVATION (CODE)* | | | | | Pick Letter: A | | | |
| | TSA WC-05/07-FSA-2-SS-W-05 | 5/2/07 | | B | X | | | |
| | TSAWC-05/07-FSA-2-SS-W-06 | 5/3/07 | | B | X | | | |
| | TSAWC-05/07-FSA-2-SS-W-08 | 5/3/07 | | B | X | | | |
| | TSAWC-05/07-FSA-2-BKF-W-01 | 5/2/07 | | B | X | | | |
| | TSAWC-05/07-FSA-2-BKF-W-02 | 5/2/07 | | B | X | | | |
| | TSAWC-05/07-FSA-2-BKF-W-03 | 5/3/07 | | B | X | MS/MSD | | |
| | TSAWC-05/07-FSA-2-BKF-W-04 | 5/2/07 | | B | X | | | |
| | TSAWC-05/07-FSA-2-BKF-W-05 | 5/3/07 | | B | X | | | |
| | TSAWC-05/07-FSA-2-BKF-W-06 | 5/3/07 | | B | X | | | |
| | TSAWC-05/07-FSA-2-TD-W-01 | 5/3/07 | | B | X | | | |
| | TSAWC-05/07-FSA-2-TD-W-02 | 5/3/07 | | B | X | | | |
| | | | | | | | | |
| | | | | | | | | |

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

| | |
|---|---|
| Email #1: | |
| Email #2: | |
| Telephone: | |
| Fax: | |

Samples on HOLD are subject to special pricing and release of liability

| Relinquished By: | Date/Time: | Received By: | Date/Time: |
|---|---|---|---|
| [signature] | 5/7/07 1340 | | |
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| | | | |

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

530 [illegible]

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# CHAIN OF CUSTODY

COC No. 017132

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| | |
|---|---|
| Company Name: | EA ENGINEERING |
| Branch/Location: | NEWBURGH |
| Project Contact: | PAUL MUESSIG |
| Phone: | 845-565-8100 - EX 1006 |
| Project Number: | |
| Project Name: | THREE STAR - WARPINGER |
| Project State: | NY |
| Sampled By (Print): | PAUL MUESSIG |
| Sampled By (Sign): | [signature] |
| PO #: | Regulatory Program: |

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

| | |
|---|---|
| Quote #: | |
| Mail To Contact: | PAUL MUESSIG |
| Mail To Company: | EA ENGINEERING |
| Mail To Address: | 3 WASHINGTON CENTER NEWBURGH NY 12550 |
| Invoice To Contact: | |
| Invoice To Company: | |
| Invoice To Address: | |
| Invoice To Phone: | |

**Data Package Options** (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

**MS/MSD**
- ☒ On your sample (billable)
- ☐ NOT needed on your sample

**Matrix Codes**
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

Analyses Requested: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn

| PACE LAB # | CLIENT FIELD ID | COLLECTION DATE | COLLECTION TIME | MATRIX | FILTERED? (YES/NO) Y/N | PRESERVATION (CODE)* Pick Letter | As, Cd, Cr, Cu, Pb, Hg, Ni, Zn | CLIENT COMMENTS | LAB COMMENTS (Lab Use Only) | Profile # |
|---|---|---|---|---|---|---|---|---|---|---|
| | TSAWL-06/07-WBS3-MUS-01 | 6/14/07 | 1200 | TIS | | N | X | HOLD EXTRA | | |
| | TSAWL-06/07-WBS3-MUS-02 | 6/14/07 | 1200 | TIS | | | X | MATERIAL IN | | |
| | TSAWL-06/07-WBS3-MUS-03 | 6/14/07 | 1200 | TIS | | | X | EVENT MSDL | | |
| | TSAWL-06/07-WBS3-SWL-01 | 6/14/07 | 1200 | TIS | | | X | REQUESTS | | |
| | TSAWL-06/07-WBS3-SWL-02 | 6/14/07 | 1200 | TIS | | | X | FURTHER | | |
| | TSAWL-06/07-WBS3-SWL-03 | 6/14/07 | 1200 | TIS | | | X | ANALYSIS | | |
| | TSAWL-06/07-WBS4-MUS-01 | 6/14/07 | 1500 | TIS | | | X | | | |
| | TSAWL-06/07-WBS4-SWL-01 | 6/14/07 | 1500 | TIS | | | X | | | |

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

| | |
|---|---|
| Email #1: | |
| Email #2: | |
| Telephone: | |
| Fax: | |

Samples on HOLD are subject to special pricing and release of liability

| Relinquished By: | Date/Time: | Received By: | Date/Time: |
|---|---|---|---|
| [signature] | 6/25/07 14:30 | | |
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PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

Version 6.0 06/14/06

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# CHAIN OF CUSTODY

COC No. 017021

(Please Print Clearly)

| | |
|---|---|
| Company Name: | EA ENGINEERING |
| Branch/Location: | NEWBURGH |
| Project Contact: | PAUL MUESSIG |
| Phone: | 845-565-8100 EX1006 |
| Project Number: | 14386.10 0002 |
| Project Name: | THREE STAR ANODIZING |
| Project State: | NY |
| Sampled By (Print): | PAUL MUESSIG |
| Sampled By (Sign): | [signature] |
| PO #: | Regulatory Program: |

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

| | |
|---|---|
| Quote #: | |
| Mail To Contact: | PAUL H MUESSIG |
| Mail To Company: | EA ENGINEERING |
| Mail To Address: | 3 WASHINGTON CENTER NEWBURGH NY 12550 |
| Invoice To Contact: | SAME |
| Invoice To Company: | |
| Invoice To Address: | SAME |
| Invoice To Phone: | |

**Data Package Options** (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

**MS/MSD**
- ☒ On your sample (billable)
- ☐ NOT needed on your sample

**Matrix Codes**
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

| PACE LAB # | CLIENT FIELD ID | COLLECTION DATE | COLLECTION TIME | MATRIX | Analyses Requested: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn | CLIENT COMMENTS | LAB COMMENTS (Lab Use Only) | Profile # |
|---|---|---|---|---|---|---|---|---|
| FILTERED? (YES/NO) | | | | | Y/N: N | | | |
| PRESERVATION (CODE)* | | | | | Pick Letter: A | | | |
| | TSAWC-08/07-WB3-SNL-04 | 8/29/07 | 0750 | B | X | HOLD EXTRA | | |
| | TSAWC-08/07-WB3-SNL-05 | 8/29/07 | 0710 | B | X | MATERIAL | | |
| | TSAWC-08/07-WB3-SNL-06 | 8/29/07 | 0750 | B | X | IN EVENT | | |
| | TSAWC-08/07-WB3-MUS-04 | 8/29/07 | 0750 | B | X | CLIENT | | |
| | TSAWC-08/07-WB3-MUS-05 | 8/29/07 | 0750 | B | X | (NYSDEC) | | |
| | TSAWC-08/07-WB3-MUS-06 | 8/29/07 | 0750 | B | X | REQUESTS | | |
| | | | | | | FURTHER | | |
| | | | | | | ANALYSES | | |

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

| | |
|---|---|
| Email #1: | |
| Email #2: | |
| Telephone: | |
| Fax: | |

Samples on HOLD are subject to special pricing and release of liability

| Relinquished By: | Date/Time: | Received By: | Date/Time: |
|---|---|---|---|
| [signature] | 8/29/07 1545 | | |
| | | | |
| | | | |
| | | | |
| | | | |

PACE Project No.

Receipt Temp = °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

# Appendix C

# Laboratory Data Package
# (provided on CD)

# Appendix D

# Data Usability Summary Report
# (provided on CD)

# Appendix E

# Field Photo Log

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** Electrofishing boat used as primary gear for fish collections in Wappinger Creek. Preparing to sample area FSA-1.

**Date:** 4 May 2007

**Comments:** Beach seine on sand bar along south shore used for fish collections in FSA-2.

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** Setting beach seine used for fish collections along north shore in FSA-2.

**Date:** 4 May 2007

**Comments:** Experimental multi-panel gill net used for fish collections.

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** Bass collected by electrofishing in area FSA-2 near County Route 28 bridge.

**Date:** 4 May 2007

**Comments:** Measuring length and weight of specimens in field.

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** Processing, labeling, and data recording in field.

**Date:** 4 May 2007

**Comments:** Gravel bar at mouth of tributary to Wappinger Creek downstream of boat launch in area FSA-1.

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** Looking across peninsula into cove in area FSA-1.

**Date:** 4 May 2007

**Comments:** View west (downstream) from boat launch in area FSA-1; gravel bar at tributary visible in middle ground.

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** View east (upstream) from boat launch in area FSA-1.

**Date:** 4 May 2007

**Comments:** Productive area for fish collections with woody debris along north shore in area FSA-2.

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** Area FSA-2 upstream of County Route 28 bridge; orange gill net float markers near shore in middle ground.

**Date:** 4 May 2007

**Comments:** Sampling in cove (area FSA-1) for invertebrates at low tide.

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** Cove at low tide with remnants of vegetation from previous growing season.

**Date:** 4 May 2007

**Comments:** Bug net used to sample surficial sediment for invertebrates.

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** Petite ponar dredge and wash pan used to sample for invertebrates.

**Date:** 4 May 2007

**Comments:** Sieve bucket used to wash down sediment material used to collect invertebrates

**PHOTOGRAPHIC RECORD**

**Date:** 21 June 2007

**Comments:** Invertebrate sampling area WBS-4 to the north and east of County Route 28 bridge.

**Date:** 21 June 2007

**Comments:** Invertebrate sampling area along derelict timber bulkhead adjacent to WBS-3.

**PHOTOGRAPHIC RECORD**

**Date:** 21 June 2007

**Comments:** Invertebrate sampling area along derelict timber bulkhead adjacent to WBS-3.

**Date:** 21 June 2007

**Comments:** Cove (WBS-2) with summer vegetation at high tide.

**PHOTOGRAPHIC RECORD**

**Date:** 4 May 2007

**Comments:** Cove (WBS-2) prior to growing season viewed from Wappinger Creek.

**Date:** 21 June 2007

**Comments:** Point and timber bulkhead (in middle ground) where invertebrate samples were collected for area WBS-3.

**PHOTOGRAPHIC RECORD**

**Date:** 21 June 2007

**Comments:** Root mass and stems of water chestnut inspected for clinging invertebrates.

**Date:** 29 August 2007

**Comments:** Inspecting waterlogged woody debris for invertebrates.

**PHOTOGRAPHIC RECORD**

**Date:** 29 August 2007

**Comments:** Mud/silt substrate characteristic of intertidal shoreline.

**Date:** 29 August 2007

**Comments:** Mud/silt substrate with submerged aquatic vegetation characteristic of intertidal shoreline.

**PHOTOGRAPHIC RECORD**

**Date:** 29 August 2007

**Comments:** Inspecting stems of emergent aquatic vegetation for invertebrates.

**Date:** 29 August 2007

**Comments:** Dense beds of submerged water chestnut which choke all but the deepest portion of the channel of Wappinger Creek during the summer growing season; emergent wetland vegetation in the cove visible at shoreline in middle ground.

**PHOTOGRAPHIC RECORD**

**Date:** 29 August 2007

**Comments:** Invertebrate sampling location WBS-3 looking toward north shore of Creek; water chestnut beds in background.

**Date:** 4 May 2007

**Comments:** Osprey observed in tree near cove.

**PHOTOGRAPHIC RECORD**

**Date:** 29 August 2007

**Comments:** Beaver swimming from lodge along edge of wetland at cove.

**Date:** 29 August 2007

**Comments:** Green heron in middle of photo fishing from woody debris along shoreline.

**PHOTOGRAPHIC RECORD**

**Date:** 29 August 2007

**Comments:** Great blue heron fishing from woody debris near WBS-4 sampling area.

**Date:** 21 June 2007

**Comments:** Great blue heron fishing in cove wetland.

**PHOTOGRAPHIC RECORD**

**Date:** 29 August 2007

**Comments:** Great blue heron fishing near sampling areas WBS-1 and FSA-1.

# Appendix F

# Summary of Field and Validated Analytical Data

TABLE F-1. VALIDATED RESULTS OF METALS ANALYSES FOR FILETS FROM LARGEMOUTH BASS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

| Sample No. | Location | Date | Taxon | Sample Type | As | Cd | Cr | Cu | Pb | Hg | Ni | Zn | Length (mm) | Weight (g) | Field Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA-1-LMB-F-01 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.066 J | 0.0090 J | 0.22 J | 0.30 J | 0.024 U | 0.0960 | 0.34 UJ | 6.9 U | 368 | 822.2 | |
| TSAWC-05/07-FSA-1-LMB-F-02 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.040 J | 0.0110 J | 0.22 J | 0.19 J | 0.024 U | 0.0970 | 0.34 UJ | 6.9 U | 336 | 624.1 | |
| TSAWC-05/07-FSA-1-LMB-F-03 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.038 J | 0.0081 U | 0.23 J | 0.23 J | 0.024 U | 0.0880 | 0.34 UJ | 5.3 U | 364 | 747.6 | |
| TSAWC-05/07-FSA-1-LMB-F-04 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.043 J | 0.0200 J | 0.24 J | 0.22 J | 0.024 U | 0.2300 | 0.34 UJ | 6.3 U | 465 | 1819.1 | sore on mandible |
| TSAWC-05/07-FSA-1-LMB-F-05 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.028 J | 0.0081 U | 0.23 J | 0.32 J | 0.024 U | 0.1500 | 0.34 UJ | 6.1 U | 390 | 893.4 | sore on mandible |
| TSAWC-05/07-FSA-1-LMB-F-06 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.031 J | 0.0081 U | 0.22 J | 0.28 J | 0.024 U | 0.2200 | 0.34 UJ | 6.7 U | 410 | 1018.4 | |
| TSAWC-05/07-FSA-1-LMB-F-06-DUP | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.038 J | 0.0081 U | 0.21 J | 0.20 J | 0.024 U | 0.2200 | 0.34 UJ | 8.4 U | | | |
| TSAWC-05/07-FSA-1-LMB-F-07 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.056 J | 0.0081 U | 0.23 J | 0.23 J | 0.024 U | 0.1100 | 0.34 UJ | 6.3 U | 341 | 657.8 | |
| TSAWC-05/07-FSA-1-LMB-F-08 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.050 J | 0.0081 U | 0.22 J | 0.41 J | 0.024 U | 0.1000 | 0.34 UJ | 8.4 U | 289 | 331.4 | |
| TSAWC-05/07-FSA-1-LMB-F-09 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.025 J | 0.0081 U | 0.24 J | 0.22 J | 0.024 U | 0.4100 | 0.34 UJ | 7.5 U | 284 | 278.5 | |
| TSAWC-05/07-FSA-1-LMB-F-10 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.026 J | 0.0081 U | 0.22 J | 0.20 J | 0.024 U | 0.0740 | 0.34 UJ | 9.2 U | 278 | 293.7 | |
| TSAWC-05/07-FSA-1-LMB-F-11 | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.028 J | 0.0081 U | 0.23 J | 0.24 J | 0.024 U | 0.1200 | 0.34 UJ | 6.1 U | 269 | 416.2 | |
| | | | Mean | | 0.039 | 0.0094 | 0.23 | 0.25 | 0.024 | 0.1596 | 0.34 | 7.0 | 344.9 | 718.4 | |
| | | | Min | | 0.025 | 0.0081 | 0.21 | 0.19 | 0.024 | 0.0740 | 0.34 | 5.3 | 269.0 | 278.5 | |
| | | | Max | | 0.066 | 0.0200 | 0.24 | 0.41 | 0.024 | 0.4100 | 0.34 | 9.2 | 465.0 | 1819.1 | |
| | | | Std Dev | | 0.013 | 0.0034 | 0.01 | 0.06 | 0.000 | 0.0968 | 0.00 | 1.2 | 62.3 | 444.0 | |
| TSAWC-05/07-FSA-2-LMB-F-01 | FSA-2 | 5/1/2007 | Largemouth bass | fillet | 0.018 J | 0.0081 U | 0.20 J | 0.19 J | 0.024 U | 0.1500 | 0.34 UJ | 6.9 U | 419 | 1047.8 | sore on mandible |
| TSAWC-05/07-FSA-2-LMB-F-02 | FSA-2 | 5/1/2007 | Largemouth bass | fillet | 0.029 J | 0.0081 U | 0.20 J | 0.29 J | 0.024 U | 0.1200 | 0.34 UJ | 6.9 U | 412 | 1094.7 | |
| TSAWC-05/07-FSA-2-LMB-F-03 | FSA-2 | 5/1/2007 | Largemouth bass | fillet | 0.035 J | 0.0081 U | 0.21 J | 0.23 J | 0.024 U | 0.1800 | 0.34 UJ | 11.0 U | 447 | 1577.5 | |
| TSAWC-05/07-FSA-2-LMB-F-04 | FSA-2 | 5/1/2007 | Largemouth bass | fillet | 0.034 J | 0.0081 U | 0.20 J | 0.21 J | 0.024 U | 0.0670 | 0.34 UJ | 9.4 U | 350 | 612.3 | |
| TSAWC-05/07-FSA-2-LMB-F-05 | FSA-2 | 5/1/2007 | Largemouth bass | fillet | 0.046 J | 0.0190 J | 0.22 U | 0.24 J | 0.024 U | 0.1400 | 0.34 UJ | 7.9 U | 296 | 378.3 | |
| TSAWC-05/07-FSA-2-LMB-F-06 | FSA-2 | 5/1/2007 | Largemouth bass | fillet | 0.027 J | 0.0081 U | 0.20 U | 0.26 J | 0.024 U | 0.3800 | 0.34 UJ | 6.9 U | 440 | 1597.2 | |
| TSAWC-05/07-FSA-2-LMB-F-07 | FSA-2 | 5/1/2007 | Largemouth bass | fillet | 0.048 J | 0.0081 U | 0.19 U | 0.20 J | 0.024 U | 0.2100 | 0.34 UJ | 6.9 U | 375 | 792 | |
| TSAWC-05/07-FSA-2-LMB-F-08 | FSA-2 | 5/1/2007 | Largemouth bass | fillet | 0.025 J | 0.0081 U | 0.21 U | 0.18 J | 0.024 U | 0.2400 | 0.34 UJ | 6.9 U | 391 | 909.9 | |
| TSAWC-05/07-FSA-2-LMB-F-09 | FSA-2 | 5/1/2007 | Largemouth bass | fillet | 0.053 J | 0.0081 U | 0.20 U | 0.21 J | 0.024 U | 0.5500 | 0.34 UJ | 5.4 U | 498 | 2125 | |
| TSAWC-05/07-FSA-2-LMB-F-09-DUP | FSA-1 | 5/1/2007 | Largemouth bass | fillet | 0.041 J | 0.0081 U | 0.23 U | 0.21 J | 0.024 U | 0.6000 | 0.34 UJ | 8.5 U | | | |
| TSAWC-05/07-FSA-2-LMB-F-10 | FSA-2 | 5/2/2007 | Largemouth bass | fillet | 0.032 J | 0.0081 U | 0.23 U | 0.28 J | 0.024 U | 0.0900 | 0.34 UJ | 9.7 U | 335 | 558.4 | |
| TSAWC-05/07-FSA-2-LMB-F-11 | FSA-2 | 5/2/2007 | Largemouth bass | fillet | 0.028 J | 0.0081 U | 0.21 U | 0.25 J | 0.024 U | 0.0750 | 0.34 UJ | 8.1 U | 318 | 501.2 | |
| TSAWC-05/07-FSA-2-LMB-F-12 | FSA-2 | 5/2/2007 | Largemouth bass | fillet | 0.028 J | 0.0081 U | 0.24 U | 0.36 J | 0.024 U | 0.0620 | 0.34 UJ | 11.0 U | 324 | 489.9 | |
| TSAWC-05/07-FSA-2-LMB-F-13 | FSA-2 | 5/2/2007 | Largemouth bass | fillet | 0.031 J | 0.0081 U | 0.21 U | 0.24 J | 0.024 U | 0.1200 | 0.34 UJ | 7.7 U | 407 | 1218.5 | sore on mandible |
| TSAWC-05/07-FSA-2-LMB-F-14 | FSA-2 | 5/2/2007 | Largemouth bass | fillet | 0.049 J | 0.0081 U | 0.22 U | 0.44 J | 0.024 U | 0.3500 | 0.34 UJ | 8.9 U | 435 | 1343.7 | |
| TSAWC-05/07-FSA-2-LMB-F-15 | FSA-2 | 5/3/2007 | Largemouth bass | fillet | 0.047 J | 0.0200 J | 0.20 U | 0.05 J | 0.024 U | 0.5100 | 0.34 UJ | 5.8 U | 509 | 2600 | MS/MSD |
| | | | Mean | | 0.036 | 0.0095 | 0.21 | 0.24 | 0.024 | 0.2403 | 0.34 | 8.0 | 397.1 | 1123.1 | |
| | | | Min | | 0.018 | 0.0081 | 0.19 | 0.05 | 0.024 | 0.0620 | 0.34 | 5.4 | 296.0 | 378.3 | |
| | | | Max | | 0.053 | 0.0200 | 0.24 | 0.44 | 0.024 | 0.6000 | 0.34 | 11.0 | 509.0 | 2600.0 | |
| | | | Std Dev | | 0.010 | 0.0039 | 0.01 | 0.08 | 0.000 | 0.1813 | 0.00 | 1.7 | 64.2 | 641.3 | |

J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-2. VALIDATED RESULTS OF METALS ANALYSES FOR FILETS FROM SMALLMOUTH BASS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

| Sample No. | Location | Date | Taxon | Sample Type | As | Cd | Cr | Cu | Pb | Hg | Ni | Zn | % Solids | Length (mm) | Weight (g) | Field Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA-1-SMB-F-01 | FSA-1 | 5/1/2007 | Smallmouth bass | fillet | 0.120 | 0.0081 U | 0.22 J | 0.29 J | 0.024 U | 0.3400 | 0.34 UJ | 6.2 U | 21.0 | 407 | 970.2 | |
| TSAWC-05/07-FSA-1-SMB-F-02 | FSA-1 | 5/1/2007 | Smallmouth bass | fillet | 0.095 J | 0.0081 U | 0.22 J | 0.27 J | 0.024 U | 0.0900 | 0.34 UJ | 5.6 U | 21.6 | 406 | 998.7 | |
| TSAWC-05/07-FSA-1-SMB-F-03 | FSA-1 | 5/1/2007 | Smallmouth bass | fillet | 0.180 | 0.0081 U | 0.21 J | 0.36 J | 0.024 U | 0.2300 | 0.34 UJ | 6.3 U | 20.4 | 402 | 1002.8 | |
| TSAWC-05/07-FSA-1-SMB-F-04 | FSA-1 | 5/1/2007 | Smallmouth bass | fillet | 0.170 | 0.0081 U | 0.19 J | 0.25 J | 0.024 U | 0.1300 | 0.34 UJ | 6.4 U | 18.7 | 344 | 424.4 | sore on lower body |
| | | | Mean | | 0.141 | 0.0081 | 0.21 | 0.29 | 0.024 | 0.1975 | 0.34 | 6.1 | 20.4 | 389.8 | 849.0 | |
| | | | Min | | 0.095 | 0.0081 | 0.19 | 0.25 | 0.024 | 0.0900 | 0.34 | 5.6 | 18.7 | 344.0 | 424.4 | |
| | | | Max | | 0.180 | 0.0081 | 0.22 | 0.36 | 0.024 | 0.3400 | 0.34 | 6.4 | 21.6 | 407.0 | 1002.8 | |
| | | | Std Dev | | 0.040 | 0.0000 | 0.01 | 0.05 | 0.000 | 0.1118 | 0.00 | 0.4 | 1.3 | 30.6 | 283.5 | |

J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-3. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF SPOTTAIL SHINER COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

| Sample No. | Location | Date | Taxon | Sample Type | As | Cd | Cr | Cu | Pb | Hg | Ni | Zn | % Solids | Number in Sample | Mean Length (mm) | Mean Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA-1-SS-W-01 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.086 J | 0.1100 | 0.26 U | 0.63 J | 0.190 | 0.0300 | 0.34 UJ | 48.0 | 26.0 | 2 | 111.5 | 12.9 |
| TSAWC-05/07-FSA-1-SS-W-02 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.075 J | 0.0140 J | 0.29 U | 0.71 J | 0.100 | 0.0340 | 0.34 UJ | 31.0 U | 23.1 | 2 | 103.5 | 11.0 |
| TSAWC-05/07-FSA-1-SS-W-03 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.120 | 0.0420 J | 0.25 U | 0.57 J | 0.140 | 0.0450 | 0.34 U | 41.0 R | 24.0 | 2 | 105.0 | 10.7 |
| TSAWC-05/07-FSA-1-SS-W-04 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.081 J | 0.0420 J | 0.28 U | 1.40 | 0.220 | 0.0480 | 0.34 U | 31.0 R | 24.5 | 2 | 109.0 | 13.2 |
| TSAWC-05/07-FSA-1-SS-W-05 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.160 | 0.0440 J | 0.27 U | 0.82 J | 0.180 | 0.0330 | 0.34 U | 66.0 R | 26.0 | 6 | 102.8 | 10.2 |
| TSAWC-05/07-FSA-1-SS-W-06 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.120 | 0.0130 J | 0.22 U | 0.80 J | 0.056 J | 0.0430 | 0.34 U | 33.0 R | 25.0 | 2 | 102.0 | 10.1 |
| TSAWC-05/07-FSA-1-SS-W-07 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.100 | 0.0230 J | 0.31 U | 0.57 J | 0.400 | 0.0230 | 0.34 U | 35.0 R | 28.1 | 2 | 106.0 | 10.5 |
| TSAWC-05/07-FSA-1-SS-W-08 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.066 J | 0.0140 J | 0.27 U | 0.06 J | 0.130 | 0.0330 | 0.34 U | 32.0 R | 22.1 | 2 | 106.0 | 10.0 |
| TSAWC-05/07-FSA-1-SS-W-09 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.078 J | 0.0170 J | 0.22 U | 0.48 J | 0.044 J | 0.0340 | 0.34 U | 18.0 R | 22.3 | 3 | 102.7 | 9.6 |
| TSAWC-05/07-FSA-1-SS-W-10 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.076 J | 0.0160 J | 0.23 U | 0.52 J | 0.091 J | 0.0280 | 0.34 U | 28.0 R | 24.7 | 3 | 99.7 | 7.8 |
| TSAWC-05/07-FSA-1-SS-W-11 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.079 J | 0.0250 J | 0.27 U | 0.66 J | 0.130 | 0.0320 | 0.34 U | 24.0 R | 23.1 | 2 | 107.5 | 10.8 |
| TSAWC-05/07-FSA-1-SS-W-12 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.100 | 0.0430 J | 0.30 U | 1.00 | 0.270 | 0.0490 | 0.34 U | 36.0 R | 23.9 | 2 | 102.0 | 9.6 |
| TSAWC-05/07-FSA-1-SS-W-13 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.073 J | 0.0100 J | 0.19 U | 0.75 J | 0.065 J | 0.0380 | 0.34 U | 18.0 R | 25.5 | 2 | 100.5 | 8.6 |
| TSAWC-05/07-FSA-1-SS-W-14 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.110 | 0.0190 J | 0.25 U | 0.64 J | 0.160 | 0.0430 | 0.34 U | 24.0 R | 26.0 | 3 | 102.7 | 9.2 |
| TSAWC-05/07-FSA-1-SS-W-15 | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.150 J | 0.0420 J | 0.62 U | 0.53 J | 0.700 J | 0.0380 | 0.36 J | 78.0 J | 24.0 | 4 | 105.8 | 11.5 |
| TSAWC-05/07-FSA-1-SS-W-15-DUP | FSA-1 | 5/1/2007 | Spottail shiner | whole | 0.082 J | 0.0130 J | 0.24 U | 0.55 J | 0.096 J | 0.0370 | 0.34 U | 20.0 R | 24.0 | | | |
| | | | Mean | | 0.097 | 0.0304 | 0.28 | 0.67 | 0.186 | 0.0368 | 0.34 | 35.2 | 24.5 | | | |
| | | | Min | | 0.066 | 0.0100 | 0.19 | 0.06 | 0.044 | 0.0230 | 0.34 | 18.0 | 22.1 | | | |
| | | | Max | | 0.160 | 0.1100 | 0.62 | 1.40 | 0.700 | 0.0490 | 0.36 | 78.0 | 28.1 | | | |
| | | | Std Dev | | 0.028 | 0.0248 | 0.10 | 0.28 | 0.164 | 0.0073 | 0.00 | 16.6 | 1.6 | | | |
| TSAWC-05/07-FSA-2-SS-W-01 | FSA-2 | 5/1/2007 | Spottail shiner | whole | 0.210 | 0.0250 J | 0.35 U | 0.61 J | 0.350 | 0.0230 | 0.34 U | 34.0 R | 26.1 | 2 | 91.0 | 7.8 |
| TSAWC-05/07-FSA-2-SS-W-02 | FSA-2 | 5/2/2007 | Spottail shiner | whole | 0.120 J | 0.0620 J | 0.45 U | 3.10 J | 0.480 J | 0.0550 J | 0.34 U | 27.0 | 24.9 | 2 | 113.0 | 13.1 |
| TSAWC-05/07-FSA-2-SS-W-02-DUP | FSA-2 | 5/2/2007 | Spottail shiner | whole | 0.067 J | 0.0240 J | 0.17 U | 0.53 J | 0.092 J | 0.0510 J | 0.34 U | 25.0 | 24.9 | | | |
| TSAWC-05/07-FSA-2-SS-W-03 | FSA-2 | 5/2/2007 | Spottail shiner | whole | 0.083 J | 0.0190 J | 0.26 U | 0.52 J | 0.270 J | 0.0280 J | 0.34 U | 26.0 | 22.8 | 2 | 103.0 | 10.9 |
| TSAWC-05/07-FSA-2-SS-W-04 | FSA-2 | 5/2/2007 | Spottail shiner | whole | 0.075 J | 0.0150 J | 0.22 U | 0.52 J | 0.170 J | 0.0290 J | 0.34 U | 41.0 | 24.7 | 2 | 109.0 | 12.4 |
| TSAWC-05/07-FSA-2-SS-W-05 | FSA-2 | 5/2/2007 | Spottail shiner | whole | 0.110 | 0.0090 J | 0.24 U | 0.58 J | 0.120 J | 0.0670 J | 0.34 U | 31.0 | 23.5 | 2 | 106.0 | 11.9 |
| TSAWC-05/07-FSA-2-SS-W-06 | FSA-2 | 5/2/2007 | Spottail shiner | whole | 0.073 J | 0.0210 J | 0.20 U | 0.50 J | 0.049 J | 0.0160 J | 0.34 U | 41.0 | 22.9 | 3 | 81.3 | 4.9 |
| TSAWC-05/07-FSA-2-SS-W-08 | FSA-2 | 5/3/2007 | Spottail shiner | whole | 0.067 J | 0.0170 J | 0.20 U | 0.52 J | 0.075 J | 0.0520 J | 0.34 U | 36.0 | 25.3 | 1 | 105 | 11.1 |
| | | | Mean | | 0.101 | 0.0240 | 0.26 | 0.86 | 0.201 | 0.0401 | 0.34 | 32.6 | 24.4 | | | |
| | | | Min | | 0.067 | 0.0090 | 0.17 | 0.50 | 0.049 | 0.0160 | 0.34 | 25.0 | 22.8 | | | |
| | | | Max | | 0.210 | 0.0620 | 0.45 | 3.10 | 0.480 | 0.0670 | 0.34 | 41.0 | 26.1 | | | |
| | | | Std Dev | | 0.048 | 0.0162 | 0.09 | 0.91 | 0.153 | 0.0183 | 0.00 | 6.4 | 1.2 | | | |

R = Analysis rejected because of low recovery percentage for MS/MSD sample
J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-4. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF BANDED KILLIFISH COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

| Sample No. | Location | Date | Taxon | Sample Type | As | Cd | Cr | Cu | Pb | Hg | Ni | Zn | % Solids | Number in Sample | Mean Length (mm) | Mean Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA-2-BKF-W-01 | FSA-2 | 5/2/2007 | Banded killifish | whole | 0.055 J | 0.0160 J | 0.21 U | 0.84 J | 0.080 J | 0.0170 J | 0.34 U | 28.0 | 23.0 | 13 | 44.3 | 0.8 |
| TSAWC-05/07-FSA-2-BKF-W-02 | FSA-2 | 5/2/2007 | Banded killifish | whole | 0.052 J | 0.0100 J | 0.22 U | 1.10 | 0.031 J | 0.0170 J | 0.34 U | 26.0 | 24.1 | 3 | 68.3 | 3.1 |
| TSAWC-05/07-FSA-2-BKF-W-03 | FSA-2 | 5/3/2007 | Banded killifish | whole | 0.066 J | 0.0310 J | 0.20 U | 0.71 J | 0.060 J | 0.0160 J | 0.34 U | 26.0 | 23.7 | 26 | 49.5 | 1.2 |
| TSAWC-05/07-FSA-2-BKF-W-04 | FSA-2 | 5/3/2007 | Banded killifish | whole | 0.069 J | 0.0350 J | 0.24 U | 1.60 | 0.110 J | 0.0170 J | 0.34 U | 34.0 | 23.7 | 6 | 57.8 | 1.7 |
| TSAWC-05/07-FSA-2-BKF-W-05 | FSA-2 | 5/3/2007 | Banded killifish | whole | 0.057 J | 0.0120 J | 0.18 U | 0.94 J | 0.062 J | 0.0190 J | 0.34 U | 31.0 | 20.7 | 24 | 44.5 | 0.8 |
| TSAWC-05/07-FSA-2-BKF-W-06 | FSA-2 | 5/3/2007 | Banded killifish | whole | 0.073 J | 0.0150 J | 0.23 U | 0.87 J | 0.110 J | 0.0170 J | 0.34 U | 34.0 | 22.0 | 17 | 40.9 | 0.7 |
| | | | Mean | | 0.062 | 0.0198 | 0.21 | 1.01 | 0.076 | 0.0172 | 0.34 | 29.8 | 22.9 | | | |
| | | | Min | | 0.052 | 0.0100 | 0.18 | 0.71 | 0.031 | 0.0160 | 0.34 | 26.0 | 20.7 | | | |
| | | | Max | | 0.073 | 0.0350 | 0.24 | 1.60 | 0.110 | 0.0190 | 0.34 | 34.0 | 24.1 | | | |
| | | | Std Dev | | 0.008 | 0.0105 | 0.02 | 0.32 | 0.031 | 0.0010 | 0.00 | 3.7 | 1.3 | | | |

J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-5. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF TESSELATED DARTERS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

| Sample No. | Location | Date | Taxon | Sample Type | As | Cd | Cr | Cu | Pb | Hg | Ni | Zn | % Solids | Number in Sample | Mean Length (mm) | Mean Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSAWC-05/07-FSA-2-TD-W-01 | FSA-2 | 5/3/2007 | Tesselated darter | whole | 0.070 J | 0.0081 U | 0.17 U | 0.59 J | 0.094 J | 0.0220 J | 0.34 U | 31.0 | 25.1 | 4 | 59.2 | 2.4 |
| TSAWC-05/07-FSA-2-TD-W-02 | FSA-2 | 5/3/2007 | Tesselated darter | whole | 0.048 J | 0.0081 U | 0.19 U | 0.54 J | 0.063 J | 0.0170 J | 0.34 U | 22.0 | 23.9 | 5 | 58 | 1.5 |
| | | | Mean | | 0.059 | 0.0081 | 0.18 | 0.57 | 0.079 | 0.0195 | 0.34 | 26.5 | 24.5 | | | |
| | | | Min | | 0.048 | 0.008 | 0.170 | 0.540 | 0.063 | 0.017 | 0.340 | 22.0 | 23.9 | | | |
| | | | Max | | 0.070 | 0.008 | 0.190 | 0.590 | 0.094 | 0.022 | 0.340 | 31.0 | 25.1 | | | |
| | | | Std Dev | | 0.016 | 0.0000 | 0.01 | 0.04 | 0.022 | 0.0035 | 0.00 | 6.4 | 0.8 | | | |

J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-6. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF ZEBRA MUSSELS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

| Sample No. | Location | Date | Taxon | Sample Type | As | Cd | Cr | Cu | Pb | Hg | Ni | Zn | % Solids | Number in Sample | Total Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSAWC-06/07-WBS3-MUS-01 | WBS-3 | 6/14/2007 | Mussel | Whole | 0.360 | 0.0960 B | 0.70 | 5.70 | 1.300 | 0.0080 B | 39 | 7.2 | 59.3 | 35 | 5.26 |
| TSAWC-06/07-WBS3-MUS-02 | WBS-3 | 6/14/2007 | Mussel | Whole | 0.260 | 0.0740 B | 0.25 | 7.70 | 1.200 | 0.0090 B | 34 | 12.0 | 27.2 | 32 | 4.98 |
| TSAWC-06/07-WBS3-MUS-03 | WBS-3 | 6/14/2007 | Mussel | Whole | 0.290 | 0.0970 B | 0.29 | 1.80 B | 1.800 | 0.0110 | 6.8 | 7.9 | 41.2 | 38 | 5.33 |
| TSAWC-08/07-WBS3-MUS-04 | WBS-3 | 8/29/2007 | Mussel | Whole | 0.260 | 0.0640 J | 0.19 U | 1.60 UJ | 0.260 | 0.0065 J | 1.8 | 5.4 U | 34.9 | 34 | 5.14 |
| TSAWC-08/07-WBS3-MUS-05 | WBS-3 | 8/29/2007 | Mussel | Whole | 0.250 | 0.0700 J | 0.16 U | 1.50 UJ | 0.220 | 0.0062 J | 1.9 | 5.8 U | 36.3 | 37 | 5 |
| TSAWC-08/07-WBS3-MUS-06 | WBS-3 | 8/29/2007 | Mussel | Whole | 0.260 | 0.0810 J | 0.20 U | 1.40 UJ | 0.240 | 0.0073 J | 1.9 | 5.5 U | 35.4 | 32 | 4.23 |
| | | | Mean | | 0.280 | 0.0803 | 0.30 | 3.28 | 0.837 | 0.0080 | 14.2 | 7.3 | 39.1 | | |
| | | | Min | | 0.250 | 0.0640 | 0.16 | 1.40 | 0.220 | 0.0062 | 1.8 | 5.4 | 27.2 | | |
| | | | Max | | 0.360 | 0.0970 | 0.70 | 7.70 | 1.800 | 0.0110 | 39.0 | 12.0 | 59.3 | | |
| | | | Std Dev | | 0.041 | 0.0137 | 0.20 | 2.72 | 0.685 | 0.0018 | 17.4 | 2.5 | 10.9 | | |
| TSAWC-06/07-WBS4-MUS-01 | WBS-4 | 6/14/2007 | Mussel | Whole | 0.270 | 0.0590 B | 0.39 | 1.60 | 0.370 | 0.0060 B | 20 | 5.4 | 43.3 | 31 | 5.1 |

B = The analyte was detected between the method detection limit (MDL) and the reporting limit.
J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

TABLE F-7. VALIDATED RESULTS OF METALS ANALYSES FOR WHOLE BODY SAMPLE OF SNAILS COLLECTED FROM TIDAL REACH OF WAPPINGER CREEK BELOW THREE STAR ANODIZING SITE, MAY 2007.

| Sample No. | Location | Date | Taxon | Sample Type | As | Cd | Cr | Cu | Pb | Hg | Ni | Zn | % Solids | Number in Sample | Total Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSAWC-06/07-WBS3-SNL-01 | WBS-3 | 6/14/2007 | Snail | Whole | 0.390 | 0.1000 | 0.32 | 56.00 | 1.500 | 0.0170 | 24 | 25.0 | 39.7 | 57 | 5.08 |
| TSAWC-06/07-WBS3-SNL-02 | WBS-3 | 6/14/2007 | Snail | Whole | 0.380 | 0.0740 B | 0.27 | 26.00 | 0.800 | 0.0180 | 7.8 | 16.0 | 31.9 | 62 | 5.29 |
| TSAWC-06/07-WBS3-SNL-03 | WBS-3 | 6/14/2007 | Snail | Whole | 0.510 | 0.0610 B | 0.67 | 24.00 | 1.600 | 0.0230 | 5.4 | 16.0 | 30.1 | 59 | 5.65 |
| TSAWC-08/07-WBS3-SNL-04 | WBS-3 | 8/29/2007 | Snail | Whole | 0.360 | 0.0710 J | 0.24 U | 27.00 J | 0.640 | 0.0130 | 1.4 | 15.0 U | 35.8 | 58 | 5.13 |
| TSAWC-08/07-WBS3-SNL-05 | WBS-3 | 8/29/2007 | Snail | Whole | 0.330 | 0.0590 J | 0.33 U | 24.00 J | 0.890 | 0.0170 | 1.5 | 14.0 U | 32.2 | 55 | 5.17 |
| TSAWC-08/07-WBS3-SNL-06 | WBS-3 | 8/29/2007 | Snail | Whole | 0.350 | 0.0760 J | 0.30 U | 17.00 J | 0.610 | 0.0120 | 1.5 | 12.0 U | 34.6 | 65 | 6.62 |
| | | | Mean | | 0.387 | 0.0735 | 0.36 | 29.00 | 1.007 | 0.0167 | 6.9 | 16.3 | 34.1 | | |
| | | | Min | | 0.330 | 0.0590 | 0.24 | 17.00 | 0.610 | 0.0120 | 1.4 | 12.0 | 30.1 | | |
| | | | Max | | 0.510 | 0.1000 | 0.67 | 56.00 | 1.600 | 0.0230 | 24.0 | 25.0 | 39.7 | | |
| | | | Std Dev | | 0.064 | 0.0147 | 0.16 | 13.68 | 0.434 | 0.0039 | 8.8 | 4.5 | 3.4 | | |
| TSAWC-06/07-WBS4-SNL-01 | WBS-4 | 6/14/2007 | Snail | Whole | 0.340 | 0.0620 B | 0.42 | 20.00 | 0.670 | 0.0170 | 58 | 15.0 | 46.9 | 57 | 5.09 |

B = The analyte was detected between the method detection limit (MDL) and the reporting limit.
J = Analyte detected between the MDL and the reporting limit; concentration estimated
U = The analyte was not detected at or above the reporting limit

# Appendix C

# Field Sampling Information
# (Provided in Hard Copy Only)

# Appendix D

# Core Logs for 2009 Sediment Samples from Tidal Wappinger Creek (Provided in Hard Copy Only)

# Appendix E

# Life Science Laboratories, Inc.
# Electronic Data Deliverable

Created on 11/04/2009 13:25

| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-001A | WC-1-SED-A | Percent Moi | 10/12/2009 | 12:30 | Sediment | SM2540G | GIS-210-008 | 45.7 | Y | percent | | TRG |
| 0910044-001A | WC-1-SED-A | Aluminum | 10/12/2009 | 12:30 | Sediment | SW6010B | 7429-90-5 | 16000 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Iron | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-89-6 | 26000 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Lead | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-92-1 | 16 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Magnesium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-95-4 | 6000 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Manganese | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-96-5 | 290 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Nickel | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-02-0 | 27 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Potassium | 10/12/2009 | 12:30 | Sediment | SW6010B | 9/7/7440 | 1500 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Silver | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-001A | WC-1-SED-A | Sodium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-23-5 | 160 | Y | mg/kg | J | TRG |
| 0910044-001A | WC-1-SED-A | Thallium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-001A | WC-1-SED-A | Antimony | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-001A | WC-1-SED-A | Arsenic | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-38-2 | 3.6 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Barium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-39-3 | 69 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Beryllium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-41-7 | 0.73 | Y | mg/kg | J | TRG |
| 0910044-001A | WC-1-SED-A | Cadmium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-43-9 | 0.34 | Y | mg/kg | J | TRG |
| 0910044-001A | WC-1-SED-A | Chromium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-47-3 | 23 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Cobalt | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-48-4 | 12 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Copper | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-50-8 | 18 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Vanadium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-62-2 | 22 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Zinc | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-66-6 | 85 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Calcium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-70-2 | 3000 | Y | mg/kg | | TRG |
| 0910044-001A | WC-1-SED-A | Selenium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7782-49-2 | 0.48 | Y | mg/kg | J | TRG |
| 0910044-001A | WC-1-SED-A | Mercury | 10/12/2009 | 12:30 | Sediment | SW7471A | 7439-97-6 | 0.04 | Y | mg/kg | J | TRG |
| 0910044-001A | WC-1-SED-A | Cyanide, To | 10/12/2009 | 12:30 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-001ADUP | WC-1-SED-AL | Percent Moi | 10/12/2009 | 12:30 | Sediment | SM2540G | GIS-210-008 | 46.8 | Y | percent | | TRG |
| 0910044-001AMS | WC-1-SED-AM | Aluminum | 10/12/2009 | 12:30 | Sediment | SW6010B | 7429-90-5 | | Y | mg/kg | S | SC |
| 0910044-001AMS | WC-1-SED-AM | Iron | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-89-6 | | Y | mg/kg | S | SC |
| 0910044-001AMS | WC-1-SED-AM | Lead | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-92-1 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AM | Magnesium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-95-4 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AM | Manganese | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-96-5 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AM | Nickel | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-02-0 | | Y | mg/kg | | SC |

Created on 11/04/2009 13:25

| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-001AMS | WC-1-SED-AN | Potassium | 10/12/2009 | 12:30 | Sediment | SW6010B | 9/7/7440 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Silver | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-22-4 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Sodium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-23-5 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Thallium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-28-0 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Antimony | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-36-0 | | Y | mg/kg | S | SC |
| 0910044-001AMS | WC-1-SED-AN | Arsenic | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-38-2 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Barium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-39-3 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Beryllium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-41-7 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Cadmium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-43-9 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Chromium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-47-3 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Cobalt | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-48-4 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Copper | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-50-8 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Vanadium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-62-2 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Zinc | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-66-6 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Calcium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-70-2 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Selenium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7782-49-2 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Mercury | 10/12/2009 | 12:30 | Sediment | SW7471A | 7439-97-6 | | Y | mg/kg | | SC |
| 0910044-001AMS | WC-1-SED-AN | Cyanide, To | 10/12/2009 | 12:30 | Sediment | SW9012 | 57-12-5 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Aluminum | 10/12/2009 | 12:30 | Sediment | SW6010B | 7429-90-5 | | Y | mg/kg | S | SC |
| 0910044-001AMSD | WC-1-SED-AN | Iron | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-89-6 | | Y | mg/kg | S | SC |
| 0910044-001AMSD | WC-1-SED-AN | Lead | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-92-1 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Magnesium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-95-4 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Manganese | 10/12/2009 | 12:30 | Sediment | SW6010B | 7439-96-5 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Nickel | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-02-0 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Potassium | 10/12/2009 | 12:30 | Sediment | SW6010B | 9/7/7440 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Silver | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-22-4 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Sodium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-23-5 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Thallium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-28-0 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Antimony | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-36-0 | | Y | mg/kg | S | SC |
| 0910044-001AMSD | WC-1-SED-AN | Arsenic | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-38-2 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Barium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-39-3 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Beryllium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-41-7 | | Y | mg/kg | | SC |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-001AMSD | WC-1-SED-AN | Cadmium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-43-9 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Chromium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-47-3 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Cobalt | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-48-4 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Copper | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-50-8 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Vanadium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-62-2 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Zinc | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-66-6 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Calcium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7440-70-2 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Selenium | 10/12/2009 | 12:30 | Sediment | SW6010B | 7782-49-2 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Mercury | 10/12/2009 | 12:30 | Sediment | SW7471A | 7439-97-6 | | Y | mg/kg | | SC |
| 0910044-001AMSD | WC-1-SED-AN | Cyanide, To | 10/12/2009 | 12:30 | Sediment | SW9012 | 57-12-5 | | Y | mg/kg | | SC |
| 0910044-002A | WC-1-SED-B | Percent Moi | 10/12/2009 | 12:35 | Sediment | SM2540G | GIS-210-008 | 50.5 | Y | percent | | TRG |
| 0910044-002A | WC-1-SED-B | Aluminum | 10/12/2009 | 12:35 | Sediment | SW6010B | 7429-90-5 | 14000 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Iron | 10/12/2009 | 12:35 | Sediment | SW6010B | 7439-89-6 | 23000 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Lead | 10/12/2009 | 12:35 | Sediment | SW6010B | 7439-92-1 | 14 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Magnesium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7439-95-4 | 5500 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Manganese | 10/12/2009 | 12:35 | Sediment | SW6010B | 7439-96-5 | 260 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Nickel | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-02-0 | 25 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Potassium | 10/12/2009 | 12:35 | Sediment | SW6010B | 9/7/7440 | 1500 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Silver | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-002A | WC-1-SED-B | Sodium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-23-5 | 190 | Y | mg/kg | J | TRG |
| 0910044-002A | WC-1-SED-B | Thallium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-002A | WC-1-SED-B | Antimony | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-002A | WC-1-SED-B | Arsenic | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-38-2 | 3.3 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Barium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-39-3 | 61 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Beryllium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-41-7 | 0.71 | Y | mg/kg | J | TRG |
| 0910044-002A | WC-1-SED-B | Cadmium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-43-9 | 0.34 | Y | mg/kg | J | TRG |
| 0910044-002A | WC-1-SED-B | Chromium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-47-3 | 21 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Cobalt | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Copper | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-50-8 | 18 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Vanadium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-62-2 | 22 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Zinc | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-66-6 | 79 | Y | mg/kg | | TRG |
| 0910044-002A | WC-1-SED-B | Calcium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7440-70-2 | 3100 | Y | mg/kg | | TRG |

Created on 11/04/2009 13:25

| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-002A | WC-1-SED-B | Selenium | 10/12/2009 | 12:35 | Sediment | SW6010B | 7782-49-2 | 0.53 | Y | mg/kg | J | TRG |
| 0910044-002A | WC-1-SED-B | Mercury | 10/12/2009 | 12:35 | Sediment | SW7471A | 7439-97-6 | 0.036 | Y | mg/kg | J | TRG |
| 0910044-002A | WC-1-SED-B | Cyanide, To | 10/12/2009 | 12:35 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-003A | WC-1-SED-C | Percent Moi | 10/12/2009 | 12:40 | Sediment | SM2540G | GIS-210-008 | 50.6 | Y | percent | | TRG |
| 0910044-003A | WC-1-SED-C | Aluminum | 10/12/2009 | 12:40 | Sediment | SW6010B | 7429-90-5 | 14000 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Iron | 10/12/2009 | 12:40 | Sediment | SW6010B | 7439-89-6 | 24000 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Lead | 10/12/2009 | 12:40 | Sediment | SW6010B | 7439-92-1 | 14 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Magnesium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7439-95-4 | 5600 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Manganese | 10/12/2009 | 12:40 | Sediment | SW6010B | 7439-96-5 | 260 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Nickel | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-02-0 | 26 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Potassium | 10/12/2009 | 12:40 | Sediment | SW6010B | 9/7/7440 | 1500 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Silver | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-003A | WC-1-SED-C | Sodium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-23-5 | 200 | Y | mg/kg | J | TRG |
| 0910044-003A | WC-1-SED-C | Thallium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-003A | WC-1-SED-C | Antimony | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-003A | WC-1-SED-C | Arsenic | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-38-2 | 4.3 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Barium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-39-3 | 51 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Beryllium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-41-7 | 0.71 | Y | mg/kg | J | TRG |
| 0910044-003A | WC-1-SED-C | Cadmium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-43-9 | 0.36 | Y | mg/kg | J | TRG |
| 0910044-003A | WC-1-SED-C | Chromium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-47-3 | 21 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Cobalt | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-48-4 | 13 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Copper | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-50-8 | 18 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Vanadium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-62-2 | 21 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Zinc | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-66-6 | 80 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Calcium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7440-70-2 | 3200 | Y | mg/kg | | TRG |
| 0910044-003A | WC-1-SED-C | Selenium | 10/12/2009 | 12:40 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-003A | WC-1-SED-C | Mercury | 10/12/2009 | 12:40 | Sediment | SW7471A | 7439-97-6 | 0.049 | Y | mg/kg | J | TRG |
| 0910044-003A | WC-1-SED-C | Cyanide, To | 10/12/2009 | 12:40 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-005A | WC-2-SED-A | Percent Moi | 10/12/2009 | 13:25 | Sediment | SM2540G | GIS-210-008 | 72.9 | Y | percent | | TRG |
| 0910044-005A | WC-2-SED-A | Aluminum | 10/12/2009 | 13:25 | Sediment | SW6010B | 7429-90-5 | 14000 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Iron | 10/12/2009 | 13:25 | Sediment | SW6010B | 7439-89-6 | 27000 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Lead | 10/12/2009 | 13:25 | Sediment | SW6010B | 7439-92-1 | 86 | Y | mg/kg | | TRG |

Created on 11/04/2009 13:25

| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-005A | WC-2-SED-A | Magnesium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7439-95-4 | 6600 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Manganese | 10/12/2009 | 13:25 | Sediment | SW6010B | 7439-96-5 | 500 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Nickel | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-02-0 | 30 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Potassium | 10/12/2009 | 13:25 | Sediment | SW6010B | 9/7/7440 | 1400 | Y | mg/kg | J | TRG |
| 0910044-005A | WC-2-SED-A | Silver | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-005A | WC-2-SED-A | Sodium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-23-5 | 150 | Y | mg/kg | J | TRG |
| 0910044-005A | WC-2-SED-A | Thallium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-005A | WC-2-SED-A | Antimony | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-005A | WC-2-SED-A | Arsenic | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-38-2 | 8.8 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Barium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-39-3 | 81 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Beryllium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-41-7 | 0.63 | Y | mg/kg | J | TRG |
| 0910044-005A | WC-2-SED-A | Cadmium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-43-9 | 1.4 | Y | mg/kg | J | TRG |
| 0910044-005A | WC-2-SED-A | Chromium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-47-3 | 84 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Cobalt | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-48-4 | 16 | Y | mg/kg | J | TRG |
| 0910044-005A | WC-2-SED-A | Copper | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-50-8 | 69 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Vanadium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-62-2 | 23 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Zinc | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-66-6 | 210 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Calcium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-70-2 | 6300 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Selenium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-005A | WC-2-SED-A | Mercury | 10/12/2009 | 13:25 | Sediment | SW7471A | 7439-97-6 | 2.6 | Y | mg/kg | | TRG |
| 0910044-005A | WC-2-SED-A | Cyanide, To | 10/12/2009 | 13:25 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-006A | WC-2-SED-B | Percent Moi | 10/12/2009 | 13:30 | Sediment | SM2540G | GIS-210-008 | 51.9 | Y | percent | | TRG |
| 0910044-006A | WC-2-SED-B | Aluminum | 10/12/2009 | 13:30 | Sediment | SW6010B | 7429-90-5 | 18000 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Iron | 10/12/2009 | 13:30 | Sediment | SW6010B | 7439-89-6 | 29000 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Lead | 10/12/2009 | 13:30 | Sediment | SW6010B | 7439-92-1 | 86 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Magnesium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7439-95-4 | 6600 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Manganese | 10/12/2009 | 13:30 | Sediment | SW6010B | 7439-96-5 | 420 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Nickel | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-02-0 | 29 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Potassium | 10/12/2009 | 13:30 | Sediment | SW6010B | 9/7/7440 | 1600 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Silver | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-006A | WC-2-SED-B | Sodium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-23-5 | 150 | Y | mg/kg | J | TRG |
| 0910044-006A | WC-2-SED-B | Thallium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-006A | WC-2-SED-B | Antimony | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-006A | WC-2-SED-B | Arsenic | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-38-2 | 9.6 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Barium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-39-3 | 88 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Beryllium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-41-7 | 0.84 | Y | mg/kg | J | TRG |
| 0910044-006A | WC-2-SED-B | Cadmium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-43-9 | 0.37 | Y | mg/kg | J | TRG |
| 0910044-006A | WC-2-SED-B | Chromium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-47-3 | 36 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Cobalt | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-48-4 | 14 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Copper | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-50-8 | 31 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Vanadium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-62-2 | 24 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Zinc | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-66-6 | 94 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Calcium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7440-70-2 | 3600 | Y | mg/kg | | TRG |
| 0910044-006A | WC-2-SED-B | Selenium | 10/12/2009 | 13:30 | Sediment | SW6010B | 7782-49-2 | 0.58 | Y | mg/kg | J | TRG |
| 0910044-006A | WC-2-SED-B | Mercury | 10/12/2009 | 13:30 | Sediment | SW7471A | 7439-97-6 | 0.12 | Y | mg/kg | J | TRG |
| 0910044-006A | WC-2-SED-B | Cyanide, To | 10/12/2009 | 13:30 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-007A | WC-2-SED-C | Percent Moi | 10/12/2009 | 13:35 | Sediment | SM2540G | GIS-210-008 | 54.4 | Y | percent | | TRG |
| 0910044-007A | WC-2-SED-C | Aluminum | 10/12/2009 | 13:35 | Sediment | SW6010B | 7429-90-5 | 15000 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Iron | 10/12/2009 | 13:35 | Sediment | SW6010B | 7439-89-6 | 31000 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Lead | 10/12/2009 | 13:35 | Sediment | SW6010B | 7439-92-1 | 15 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Magnesium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7439-95-4 | 6100 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Manganese | 10/12/2009 | 13:35 | Sediment | SW6010B | 7439-96-5 | 380 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Nickel | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-02-0 | 29 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Potassium | 10/12/2009 | 13:35 | Sediment | SW6010B | 9/7/7440 | 1800 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Silver | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-007A | WC-2-SED-C | Sodium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-23-5 | 160 | Y | mg/kg | J | TRG |
| 0910044-007A | WC-2-SED-C | Thallium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-007A | WC-2-SED-C | Antimony | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-007A | WC-2-SED-C | Arsenic | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-38-2 | 4.5 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Barium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-39-3 | 59 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Beryllium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-41-7 | 0.73 | Y | mg/kg | J | TRG |
| 0910044-007A | WC-2-SED-C | Cadmium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-43-9 | 0.38 | Y | mg/kg | J | TRG |
| 0910044-007A | WC-2-SED-C | Chromium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-47-3 | 23 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Cobalt | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-48-4 | 13 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-007A | WC-2-SED-C | Copper | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-50-8 | 19 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Vanadium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-62-2 | 22 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Zinc | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-66-6 | 87 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Calcium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7440-70-2 | 3000 | Y | mg/kg | | TRG |
| 0910044-007A | WC-2-SED-C | Selenium | 10/12/2009 | 13:35 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-007A | WC-2-SED-C | Mercury | 10/12/2009 | 13:35 | Sediment | SW7471A | 7439-97-6 | 0.039 | Y | mg/kg | J | TRG |
| 0910044-007A | WC-2-SED-C | Cyanide, To | 10/12/2009 | 13:35 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-008A | WC-3-SED-A | Percent Moi | 10/12/2009 | 13:45 | Sediment | SM2540G | GIS-210-008 | 69.1 | Y | percent | | TRG |
| 0910044-008A | WC-3-SED-A | Aluminum | 10/12/2009 | 13:45 | Sediment | SW6010B | 7429-90-5 | 12000 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Iron | 10/12/2009 | 13:45 | Sediment | SW6010B | 7439-89-6 | 25000 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Lead | 10/12/2009 | 13:45 | Sediment | SW6010B | 7439-92-1 | 110 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Magnesium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7439-95-4 | 6400 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Manganese | 10/12/2009 | 13:45 | Sediment | SW6010B | 7439-96-5 | 430 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Nickel | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-02-0 | 38 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Potassium | 10/12/2009 | 13:45 | Sediment | SW6010B | 9/7/7440 | 1100 | Y | mg/kg | J | TRG |
| 0910044-008A | WC-3-SED-A | Silver | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-008A | WC-3-SED-A | Sodium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-23-5 | 150 | Y | mg/kg | J | TRG |
| 0910044-008A | WC-3-SED-A | Thallium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-008A | WC-3-SED-A | Antimony | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-008A | WC-3-SED-A | Arsenic | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-38-2 | 6.7 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Barium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-39-3 | 67 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Beryllium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-41-7 | 0.55 | Y | mg/kg | J | TRG |
| 0910044-008A | WC-3-SED-A | Cadmium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-43-9 | 3.7 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Chromium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-47-3 | 62 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Cobalt | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-48-4 | 18 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Copper | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-50-8 | 88 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Vanadium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-62-2 | 26 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Zinc | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-66-6 | 420 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Calcium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-70-2 | 6400 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Selenium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-008A | WC-3-SED-A | Mercury | 10/12/2009 | 13:45 | Sediment | SW7471A | 7439-97-6 | 1.5 | Y | mg/kg | | TRG |
| 0910044-008A | WC-3-SED-A | Cyanide, To | 10/12/2009 | 13:45 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-009A | WC-3-SED-B | Percent Moi | 10/12/2009 | 13:50 | Sediment | SM2540G | GIS-210-008 | 51.9 | Y | percent | | TRG |
| 0910044-009A | WC-3-SED-B | Aluminum | 10/12/2009 | 13:50 | Sediment | SW6010B | 7429-90-5 | 12000 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Iron | 10/12/2009 | 13:50 | Sediment | SW6010B | 7439-89-6 | 23000 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Lead | 10/12/2009 | 13:50 | Sediment | SW6010B | 7439-92-1 | 300 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Magnesium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7439-95-4 | 5400 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Manganese | 10/12/2009 | 13:50 | Sediment | SW6010B | 7439-96-5 | 320 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Nickel | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-02-0 | 27 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Potassium | 10/12/2009 | 13:50 | Sediment | SW6010B | 9/7/7440 | 1100 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Silver | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-009A | WC-3-SED-B | Sodium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-23-5 | 130 | Y | mg/kg | J | TRG |
| 0910044-009A | WC-3-SED-B | Thallium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-009A | WC-3-SED-B | Antimony | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-36-0 | 5.1 | Y | mg/kg | J | TRG |
| 0910044-009A | WC-3-SED-B | Arsenic | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-38-2 | 26 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Barium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-39-3 | 63 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Beryllium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-41-7 | 0.55 | Y | mg/kg | J | TRG |
| 0910044-009A | WC-3-SED-B | Cadmium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-43-9 | 5.9 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Chromium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-47-3 | 780 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Cobalt | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-48-4 | 13 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Copper | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-50-8 | 140 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Vanadium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-62-2 | 20 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Zinc | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-66-6 | 590 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Calcium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7440-70-2 | 4500 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Selenium | 10/12/2009 | 13:50 | Sediment | SW6010B | 7782-49-2 | 0.83 | Y | mg/kg | J | TRG |
| 0910044-009A | WC-3-SED-B | Mercury | 10/12/2009 | 13:50 | Sediment | SW7471A | 7439-97-6 | 16 | Y | mg/kg | E | TRG |
| 0910044-009A | WC-3-SED-B | Mercury | 10/12/2009 | 13:50 | Sediment | SW7471A | 7439-97-6 | 56 | Y | mg/kg | | TRG |
| 0910044-009A | WC-3-SED-B | Cyanide, To | 10/12/2009 | 13:50 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-010A | WC-3-SED-C | Percent Moi | 10/12/2009 | 13:55 | Sediment | SM2540G | GIS-210-008 | 49.1 | Y | percent | | TRG |
| 0910044-010A | WC-3-SED-C | Aluminum | 10/12/2009 | 13:55 | Sediment | SW6010B | 7429-90-5 | 15000 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Iron | 10/12/2009 | 13:55 | Sediment | SW6010B | 7439-89-6 | 24000 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Lead | 10/12/2009 | 13:55 | Sediment | SW6010B | 7439-92-1 | 140 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Magnesium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7439-95-4 | 5800 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Manganese | 10/12/2009 | 13:55 | Sediment | SW6010B | 7439-96-5 | 310 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-010A | WC-3-SED-C | Nickel | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-02-0 | 23 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Potassium | 10/12/2009 | 13:55 | Sediment | SW6010B | 9/7/7440 | 1100 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Silver | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-010A | WC-3-SED-C | Sodium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-23-5 | 150 | Y | mg/kg | J | TRG |
| 0910044-010A | WC-3-SED-C | Thallium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-010A | WC-3-SED-C | Antimony | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-010A | WC-3-SED-C | Arsenic | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-38-2 | 31 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Barium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-39-3 | 65 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Beryllium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-41-7 | 0.59 | Y | mg/kg | J | TRG |
| 0910044-010A | WC-3-SED-C | Cadmium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-43-9 | 0.27 | Y | mg/kg | J | TRG |
| 0910044-010A | WC-3-SED-C | Chromium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-47-3 | 160 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Cobalt | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Copper | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-50-8 | 77 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Vanadium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-62-2 | 17 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Zinc | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-66-6 | 83 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Calcium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7440-70-2 | 3100 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Selenium | 10/12/2009 | 13:55 | Sediment | SW6010B | 7782-49-2 | 0.64 | Y | mg/kg | J | TRG |
| 0910044-010A | WC-3-SED-C | Mercury | 10/12/2009 | 13:55 | Sediment | SW7471A | 7439-97-6 | 2.3 | Y | mg/kg | | TRG |
| 0910044-010A | WC-3-SED-C | Cyanide, To | 10/12/2009 | 13:55 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-012A | WC-4-SED-A | Percent Moi | 10/12/2009 | 14:10 | Sediment | SM2540G | GIS-210-008 | 22.1 | Y | percent | | TRG |
| 0910044-012A | WC-4-SED-A | Aluminum | 10/12/2009 | 14:10 | Sediment | SW6010B | 7429-90-5 | 9500 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Iron | 10/12/2009 | 14:10 | Sediment | SW6010B | 7439-89-6 | 22000 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Lead | 10/12/2009 | 14:10 | Sediment | SW6010B | 7439-92-1 | 9.2 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Magnesium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7439-95-4 | 5000 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Manganese | 10/12/2009 | 14:10 | Sediment | SW6010B | 7439-96-5 | 250 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Nickel | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-02-0 | 18 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Potassium | 10/12/2009 | 14:10 | Sediment | SW6010B | 9/7/7440 | 710 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Silver | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-012A | WC-4-SED-A | Sodium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-23-5 | 51 | Y | mg/kg | J | TRG |
| 0910044-012A | WC-4-SED-A | Thallium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-012A | WC-4-SED-A | Antimony | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-012A | WC-4-SED-A | Arsenic | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-38-2 | 2.4 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-012A | WC-4-SED-A | Barium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-39-3 | 24 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Beryllium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-41-7 | 0.26 | Y | mg/kg | J | TRG |
| 0910044-012A | WC-4-SED-A | Cadmium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-43-9 | 0.22 | Y | mg/kg | J | TRG |
| 0910044-012A | WC-4-SED-A | Chromium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-47-3 | 13 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Cobalt | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-48-4 | 8.9 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Copper | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-50-8 | 9.4 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Vanadium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-62-2 | 10 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Zinc | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-66-6 | 64 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Calcium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7440-70-2 | 1600 | Y | mg/kg | | TRG |
| 0910044-012A | WC-4-SED-A | Selenium | 10/12/2009 | 14:10 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-012A | WC-4-SED-A | Mercury | 10/12/2009 | 14:10 | Sediment | SW7471A | 7439-97-6 | 0.066 | Y | mg/kg | J | TRG |
| 0910044-012A | WC-4-SED-A | Cyanide, To | 10/12/2009 | 14:10 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-013A | WC-4-SED-B | Percent Moi | 10/12/2009 | 14:15 | Sediment | SM2540G | GIS-210-008 | 35.2 | Y | percent | | TRG |
| 0910044-013A | WC-4-SED-B | Aluminum | 10/12/2009 | 14:15 | Sediment | SW6010B | 7429-90-5 | 11000 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Iron | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-89-6 | 24000 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Lead | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-92-1 | 7 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Magnesium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-95-4 | 5800 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Manganese | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-96-5 | 260 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Nickel | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-02-0 | 20 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Potassium | 10/12/2009 | 14:15 | Sediment | SW6010B | 9/7/7440 | 900 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Silver | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-013A | WC-4-SED-B | Sodium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-23-5 | 82 | Y | mg/kg | J | TRG |
| 0910044-013A | WC-4-SED-B | Thallium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-013A | WC-4-SED-B | Antimony | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-013A | WC-4-SED-B | Arsenic | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-38-2 | 1.8 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Barium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-39-3 | 30 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Beryllium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-41-7 | 0.34 | Y | mg/kg | J | TRG |
| 0910044-013A | WC-4-SED-B | Cadmium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-43-9 | 0.22 | Y | mg/kg | J | TRG |
| 0910044-013A | WC-4-SED-B | Chromium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-47-3 | 13 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Cobalt | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-48-4 | 9.9 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Copper | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-50-8 | 9 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Vanadium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-62-2 | 12 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-013A | WC-4-SED-B | Zinc | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-66-6 | 63 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Calcium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-70-2 | 1500 | Y | mg/kg | | TRG |
| 0910044-013A | WC-4-SED-B | Selenium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7782-49-2 | 0.4 | Y | mg/kg | J | TRG |
| 0910044-013A | WC-4-SED-B | Mercury | 10/12/2009 | 14:15 | Sediment | SW7471A | 7439-97-6 | 0.016 | Y | mg/kg | J | TRG |
| 0910044-013A | WC-4-SED-B | Cyanide, To | 10/12/2009 | 14:15 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-013ADUP | WC-4-SED-BL | Percent Moi | 10/12/2009 | 14:15 | Sediment | SM2540G | GIS-210-008 | 34 | Y | percent | | TRG |
| 0910044-013AMS | WC-4-SED-BM | Aluminum | 10/12/2009 | 14:15 | Sediment | SW6010B | 7429-90-5 | | Y | mg/kg | S | SC |
| 0910044-013AMS | WC-4-SED-BM | Iron | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-89-6 | | Y | mg/kg | S | SC |
| 0910044-013AMS | WC-4-SED-BM | Lead | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-92-1 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Magnesium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-95-4 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Manganese | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-96-5 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Nickel | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-02-0 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Potassium | 10/12/2009 | 14:15 | Sediment | SW6010B | 9/7/7440 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Silver | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-22-4 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Sodium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-23-5 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Thallium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-28-0 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Antimony | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-36-0 | | Y | mg/kg | S | SC |
| 0910044-013AMS | WC-4-SED-BM | Arsenic | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-38-2 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Barium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-39-3 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Beryllium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-41-7 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Cadmium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-43-9 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Chromium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-47-3 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Cobalt | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-48-4 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Copper | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-50-8 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Vanadium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-62-2 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Zinc | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-66-6 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Calcium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-70-2 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Selenium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7782-49-2 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Mercury | 10/12/2009 | 14:15 | Sediment | SW7471A | 7439-97-6 | | Y | mg/kg | | SC |
| 0910044-013AMS | WC-4-SED-BM | Cyanide, To | 10/12/2009 | 14:15 | Sediment | SW9012 | 57-12-5 | | Y | mg/kg | S | SC |
| 0910044-013AMSD | WC-4-SED-BM | Aluminum | 10/12/2009 | 14:15 | Sediment | SW6010B | 7429-90-5 | | Y | mg/kg | S | SC |
| 0910044-013AMSD | WC-4-SED-BM | Iron | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-89-6 | | Y | mg/kg | S | SC |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-013AMSD | WC-4-SED-BN | Lead | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-92-1 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Magnesium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-95-4 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Manganese | 10/12/2009 | 14:15 | Sediment | SW6010B | 7439-96-5 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Nickel | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-02-0 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Potassium | 10/12/2009 | 14:15 | Sediment | SW6010B | 9/7/7440 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Silver | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-22-4 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Sodium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-23-5 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Thallium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-28-0 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Antimony | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-36-0 | | Y | mg/kg | S | SC |
| 0910044-013AMSD | WC-4-SED-BN | Arsenic | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-38-2 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Barium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-39-3 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Beryllium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-41-7 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Cadmium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-43-9 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Chromium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-47-3 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Cobalt | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-48-4 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Copper | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-50-8 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Vanadium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-62-2 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Zinc | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-66-6 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Calcium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7440-70-2 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Selenium | 10/12/2009 | 14:15 | Sediment | SW6010B | 7782-49-2 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Mercury | 10/12/2009 | 14:15 | Sediment | SW7471A | 7439-97-6 | | Y | mg/kg | | SC |
| 0910044-013AMSD | WC-4-SED-BN | Cyanide, To | 10/12/2009 | 14:15 | Sediment | SW9012 | 57-12-5 | | Y | mg/kg | S | SC |
| 0910044-014A | WC-4-SED-C | Percent Moi | 10/12/2009 | 14:20 | Sediment | SM2540G | GIS-210-008 | 28.1 | Y | percent | | TRG |
| 0910044-014A | WC-4-SED-C | Aluminum | 10/12/2009 | 14:20 | Sediment | SW6010B | 7429-90-5 | 11000 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Iron | 10/12/2009 | 14:20 | Sediment | SW6010B | 7439-89-6 | 25000 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Lead | 10/12/2009 | 14:20 | Sediment | SW6010B | 7439-92-1 | 5.5 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Magnesium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7439-95-4 | 6000 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Manganese | 10/12/2009 | 14:20 | Sediment | SW6010B | 7439-96-5 | 260 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Nickel | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-02-0 | 21 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Potassium | 10/12/2009 | 14:20 | Sediment | SW6010B | 9/7/7440 | 870 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Silver | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-014A | WC-4-SED-C | Sodium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-23-5 | 91 | Y | mg/kg | J | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-014A | WC-4-SED-C | Thallium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-014A | WC-4-SED-C | Antimony | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-014A | WC-4-SED-C | Arsenic | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-38-2 | 1.6 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Barium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-39-3 | 28 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Beryllium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-41-7 | 0.31 | Y | mg/kg | J | TRG |
| 0910044-014A | WC-4-SED-C | Cadmium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-43-9 | 0.2 | Y | mg/kg | J | TRG |
| 0910044-014A | WC-4-SED-C | Chromium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-47-3 | 13 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Cobalt | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-48-4 | 9.9 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Copper | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-50-8 | 7.9 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Vanadium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-62-2 | 12 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Zinc | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-66-6 | 64 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Calcium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7440-70-2 | 1100 | Y | mg/kg | | TRG |
| 0910044-014A | WC-4-SED-C | Selenium | 10/12/2009 | 14:20 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-014A | WC-4-SED-C | Mercury | 10/12/2009 | 14:20 | Sediment | SW7471A | 7439-97-6 | | N | mg/kg | U | TRG |
| 0910044-014A | WC-4-SED-C | Cyanide, To | 10/12/2009 | 14:20 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-015A | WC-5-SED-A | Percent Moi | 10/12/2009 | 14:25 | Sediment | SM2540G | GIS-210-008 | 37.8 | Y | percent | | TRG |
| 0910044-015A | WC-5-SED-A | Aluminum | 10/12/2009 | 14:25 | Sediment | SW6010B | 7429-90-5 | 13000 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Iron | 10/12/2009 | 14:25 | Sediment | SW6010B | 7439-89-6 | 27000 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Lead | 10/12/2009 | 14:25 | Sediment | SW6010B | 7439-92-1 | 110 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Magnesium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7439-95-4 | 6200 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Manganese | 10/12/2009 | 14:25 | Sediment | SW6010B | 7439-96-5 | 300 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Nickel | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-02-0 | 23 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Potassium | 10/12/2009 | 14:25 | Sediment | SW6010B | 9/7/7440 | 900 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Silver | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-015A | WC-5-SED-A | Sodium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-23-5 | 62 | Y | mg/kg | J | TRG |
| 0910044-015A | WC-5-SED-A | Thallium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-015A | WC-5-SED-A | Antimony | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-36-0 | 2.5 | Y | mg/kg | J | TRG |
| 0910044-015A | WC-5-SED-A | Arsenic | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-38-2 | 8.2 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Barium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-39-3 | 50 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Beryllium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-41-7 | 0.39 | Y | mg/kg | J | TRG |
| 0910044-015A | WC-5-SED-A | Cadmium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-43-9 | 1.9 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Chromium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-47-3 | 68 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-015A | WC-5-SED-A | Cobalt | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Copper | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-50-8 | 30 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Vanadium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-62-2 | 14 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Zinc | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-66-6 | 220 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Calcium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7440-70-2 | 1700 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Selenium | 10/12/2009 | 14:25 | Sediment | SW6010B | 7782-49-2 | 0.5 | Y | mg/kg | J | TRG |
| 0910044-015A | WC-5-SED-A | Mercury | 10/12/2009 | 14:25 | Sediment | SW7471A | 7439-97-6 | 1.6 | Y | mg/kg | | TRG |
| 0910044-015A | WC-5-SED-A | Cyanide, To | 10/12/2009 | 14:25 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-016A | WC-5-SED-B | Percent Moi | 10/12/2009 | 14:30 | Sediment | SM2540G | GIS-210-008 | 42.6 | Y | percent | | TRG |
| 0910044-016A | WC-5-SED-B | Aluminum | 10/12/2009 | 14:30 | Sediment | SW6010B | 7429-90-5 | 14000 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Iron | 10/12/2009 | 14:30 | Sediment | SW6010B | 7439-89-6 | 27000 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Lead | 10/12/2009 | 14:30 | Sediment | SW6010B | 7439-92-1 | 130 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Magnesium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7439-95-4 | 5800 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Manganese | 10/12/2009 | 14:30 | Sediment | SW6010B | 7439-96-5 | 330 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Nickel | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-02-0 | 23 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Potassium | 10/12/2009 | 14:30 | Sediment | SW6010B | 9/7/7440 | 1100 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Silver | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-016A | WC-5-SED-B | Sodium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-23-5 | 85 | Y | mg/kg | J | TRG |
| 0910044-016A | WC-5-SED-B | Thallium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-016A | WC-5-SED-B | Antimony | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-36-0 | 21 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Arsenic | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-38-2 | 8.9 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Barium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-39-3 | 67 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Beryllium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-41-7 | 0.54 | Y | mg/kg | J | TRG |
| 0910044-016A | WC-5-SED-B | Cadmium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-43-9 | 4.7 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Chromium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-47-3 | 200 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Cobalt | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Copper | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-50-8 | 65 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Vanadium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-62-2 | 16 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Zinc | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-66-6 | 480 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Calcium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7440-70-2 | 2900 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Selenium | 10/12/2009 | 14:30 | Sediment | SW6010B | 7782-49-2 | 0.55 | Y | mg/kg | J | TRG |
| 0910044-016A | WC-5-SED-B | Mercury | 10/12/2009 | 14:30 | Sediment | SW7471A | 7439-97-6 | 5.3 | Y | mg/kg | E | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-016A | WC-5-SED-B | Mercury | 10/12/2009 | 14:30 | Sediment | SW7471A | 7439-97-6 | 6.8 | Y | mg/kg | | TRG |
| 0910044-016A | WC-5-SED-B | Cyanide, To | 10/12/2009 | 14:30 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-017A | WC-5-SED-C | Percent Moi | 10/12/2009 | 14:35 | Sediment | SM2540G | GIS-210-008 | 53.5 | Y | percent | | TRG |
| 0910044-017A | WC-5-SED-C | Aluminum | 10/12/2009 | 14:35 | Sediment | SW6010B | 7429-90-5 | 15000 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Iron | 10/12/2009 | 14:35 | Sediment | SW6010B | 7439-89-6 | 28000 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Lead | 10/12/2009 | 14:35 | Sediment | SW6010B | 7439-92-1 | 330 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Magnesium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7439-95-4 | 5800 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Manganese | 10/12/2009 | 14:35 | Sediment | SW6010B | 7439-96-5 | 410 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Nickel | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-02-0 | 25 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Potassium | 10/12/2009 | 14:35 | Sediment | SW6010B | 9/7/7440 | 1300 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Silver | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-017A | WC-5-SED-C | Sodium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-23-5 | 110 | Y | mg/kg | J | TRG |
| 0910044-017A | WC-5-SED-C | Thallium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-017A | WC-5-SED-C | Antimony | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-36-0 | 34 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Arsenic | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-38-2 | 50 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Barium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-39-3 | 86 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Beryllium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-41-7 | 0.68 | Y | mg/kg | J | TRG |
| 0910044-017A | WC-5-SED-C | Cadmium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-43-9 | 14 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Chromium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-47-3 | 1100 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Cobalt | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-48-4 | 12 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Copper | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-50-8 | 200 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Vanadium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-62-2 | 19 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Zinc | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-66-6 | 1300 | Y | mg/kg | E | TRG |
| 0910044-017A | WC-5-SED-C | Zinc | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-66-6 | 1400 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Calcium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7440-70-2 | 4000 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Selenium | 10/12/2009 | 14:35 | Sediment | SW6010B | 7782-49-2 | 1.5 | Y | mg/kg | J | TRG |
| 0910044-017A | WC-5-SED-C | Mercury | 10/12/2009 | 14:35 | Sediment | SW7471A | 7439-97-6 | 16 | Y | mg/kg | E | TRG |
| 0910044-017A | WC-5-SED-C | Mercury | 10/12/2009 | 14:35 | Sediment | SW7471A | 7439-97-6 | 47 | Y | mg/kg | | TRG |
| 0910044-017A | WC-5-SED-C | Cyanide, To | 10/12/2009 | 14:35 | Sediment | SW9012 | 57-12-5 | 0.46 | Y | mg/kg | J | TRG |
| 0910044-018A | WC-6-SED-A | Percent Moi | 10/12/2009 | 14:45 | Sediment | SM2540G | GIS-210-008 | 74.2 | Y | percent | | TRG |
| 0910044-018A | WC-6-SED-A | Aluminum | 10/12/2009 | 14:45 | Sediment | SW6010B | 7429-90-5 | 15000 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Iron | 10/12/2009 | 14:45 | Sediment | SW6010B | 7439-89-6 | 25000 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-018A | WC-6-SED-A | Lead | 10/12/2009 | 14:45 | Sediment | SW6010B | 7439-92-1 | 210 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Magnesium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7439-95-4 | 6300 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Manganese | 10/12/2009 | 14:45 | Sediment | SW6010B | 7439-96-5 | 350 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Nickel | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-02-0 | 35 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Potassium | 10/12/2009 | 14:45 | Sediment | SW6010B | 9/7/7440 | 1400 | Y | mg/kg | J | TRG |
| 0910044-018A | WC-6-SED-A | Silver | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-018A | WC-6-SED-A | Sodium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-23-5 | 180 | Y | mg/kg | J | TRG |
| 0910044-018A | WC-6-SED-A | Thallium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-018A | WC-6-SED-A | Antimony | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-018A | WC-6-SED-A | Arsenic | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-38-2 | 5 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Barium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-39-3 | 76 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Beryllium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-41-7 | 0.63 | Y | mg/kg | J | TRG |
| 0910044-018A | WC-6-SED-A | Cadmium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-43-9 | 3.6 | Y | mg/kg | J | TRG |
| 0910044-018A | WC-6-SED-A | Chromium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-47-3 | 180 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Cobalt | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-48-4 | 12 | Y | mg/kg | J | TRG |
| 0910044-018A | WC-6-SED-A | Copper | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-50-8 | 120 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Vanadium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-62-2 | 20 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Zinc | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-66-6 | 410 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Calcium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-70-2 | 6300 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Selenium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7782-49-2 | 1.4 | Y | mg/kg | J | TRG |
| 0910044-018A | WC-6-SED-A | Mercury | 10/12/2009 | 14:45 | Sediment | SW7471A | 7439-97-6 | 4.8 | Y | mg/kg | | TRG |
| 0910044-018A | WC-6-SED-A | Cyanide, To | 10/12/2009 | 14:45 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-019A | WC-6-SED-B | Percent Moi | 10/12/2009 | 14:50 | Sediment | SM2540G | GIS-210-008 | 66.2 | Y | percent | | TRG |
| 0910044-019A | WC-6-SED-B | Aluminum | 10/12/2009 | 14:50 | Sediment | SW6010B | 7429-90-5 | 18000 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Iron | 10/12/2009 | 14:50 | Sediment | SW6010B | 7439-89-6 | 31000 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Lead | 10/12/2009 | 14:50 | Sediment | SW6010B | 7439-92-1 | 370 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Magnesium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7439-95-4 | 6000 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Manganese | 10/12/2009 | 14:50 | Sediment | SW6010B | 7439-96-5 | 350 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Nickel | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-02-0 | 28 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Potassium | 10/12/2009 | 14:50 | Sediment | SW6010B | 9/7/7440 | 1400 | Y | mg/kg | J | TRG |
| 0910044-019A | WC-6-SED-B | Silver | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-019A | WC-6-SED-B | Sodium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-23-5 | 170 | Y | mg/kg | J | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-019A | WC-6-SED-B | Thallium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-019A | WC-6-SED-B | Antimony | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-36-0 | 35 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Arsenic | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-38-2 | 33 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Barium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-39-3 | 170 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Beryllium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-41-7 | 0.83 | Y | mg/kg | J | TRG |
| 0910044-019A | WC-6-SED-B | Cadmium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-43-9 | 14 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Chromium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-47-3 | 1100 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Cobalt | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-48-4 | 13 | Y | mg/kg | J | TRG |
| 0910044-019A | WC-6-SED-B | Copper | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-50-8 | 230 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Vanadium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-62-2 | 22 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Zinc | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-66-6 | 1300 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Calcium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7440-70-2 | 4400 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Selenium | 10/12/2009 | 14:50 | Sediment | SW6010B | 7782-49-2 | 2.5 | Y | mg/kg | J | TRG |
| 0910044-019A | WC-6-SED-B | Mercury | 10/12/2009 | 14:50 | Sediment | SW7471A | 7439-97-6 | 13 | Y | mg/kg | E | TRG |
| 0910044-019A | WC-6-SED-B | Mercury | 10/12/2009 | 14:50 | Sediment | SW7471A | 7439-97-6 | 20 | Y | mg/kg | | TRG |
| 0910044-019A | WC-6-SED-B | Cyanide, To | 10/12/2009 | 14:50 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-020A | WC-6-SED-C | Percent Moi | 10/12/2009 | 14:55 | Sediment | SM2540G | GIS-210-008 | 57.9 | Y | percent | | TRG |
| 0910044-020A | WC-6-SED-C | Aluminum | 10/12/2009 | 14:55 | Sediment | SW6010B | 7429-90-5 | 16000 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Iron | 10/12/2009 | 14:55 | Sediment | SW6010B | 7439-89-6 | 25000 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Lead | 10/12/2009 | 14:55 | Sediment | SW6010B | 7439-92-1 | 340 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Magnesium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7439-95-4 | 5400 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Manganese | 10/12/2009 | 14:55 | Sediment | SW6010B | 7439-96-5 | 320 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Nickel | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-02-0 | 24 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Potassium | 10/12/2009 | 14:55 | Sediment | SW6010B | 9/7/7440 | 1100 | Y | mg/kg | J | TRG |
| 0910044-020A | WC-6-SED-C | Silver | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-020A | WC-6-SED-C | Sodium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-23-5 | 140 | Y | mg/kg | J | TRG |
| 0910044-020A | WC-6-SED-C | Thallium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-020A | WC-6-SED-C | Antimony | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-36-0 | 25 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Arsenic | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-38-2 | 46 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Barium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-39-3 | 100 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Beryllium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-41-7 | 0.68 | Y | mg/kg | J | TRG |
| 0910044-020A | WC-6-SED-C | Cadmium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-43-9 | 7.5 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-020A | WC-6-SED-C | Chromium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-47-3 | 2000 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Cobalt | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | J | TRG |
| 0910044-020A | WC-6-SED-C | Copper | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-50-8 | 200 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Vanadium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-62-2 | 18 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Zinc | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-66-6 | 810 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Calcium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7440-70-2 | 4100 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Selenium | 10/12/2009 | 14:55 | Sediment | SW6010B | 7782-49-2 | 1.4 | Y | mg/kg | J | TRG |
| 0910044-020A | WC-6-SED-C | Mercury | 10/12/2009 | 14:55 | Sediment | SW7471A | 7439-97-6 | 13 | Y | mg/kg | | TRG |
| 0910044-020A | WC-6-SED-C | Mercury | 10/12/2009 | 14:55 | Sediment | SW7471A | 7439-97-6 | 9.1 | Y | mg/kg | E | TRG |
| 0910044-020A | WC-6-SED-C | Cyanide, To | 10/12/2009 | 14:55 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-021A | WC-7-SED-A | Percent Moi | 10/12/2009 | 15:20 | Sediment | SM2540G | GIS-210-008 | 76.2 | Y | percent | | TRG |
| 0910044-021A | WC-7-SED-A | Aluminum | 10/12/2009 | 15:20 | Sediment | SW6010B | 7429-90-5 | 14000 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Iron | 10/12/2009 | 15:20 | Sediment | SW6010B | 7439-89-6 | 26000 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Lead | 10/12/2009 | 15:20 | Sediment | SW6010B | 7439-92-1 | 210 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Magnesium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7439-95-4 | 6200 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Manganese | 10/12/2009 | 15:20 | Sediment | SW6010B | 7439-96-5 | 390 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Nickel | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-02-0 | 34 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Potassium | 10/12/2009 | 15:20 | Sediment | SW6010B | 9/7/7440 | 1200 | Y | mg/kg | J | TRG |
| 0910044-021A | WC-7-SED-A | Silver | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-021A | WC-7-SED-A | Sodium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-23-5 | 180 | Y | mg/kg | J | TRG |
| 0910044-021A | WC-7-SED-A | Thallium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-021A | WC-7-SED-A | Antimony | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-36-0 | 2 | Y | mg/kg | J | TRG |
| 0910044-021A | WC-7-SED-A | Arsenic | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-38-2 | 7.3 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Barium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-39-3 | 71 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Beryllium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-41-7 | 0.61 | Y | mg/kg | J | TRG |
| 0910044-021A | WC-7-SED-A | Cadmium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-43-9 | 4.9 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Chromium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-47-3 | 310 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Cobalt | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-48-4 | 13 | Y | mg/kg | J | TRG |
| 0910044-021A | WC-7-SED-A | Copper | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-50-8 | 140 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Vanadium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-62-2 | 17 | Y | mg/kg | J | TRG |
| 0910044-021A | WC-7-SED-A | Zinc | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-66-6 | 550 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Calcium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7440-70-2 | 6300 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-021A | WC-7-SED-A | Selenium | 10/12/2009 | 15:20 | Sediment | SW6010B | 7782-49-2 | 1.5 | Y | mg/kg | J | TRG |
| 0910044-021A | WC-7-SED-A | Mercury | 10/12/2009 | 15:20 | Sediment | SW7471A | 7439-97-6 | 6.9 | Y | mg/kg | | TRG |
| 0910044-021A | WC-7-SED-A | Cyanide, To | 10/12/2009 | 15:20 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-022A | WC-7-SED-B | Percent Moi | 10/12/2009 | 15:25 | Sediment | SM2540G | GIS-210-008 | 73.9 | Y | percent | | TRG |
| 0910044-022A | WC-7-SED-B | Aluminum | 10/12/2009 | 15:25 | Sediment | SW6010B | 7429-90-5 | 17000 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Iron | 10/12/2009 | 15:25 | Sediment | SW6010B | 7439-89-6 | 30000 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Lead | 10/12/2009 | 15:25 | Sediment | SW6010B | 7439-92-1 | 340 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Magnesium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7439-95-4 | 6800 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Manganese | 10/12/2009 | 15:25 | Sediment | SW6010B | 7439-96-5 | 410 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Nickel | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-02-0 | 43 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Potassium | 10/12/2009 | 15:25 | Sediment | SW6010B | 9/7/7440 | 1400 | Y | mg/kg | J | TRG |
| 0910044-022A | WC-7-SED-B | Silver | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-022A | WC-7-SED-B | Sodium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-23-5 | 190 | Y | mg/kg | J | TRG |
| 0910044-022A | WC-7-SED-B | Thallium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-022A | WC-7-SED-B | Antimony | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-36-0 | 34 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Arsenic | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-38-2 | 23 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Barium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-39-3 | 87 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Beryllium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-41-7 | 0.76 | Y | mg/kg | J | TRG |
| 0910044-022A | WC-7-SED-B | Cadmium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-43-9 | 11 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Chromium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-47-3 | 840 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Cobalt | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-48-4 | 15 | Y | mg/kg | J | TRG |
| 0910044-022A | WC-7-SED-B | Copper | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-50-8 | 230 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Vanadium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-62-2 | 27 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Zinc | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-66-6 | 990 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Calcium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7440-70-2 | 6000 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Selenium | 10/12/2009 | 15:25 | Sediment | SW6010B | 7782-49-2 | 1.7 | Y | mg/kg | J | TRG |
| 0910044-022A | WC-7-SED-B | Mercury | 10/12/2009 | 15:25 | Sediment | SW7471A | 7439-97-6 | 25 | Y | mg/kg | E | TRG |
| 0910044-022A | WC-7-SED-B | Mercury | 10/12/2009 | 15:25 | Sediment | SW7471A | 7439-97-6 | 52 | Y | mg/kg | | TRG |
| 0910044-022A | WC-7-SED-B | Cyanide, To | 10/12/2009 | 15:25 | Sediment | SW9012 | 57-12-5 | 2.9 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Percent Moi | 10/12/2009 | 15:30 | Sediment | SM2540G | GIS-210-008 | 59.5 | Y | percent | | TRG |
| 0910044-023A | WC-7-SED-C | Aluminum | 10/12/2009 | 15:30 | Sediment | SW6010B | 7429-90-5 | 14000 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Iron | 10/12/2009 | 15:30 | Sediment | SW6010B | 7439-89-6 | 21000 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-023A | WC-7-SED-C | Lead | 10/12/2009 | 15:30 | Sediment | SW6010B | 7439-92-1 | 39 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Magnesium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7439-95-4 | 4800 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Manganese | 10/12/2009 | 15:30 | Sediment | SW6010B | 7439-96-5 | 370 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Nickel | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-02-0 | 21 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Potassium | 10/12/2009 | 15:30 | Sediment | SW6010B | 9/7/7440 | 890 | Y | mg/kg | J | TRG |
| 0910044-023A | WC-7-SED-C | Silver | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-023A | WC-7-SED-C | Sodium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-23-5 | 110 | Y | mg/kg | J | TRG |
| 0910044-023A | WC-7-SED-C | Thallium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-023A | WC-7-SED-C | Antimony | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-023A | WC-7-SED-C | Arsenic | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-38-2 | 7.5 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Barium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-39-3 | 84 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Beryllium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-41-7 | 0.62 | Y | mg/kg | J | TRG |
| 0910044-023A | WC-7-SED-C | Cadmium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-43-9 | | N | mg/kg | U | TRG |
| 0910044-023A | WC-7-SED-C | Chromium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-47-3 | 35 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Cobalt | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-48-4 | 8.8 | Y | mg/kg | J | TRG |
| 0910044-023A | WC-7-SED-C | Copper | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-50-8 | 22 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Vanadium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-62-2 | 15 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Zinc | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-66-6 | 71 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Calcium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7440-70-2 | 4300 | Y | mg/kg | | TRG |
| 0910044-023A | WC-7-SED-C | Selenium | 10/12/2009 | 15:30 | Sediment | SW6010B | 7782-49-2 | 1.1 | Y | mg/kg | J | TRG |
| 0910044-023A | WC-7-SED-C | Mercury | 10/12/2009 | 15:30 | Sediment | SW7471A | 7439-97-6 | 0.15 | Y | mg/kg | J | TRG |
| 0910044-023A | WC-7-SED-C | Cyanide, To | 10/12/2009 | 15:30 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-023ADUP | WC-7-SED-Cl | Percent Moi | 10/12/2009 | 15:30 | Sediment | SM2540G | GIS-210-008 | 61.1 | Y | percent | | TRG |
| 0910044-025A | WC-8-SED-A | Percent Moi | 10/12/2009 | 15:55 | Sediment | SM2540G | GIS-210-008 | 50.1 | Y | percent | | TRG |
| 0910044-025A | WC-8-SED-A | Aluminum | 10/12/2009 | 15:55 | Sediment | SW6010B | 7429-90-5 | 15000 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Iron | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-89-6 | 24000 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Lead | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-92-1 | 230 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Magnesium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-95-4 | 5900 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Manganese | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-96-5 | 300 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Nickel | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-02-0 | 25 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Potassium | 10/12/2009 | 15:55 | Sediment | SW6010B | 9/7/7440 | 950 | Y | mg/kg | J | TRG |
| 0910044-025A | WC-8-SED-A | Silver | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-025A | WC-8-SED-A | Sodium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-23-5 | 97 | Y | mg/kg | J | TRG |
| 0910044-025A | WC-8-SED-A | Thallium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-025A | WC-8-SED-A | Antimony | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-36-0 | 15 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Arsenic | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-38-2 | 18 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Barium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-39-3 | 91 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Beryllium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-41-7 | 0.57 | Y | mg/kg | J | TRG |
| 0910044-025A | WC-8-SED-A | Cadmium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-43-9 | 3.9 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Chromium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-47-3 | 250 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Cobalt | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Copper | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-50-8 | 150 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Vanadium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-62-2 | 17 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Zinc | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-66-6 | 560 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Calcium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-70-2 | 2900 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Selenium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7782-49-2 | 0.93 | Y | mg/kg | J | TRG |
| 0910044-025A | WC-8-SED-A | Mercury | 10/12/2009 | 15:55 | Sediment | SW7471A | 7439-97-6 | 12 | Y | mg/kg | | TRG |
| 0910044-025A | WC-8-SED-A | Mercury | 10/12/2009 | 15:55 | Sediment | SW7471A | 7439-97-6 | 8.4 | Y | mg/kg | E | TRG |
| 0910044-025A | WC-8-SED-A | Cyanide, To | 10/12/2009 | 15:55 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-025AMS | WC-8-SED-AM | Aluminum | 10/12/2009 | 15:55 | Sediment | SW6010B | 7429-90-5 | | Y | mg/kg | S | SC |
| 0910044-025AMS | WC-8-SED-AM | Iron | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-89-6 | | Y | mg/kg | S | SC |
| 0910044-025AMS | WC-8-SED-AM | Lead | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-92-1 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Magnesium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-95-4 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Manganese | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-96-5 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Nickel | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-02-0 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Potassium | 10/12/2009 | 15:55 | Sediment | SW6010B | 9/7/7440 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Silver | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-22-4 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Sodium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-23-5 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Thallium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-28-0 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Antimony | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-36-0 | | Y | mg/kg | S | SC |
| 0910044-025AMS | WC-8-SED-AM | Arsenic | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-38-2 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Barium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-39-3 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Beryllium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-41-7 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AM | Cadmium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-43-9 | | Y | mg/kg | | SC |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-025AMS | WC-8-SED-AN | Chromium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-47-3 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AN | Cobalt | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-48-4 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AN | Copper | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-50-8 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AN | Vanadium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-62-2 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AN | Zinc | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-66-6 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AN | Calcium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-70-2 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AN | Selenium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7782-49-2 | | Y | mg/kg | | SC |
| 0910044-025AMS | WC-8-SED-AN | Mercury | 10/12/2009 | 15:55 | Sediment | SW7471A | 7439-97-6 | | Y | mg/kg | E | SC |
| 0910044-025AMS | WC-8-SED-AN | Mercury | 10/12/2009 | 15:55 | Sediment | SW7471A | 7439-97-6 | | Y | mg/kg | S | SC |
| 0910044-025AMS | WC-8-SED-AN | Cyanide, To | 10/12/2009 | 15:55 | Sediment | SW9012 | 57-12-5 | | Y | mg/kg | S | SC |
| 0910044-025AMSD | WC-8-SED-AN | Aluminum | 10/12/2009 | 15:55 | Sediment | SW6010B | 7429-90-5 | | Y | mg/kg | S | SC |
| 0910044-025AMSD | WC-8-SED-AN | Iron | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-89-6 | | Y | mg/kg | S | SC |
| 0910044-025AMSD | WC-8-SED-AN | Lead | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-92-1 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Magnesium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-95-4 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Manganese | 10/12/2009 | 15:55 | Sediment | SW6010B | 7439-96-5 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Nickel | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-02-0 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Potassium | 10/12/2009 | 15:55 | Sediment | SW6010B | 9/7/7440 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Silver | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-22-4 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Sodium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-23-5 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Thallium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-28-0 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Antimony | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-36-0 | | Y | mg/kg | S | SC |
| 0910044-025AMSD | WC-8-SED-AN | Arsenic | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-38-2 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Barium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-39-3 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Beryllium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-41-7 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Cadmium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-43-9 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Chromium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-47-3 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Cobalt | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-48-4 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Copper | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-50-8 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Vanadium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-62-2 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Zinc | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-66-6 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Calcium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7440-70-2 | | Y | mg/kg | | SC |
| 0910044-025AMSD | WC-8-SED-AN | Selenium | 10/12/2009 | 15:55 | Sediment | SW6010B | 7782-49-2 | | Y | mg/kg | | SC |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-025AMSD | WC-8-SED-AI | Mercury | 10/12/2009 | 15:55 | Sediment | SW7471A | 7439-97-6 | | Y | mg/kg | E | SC |
| 0910044-025AMSD | WC-8-SED-AI | Mercury | 10/12/2009 | 15:55 | Sediment | SW7471A | 7439-97-6 | | Y | mg/kg | S | SC |
| 0910044-025AMSD | WC-8-SED-AI | Cyanide, To | 10/12/2009 | 15:55 | Sediment | SW9012 | 57-12-5 | | Y | mg/kg | S | SC |
| 0910044-026A | WC-8-SED-B | Percent Moi | 10/12/2009 | 16:00 | Sediment | SM2540G | GIS-210-008 | 39.5 | Y | percent | | TRG |
| 0910044-026A | WC-8-SED-B | Aluminum | 10/12/2009 | 16:00 | Sediment | SW6010B | 7429-90-5 | 13000 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Iron | 10/12/2009 | 16:00 | Sediment | SW6010B | 7439-89-6 | 22000 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Lead | 10/12/2009 | 16:00 | Sediment | SW6010B | 7439-92-1 | 160 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Magnesium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7439-95-4 | 5600 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Manganese | 10/12/2009 | 16:00 | Sediment | SW6010B | 7439-96-5 | 200 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Nickel | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-02-0 | 22 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Potassium | 10/12/2009 | 16:00 | Sediment | SW6010B | 9/7/7440 | 820 | Y | mg/kg | J | TRG |
| 0910044-026A | WC-8-SED-B | Silver | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-026A | WC-8-SED-B | Sodium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-23-5 | 71 | Y | mg/kg | J | TRG |
| 0910044-026A | WC-8-SED-B | Thallium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-026A | WC-8-SED-B | Antimony | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-36-0 | 0.94 | Y | mg/kg | J | TRG |
| 0910044-026A | WC-8-SED-B | Arsenic | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-38-2 | 34 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Barium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-39-3 | 64 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Beryllium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-41-7 | 0.54 | Y | mg/kg | J | TRG |
| 0910044-026A | WC-8-SED-B | Cadmium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-43-9 | 0.39 | Y | mg/kg | J | TRG |
| 0910044-026A | WC-8-SED-B | Chromium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-47-3 | 130 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Cobalt | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Copper | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-50-8 | 81 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Vanadium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-62-2 | 15 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Zinc | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-66-6 | 110 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Calcium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7440-70-2 | 2300 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Selenium | 10/12/2009 | 16:00 | Sediment | SW6010B | 7782-49-2 | 0.49 | Y | mg/kg | J | TRG |
| 0910044-026A | WC-8-SED-B | Mercury | 10/12/2009 | 16:00 | Sediment | SW7471A | 7439-97-6 | 1.9 | Y | mg/kg | | TRG |
| 0910044-026A | WC-8-SED-B | Cyanide, To | 10/12/2009 | 16:00 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-027A | WC-8-SED-C | Percent Moi | 10/12/2009 | 16:05 | Sediment | SM2540G | GIS-210-008 | 39.1 | Y | percent | | TRG |
| 0910044-027A | WC-8-SED-C | Aluminum | 10/12/2009 | 16:05 | Sediment | SW6010B | 7429-90-5 | 15000 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Iron | 10/12/2009 | 16:05 | Sediment | SW6010B | 7439-89-6 | 24000 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Lead | 10/12/2009 | 16:05 | Sediment | SW6010B | 7439-92-1 | 160 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-027A | WC-8-SED-C | Magnesium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7439-95-4 | 6200 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Manganese | 10/12/2009 | 16:05 | Sediment | SW6010B | 7439-96-5 | 230 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Nickel | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-02-0 | 24 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Potassium | 10/12/2009 | 16:05 | Sediment | SW6010B | 9/7/7440 | 840 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Silver | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-027A | WC-8-SED-C | Sodium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-23-5 | 74 | Y | mg/kg | J | TRG |
| 0910044-027A | WC-8-SED-C | Thallium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-027A | WC-8-SED-C | Antimony | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-027A | WC-8-SED-C | Arsenic | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-38-2 | 16 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Barium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-39-3 | 69 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Beryllium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-41-7 | 0.59 | Y | mg/kg | J | TRG |
| 0910044-027A | WC-8-SED-C | Cadmium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-43-9 | 0.19 | Y | mg/kg | J | TRG |
| 0910044-027A | WC-8-SED-C | Chromium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-47-3 | 120 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Cobalt | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Copper | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-50-8 | 46 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Vanadium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-62-2 | 17 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Zinc | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-66-6 | 87 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Calcium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7440-70-2 | 2100 | Y | mg/kg | | TRG |
| 0910044-027A | WC-8-SED-C | Selenium | 10/12/2009 | 16:05 | Sediment | SW6010B | 7782-49-2 | 0.67 | Y | mg/kg | J | TRG |
| 0910044-027A | WC-8-SED-C | Mercury | 10/12/2009 | 16:05 | Sediment | SW7471A | 7439-97-6 | 0.11 | Y | mg/kg | J | TRG |
| 0910044-027A | WC-8-SED-C | Cyanide, To | 10/12/2009 | 16:05 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-028A | WC-9-SED-A | Percent Moi | 10/12/2009 | 16:25 | Sediment | SM2540G | GIS-210-008 | 68.7 | Y | percent | | TRG |
| 0910044-028A | WC-9-SED-A | Aluminum | 10/12/2009 | 16:25 | Sediment | SW6010B | 7429-90-5 | 13000 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Iron | 10/12/2009 | 16:25 | Sediment | SW6010B | 7439-89-6 | 25000 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Lead | 10/12/2009 | 16:25 | Sediment | SW6010B | 7439-92-1 | 130 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Magnesium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7439-95-4 | 6600 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Manganese | 10/12/2009 | 16:25 | Sediment | SW6010B | 7439-96-5 | 520 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Nickel | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-02-0 | 28 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Potassium | 10/12/2009 | 16:25 | Sediment | SW6010B | 9/7/7440 | 1100 | Y | mg/kg | J | TRG |
| 0910044-028A | WC-9-SED-A | Silver | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-028A | WC-9-SED-A | Sodium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-23-5 | 150 | Y | mg/kg | J | TRG |
| 0910044-028A | WC-9-SED-A | Thallium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-028A | WC-9-SED-A | Antimony | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-028A | WC-9-SED-A | Arsenic | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-38-2 | 5.4 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Barium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-39-3 | 73 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Beryllium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-41-7 | 0.57 | Y | mg/kg | J | TRG |
| 0910044-028A | WC-9-SED-A | Cadmium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-43-9 | 2 | Y | mg/kg | J | TRG |
| 0910044-028A | WC-9-SED-A | Chromium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-47-3 | 110 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Cobalt | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-48-4 | 12 | Y | mg/kg | J | TRG |
| 0910044-028A | WC-9-SED-A | Copper | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-50-8 | 69 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Vanadium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-62-2 | 20 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Zinc | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-66-6 | 280 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Calcium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7440-70-2 | 6200 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Selenium | 10/12/2009 | 16:25 | Sediment | SW6010B | 7782-49-2 | 1.2 | Y | mg/kg | J | TRG |
| 0910044-028A | WC-9-SED-A | Mercury | 10/12/2009 | 16:25 | Sediment | SW7471A | 7439-97-6 | 2.5 | Y | mg/kg | | TRG |
| 0910044-028A | WC-9-SED-A | Cyanide, To | 10/12/2009 | 16:25 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-029A | WC-9-SED-B | Percent Moi | 10/12/2009 | 16:30 | Sediment | SM2540G | GIS-210-008 | 54.6 | Y | percent | | TRG |
| 0910044-029A | WC-9-SED-B | Aluminum | 10/12/2009 | 16:30 | Sediment | SW6010B | 7429-90-5 | 12000 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Iron | 10/12/2009 | 16:30 | Sediment | SW6010B | 7439-89-6 | 26000 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Lead | 10/12/2009 | 16:30 | Sediment | SW6010B | 7439-92-1 | 180 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Magnesium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7439-95-4 | 6000 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Manganese | 10/12/2009 | 16:30 | Sediment | SW6010B | 7439-96-5 | 500 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Nickel | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-02-0 | 27 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Potassium | 10/12/2009 | 16:30 | Sediment | SW6010B | 9/7/7440 | 810 | Y | mg/kg | J | TRG |
| 0910044-029A | WC-9-SED-B | Silver | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-22-4 | 0.46 | Y | mg/kg | J | TRG |
| 0910044-029A | WC-9-SED-B | Sodium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-23-5 | 87 | Y | mg/kg | J | TRG |
| 0910044-029A | WC-9-SED-B | Thallium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-029A | WC-9-SED-B | Antimony | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-36-0 | 0.86 | Y | mg/kg | J | TRG |
| 0910044-029A | WC-9-SED-B | Arsenic | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-38-2 | 6.7 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Barium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-39-3 | 69 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Beryllium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-41-7 | 0.55 | Y | mg/kg | J | TRG |
| 0910044-029A | WC-9-SED-B | Cadmium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-43-9 | 3.1 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Chromium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-47-3 | 120 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Cobalt | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-48-4 | 13 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-029A | WC-9-SED-B | Copper | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-50-8 | 130 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Vanadium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-62-2 | 20 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Zinc | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-66-6 | 390 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Calcium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7440-70-2 | 4800 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Selenium | 10/12/2009 | 16:30 | Sediment | SW6010B | 7782-49-2 | 0.63 | Y | mg/kg | J | TRG |
| 0910044-029A | WC-9-SED-B | Mercury | 10/12/2009 | 16:30 | Sediment | SW7471A | 7439-97-6 | 5.3 | Y | mg/kg | E | TRG |
| 0910044-029A | WC-9-SED-B | Mercury | 10/12/2009 | 16:30 | Sediment | SW7471A | 7439-97-6 | 6.2 | Y | mg/kg | | TRG |
| 0910044-029A | WC-9-SED-B | Cyanide, To | 10/12/2009 | 16:30 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-030A | WC-9-SED-C | Percent Moi | 10/12/2009 | 16:35 | Sediment | SM2540G | GIS-210-008 | 52.3 | Y | percent | | TRG |
| 0910044-030A | WC-9-SED-C | Aluminum | 10/12/2009 | 16:35 | Sediment | SW6010B | 7429-90-5 | 14000 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Iron | 10/12/2009 | 16:35 | Sediment | SW6010B | 7439-89-6 | 28000 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Lead | 10/12/2009 | 16:35 | Sediment | SW6010B | 7439-92-1 | 620 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Magnesium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7439-95-4 | 5500 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Manganese | 10/12/2009 | 16:35 | Sediment | SW6010B | 7439-96-5 | 430 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Nickel | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-02-0 | 22 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Potassium | 10/12/2009 | 16:35 | Sediment | SW6010B | 9/7/7440 | 1100 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Silver | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-030A | WC-9-SED-C | Sodium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-23-5 | 85 | Y | mg/kg | J | TRG |
| 0910044-030A | WC-9-SED-C | Thallium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-030A | WC-9-SED-C | Antimony | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-36-0 | 4 | Y | mg/kg | J | TRG |
| 0910044-030A | WC-9-SED-C | Arsenic | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-38-2 | 110 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Barium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-39-3 | 91 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Beryllium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-41-7 | 0.62 | Y | mg/kg | J | TRG |
| 0910044-030A | WC-9-SED-C | Cadmium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-43-9 | 23 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Chromium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-47-3 | 3000 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Cobalt | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Copper | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-50-8 | 350 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Vanadium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-62-2 | 17 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Zinc | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-66-6 | 1900 | Y | mg/kg | E | TRG |
| 0910044-030A | WC-9-SED-C | Zinc | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-66-6 | 2100 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Calcium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7440-70-2 | 4400 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Selenium | 10/12/2009 | 16:35 | Sediment | SW6010B | 7782-49-2 | 1.3 | Y | mg/kg | J | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-030A | WC-9-SED-C | Mercury | 10/12/2009 | 16:35 | Sediment | SW7471A | 7439-97-6 | 17 | Y | mg/kg | E | TRG |
| 0910044-030A | WC-9-SED-C | Mercury | 10/12/2009 | 16:35 | Sediment | SW7471A | 7439-97-6 | 81 | Y | mg/kg | | TRG |
| 0910044-030A | WC-9-SED-C | Cyanide, To | 10/12/2009 | 16:35 | Sediment | SW9012 | 57-12-5 | 9 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Percent Moi | 10/12/2009 | 17:00 | Sediment | SM2540G | GIS-210-008 | 44.7 | Y | percent | | TRG |
| 0910044-031A | WC-10-SED-A | Aluminum | 10/12/2009 | 17:00 | Sediment | SW6010B | 7429-90-5 | 14000 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Iron | 10/12/2009 | 17:00 | Sediment | SW6010B | 7439-89-6 | 31000 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Lead | 10/12/2009 | 17:00 | Sediment | SW6010B | 7439-92-1 | 30 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Magnesium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7439-95-4 | 7700 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Manganese | 10/12/2009 | 17:00 | Sediment | SW6010B | 7439-96-5 | 610 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Nickel | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-02-0 | 24 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Potassium | 10/12/2009 | 17:00 | Sediment | SW6010B | 9/7/7440 | 910 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Silver | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-031A | WC-10-SED-A | Sodium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-23-5 | 89 | Y | mg/kg | J | TRG |
| 0910044-031A | WC-10-SED-A | Thallium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-031A | WC-10-SED-A | Antimony | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-031A | WC-10-SED-A | Arsenic | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-38-2 | 4.7 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Barium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-39-3 | 62 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Beryllium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-41-7 | 0.48 | Y | mg/kg | J | TRG |
| 0910044-031A | WC-10-SED-A | Cadmium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-43-9 | 0.35 | Y | mg/kg | J | TRG |
| 0910044-031A | WC-10-SED-A | Chromium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-47-3 | 21 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Cobalt | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-48-4 | 10 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Copper | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-50-8 | 22 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Vanadium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-62-2 | 16 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Zinc | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-66-6 | 100 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Calcium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7440-70-2 | 4000 | Y | mg/kg | | TRG |
| 0910044-031A | WC-10-SED-A | Selenium | 10/12/2009 | 17:00 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-031A | WC-10-SED-A | Mercury | 10/12/2009 | 17:00 | Sediment | SW7471A | 7439-97-6 | 0.13 | Y | mg/kg | J | TRG |
| 0910044-031A | WC-10-SED-A | Cyanide, To | 10/12/2009 | 17:00 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-032A | WC-10-SED-E | Percent Moi | 10/12/2009 | 17:05 | Sediment | SM2540G | GIS-210-008 | 13.1 | Y | percent | | TRG |
| 0910044-032A | WC-10-SED-E | Aluminum | 10/12/2009 | 17:05 | Sediment | SW6010B | 7429-90-5 | 9700 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Iron | 10/12/2009 | 17:05 | Sediment | SW6010B | 7439-89-6 | 25000 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Lead | 10/12/2009 | 17:05 | Sediment | SW6010B | 7439-92-1 | 17 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-032A | WC-10-SED-E | Magnesium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7439-95-4 | 6000 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Manganese | 10/12/2009 | 17:05 | Sediment | SW6010B | 7439-96-5 | 180 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Nickel | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-02-0 | 17 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Potassium | 10/12/2009 | 17:05 | Sediment | SW6010B | 9/7/7440 | 480 | Y | mg/kg | J | TRG |
| 0910044-032A | WC-10-SED-E | Silver | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-032A | WC-10-SED-E | Sodium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-23-5 | 30 | Y | mg/kg | J | TRG |
| 0910044-032A | WC-10-SED-E | Thallium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-032A | WC-10-SED-E | Antimony | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-032A | WC-10-SED-E | Arsenic | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-38-2 | 2.5 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Barium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-39-3 | 23 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Beryllium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-41-7 | 0.33 | Y | mg/kg | J | TRG |
| 0910044-032A | WC-10-SED-E | Cadmium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-43-9 | 0.17 | Y | mg/kg | J | TRG |
| 0910044-032A | WC-10-SED-E | Chromium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-47-3 | 9.8 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Cobalt | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-48-4 | 7.9 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Copper | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-50-8 | 10 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Vanadium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-62-2 | 12 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Zinc | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-66-6 | 53 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Calcium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7440-70-2 | 930 | Y | mg/kg | | TRG |
| 0910044-032A | WC-10-SED-E | Selenium | 10/12/2009 | 17:05 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-032A | WC-10-SED-E | Mercury | 10/12/2009 | 17:05 | Sediment | SW7471A | 7439-97-6 | | N | mg/kg | U | TRG |
| 0910044-032A | WC-10-SED-E | Cyanide, To | 10/12/2009 | 17:05 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-033A | WC-11-SED-A | Percent Moi | 10/12/2009 | 17:20 | Sediment | SM2540G | GIS-210-008 | 15.7 | Y | percent | | TRG |
| 0910044-033A | WC-11-SED-A | Aluminum | 10/12/2009 | 17:20 | Sediment | SW6010B | 7429-90-5 | 11000 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Iron | 10/12/2009 | 17:20 | Sediment | SW6010B | 7439-89-6 | 27000 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Lead | 10/12/2009 | 17:20 | Sediment | SW6010B | 7439-92-1 | 67 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Magnesium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7439-95-4 | 6200 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Manganese | 10/12/2009 | 17:20 | Sediment | SW6010B | 7439-96-5 | 310 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Nickel | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-02-0 | 23 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Potassium | 10/12/2009 | 17:20 | Sediment | SW6010B | 9/7/7440 | 630 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Silver | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-033A | WC-11-SED-A | Sodium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-23-5 | 42 | Y | mg/kg | J | TRG |
| 0910044-033A | WC-11-SED-A | Thallium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-033A | WC-11-SED-A | Antimony | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-36-0 | 6.9 | Y | mg/kg | J | TRG |
| 0910044-033A | WC-11-SED-A | Arsenic | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-38-2 | 7.4 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Barium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-39-3 | 27 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Beryllium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-41-7 | 0.37 | Y | mg/kg | J | TRG |
| 0910044-033A | WC-11-SED-A | Cadmium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-43-9 | 1.3 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Chromium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-47-3 | 38 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Cobalt | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-48-4 | 10 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Copper | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-50-8 | 33 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Vanadium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-62-2 | 14 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Zinc | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-66-6 | 280 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Calcium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7440-70-2 | 5900 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Selenium | 10/12/2009 | 17:20 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-033A | WC-11-SED-A | Mercury | 10/12/2009 | 17:20 | Sediment | SW7471A | 7439-97-6 | 0.5 | Y | mg/kg | | TRG |
| 0910044-033A | WC-11-SED-A | Cyanide, To | 10/12/2009 | 17:20 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-034A | WC-11-SED-E | Percent Moi | 10/12/2009 | 17:25 | Sediment | SM2540G | GIS-210-008 | 44.7 | Y | percent | | TRG |
| 0910044-034A | WC-11-SED-E | Aluminum | 10/12/2009 | 17:25 | Sediment | SW6010B | 7429-90-5 | 16000 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Iron | 10/12/2009 | 17:25 | Sediment | SW6010B | 7439-89-6 | 36000 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Lead | 10/12/2009 | 17:25 | Sediment | SW6010B | 7439-92-1 | 180 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Magnesium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7439-95-4 | 8100 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Manganese | 10/12/2009 | 17:25 | Sediment | SW6010B | 7439-96-5 | 330 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Nickel | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-02-0 | 28 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Potassium | 10/12/2009 | 17:25 | Sediment | SW6010B | 9/7/7440 | 1100 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Silver | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-034A | WC-11-SED-E | Sodium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-23-5 | 73 | Y | mg/kg | J | TRG |
| 0910044-034A | WC-11-SED-E | Thallium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-034A | WC-11-SED-E | Antimony | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-36-0 | 4.3 | Y | mg/kg | J | TRG |
| 0910044-034A | WC-11-SED-E | Arsenic | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-38-2 | 15 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Barium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-39-3 | 46 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Beryllium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-41-7 | 0.52 | Y | mg/kg | J | TRG |
| 0910044-034A | WC-11-SED-E | Cadmium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-43-9 | 1.8 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Chromium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-47-3 | 250 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Cobalt | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-48-4 | 14 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-034A | WC-11-SED-E | Copper | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-50-8 | 47 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Vanadium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-62-2 | 20 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Zinc | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-66-6 | 380 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Calcium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7440-70-2 | 2300 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Selenium | 10/12/2009 | 17:25 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-034A | WC-11-SED-E | Mercury | 10/12/2009 | 17:25 | Sediment | SW7471A | 7439-97-6 | 2.6 | Y | mg/kg | | TRG |
| 0910044-034A | WC-11-SED-E | Cyanide, To | 10/12/2009 | 17:25 | Sediment | SW9012 | 57-12-5 | 0.72 | Y | mg/kg | J | TRG |
| 0910044-035A | WC-12-SED-A | Percent Moi | 10/12/2009 | 17:40 | Sediment | SM2540G | GIS-210-008 | 34 | Y | percent | | TRG |
| 0910044-035A | WC-12-SED-A | Aluminum | 10/12/2009 | 17:40 | Sediment | SW6010B | 7429-90-5 | 13000 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Iron | 10/12/2009 | 17:40 | Sediment | SW6010B | 7439-89-6 | 27000 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Lead | 10/12/2009 | 17:40 | Sediment | SW6010B | 7439-92-1 | 17 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Magnesium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7439-95-4 | 6200 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Manganese | 10/12/2009 | 17:40 | Sediment | SW6010B | 7439-96-5 | 330 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Nickel | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-02-0 | 23 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Potassium | 10/12/2009 | 17:40 | Sediment | SW6010B | 9/7/7440 | 920 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Silver | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-035A | WC-12-SED-A | Sodium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-23-5 | 68 | Y | mg/kg | J | TRG |
| 0910044-035A | WC-12-SED-A | Thallium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-035A | WC-12-SED-A | Antimony | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-035A | WC-12-SED-A | Arsenic | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-38-2 | 5 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Barium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-39-3 | 46 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Beryllium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-41-7 | 0.54 | Y | mg/kg | J | TRG |
| 0910044-035A | WC-12-SED-A | Cadmium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-43-9 | 0.24 | Y | mg/kg | J | TRG |
| 0910044-035A | WC-12-SED-A | Chromium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-47-3 | 16 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Cobalt | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-48-4 | 9.1 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Copper | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-50-8 | 18 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Vanadium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-62-2 | 14 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Zinc | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-66-6 | 80 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Calcium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7440-70-2 | 2400 | Y | mg/kg | | TRG |
| 0910044-035A | WC-12-SED-A | Selenium | 10/12/2009 | 17:40 | Sediment | SW6010B | 7782-49-2 | 0.43 | Y | mg/kg | J | TRG |
| 0910044-035A | WC-12-SED-A | Mercury | 10/12/2009 | 17:40 | Sediment | SW7471A | 7439-97-6 | 0.018 | Y | mg/kg | J | TRG |
| 0910044-035A | WC-12-SED-A | Cyanide, To | 10/12/2009 | 17:40 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-036A | WC-12-SED-E | Percent Moi | 10/12/2009 | 17:45 | Sediment | SM2540G | GIS-210-008 | 23.5 | Y | percent | | TRG |
| 0910044-036A | WC-12-SED-E | Aluminum | 10/12/2009 | 17:45 | Sediment | SW6010B | 7429-90-5 | 12000 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Iron | 10/12/2009 | 17:45 | Sediment | SW6010B | 7439-89-6 | 28000 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Lead | 10/12/2009 | 17:45 | Sediment | SW6010B | 7439-92-1 | 13 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Magnesium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7439-95-4 | 5900 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Manganese | 10/12/2009 | 17:45 | Sediment | SW6010B | 7439-96-5 | 170 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Nickel | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-02-0 | 23 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Potassium | 10/12/2009 | 17:45 | Sediment | SW6010B | 9/7/7440 | 940 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Silver | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-036A | WC-12-SED-E | Sodium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-23-5 | 51 | Y | mg/kg | J | TRG |
| 0910044-036A | WC-12-SED-E | Thallium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-036A | WC-12-SED-E | Antimony | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-036A | WC-12-SED-E | Arsenic | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-38-2 | 6.7 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Barium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-39-3 | 37 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Beryllium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-41-7 | 0.45 | Y | mg/kg | J | TRG |
| 0910044-036A | WC-12-SED-E | Cadmium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-43-9 | 0.25 | Y | mg/kg | J | TRG |
| 0910044-036A | WC-12-SED-E | Chromium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-47-3 | 14 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Cobalt | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-48-4 | 11 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Copper | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-50-8 | 17 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Vanadium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-62-2 | 15 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Zinc | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-66-6 | 62 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Calcium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7440-70-2 | 1400 | Y | mg/kg | | TRG |
| 0910044-036A | WC-12-SED-E | Selenium | 10/12/2009 | 17:45 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-036A | WC-12-SED-E | Mercury | 10/12/2009 | 17:45 | Sediment | SW7471A | 7439-97-6 | 0.011 | Y | mg/kg | J | TRG |
| 0910044-036A | WC-12-SED-E | Cyanide, To | 10/12/2009 | 17:45 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-037A | WC-13-SED-A | Percent Moi | 10/12/2009 | 18:00 | Sediment | SM2540G | GIS-210-008 | 18.4 | Y | percent | | TRG |
| 0910044-037A | WC-13-SED-A | Aluminum | 10/12/2009 | 18:00 | Sediment | SW6010B | 7429-90-5 | 14000 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Iron | 10/12/2009 | 18:00 | Sediment | SW6010B | 7439-89-6 | 41000 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Lead | 10/12/2009 | 18:00 | Sediment | SW6010B | 7439-92-1 | 33 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Magnesium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7439-95-4 | 7700 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Manganese | 10/12/2009 | 18:00 | Sediment | SW6010B | 7439-96-5 | 590 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Nickel | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-02-0 | 27 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-037A | WC-13-SED-A | Potassium | 10/12/2009 | 18:00 | Sediment | SW6010B | 9/7/7440 | 760 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Silver | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-037A | WC-13-SED-A | Sodium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-23-5 | 56 | Y | mg/kg | J | TRG |
| 0910044-037A | WC-13-SED-A | Thallium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-037A | WC-13-SED-A | Antimony | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-037A | WC-13-SED-A | Arsenic | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-38-2 | 6.8 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Barium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-39-3 | 33 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Beryllium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-41-7 | 0.45 | Y | mg/kg | J | TRG |
| 0910044-037A | WC-13-SED-A | Cadmium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-43-9 | 0.52 | Y | mg/kg | J | TRG |
| 0910044-037A | WC-13-SED-A | Chromium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-47-3 | 21 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Cobalt | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-48-4 | 12 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Copper | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-50-8 | 16 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Vanadium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-62-2 | 15 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Zinc | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-66-6 | 340 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Calcium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7440-70-2 | 2300 | Y | mg/kg | | TRG |
| 0910044-037A | WC-13-SED-A | Selenium | 10/12/2009 | 18:00 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-037A | WC-13-SED-A | Mercury | 10/12/2009 | 18:00 | Sediment | SW7471A | 7439-97-6 | 0.057 | Y | mg/kg | J | TRG |
| 0910044-037A | WC-13-SED-A | Cyanide, To | 10/12/2009 | 18:00 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-038A | WC-13-SED-E | Percent Moi | 10/12/2009 | 18:05 | Sediment | SM2540G | GIS-210-008 | 18.4 | Y | percent | | TRG |
| 0910044-038A | WC-13-SED-E | Aluminum | 10/12/2009 | 18:05 | Sediment | SW6010B | 7429-90-5 | 11000 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Iron | 10/12/2009 | 18:05 | Sediment | SW6010B | 7439-89-6 | 28000 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Lead | 10/12/2009 | 18:05 | Sediment | SW6010B | 7439-92-1 | 11 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Magnesium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7439-95-4 | 6100 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Manganese | 10/12/2009 | 18:05 | Sediment | SW6010B | 7439-96-5 | 330 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Nickel | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-02-0 | 21 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Potassium | 10/12/2009 | 18:05 | Sediment | SW6010B | 9/7/7440 | 740 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Silver | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-038A | WC-13-SED-E | Sodium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-23-5 | 58 | Y | mg/kg | J | TRG |
| 0910044-038A | WC-13-SED-E | Thallium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-038A | WC-13-SED-E | Antimony | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-038A | WC-13-SED-E | Arsenic | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-38-2 | 3.5 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Barium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-39-3 | 27 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-038A | WC-13-SED-E | Beryllium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-41-7 | 0.4 | Y | mg/kg | J | TRG |
| 0910044-038A | WC-13-SED-E | Cadmium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-43-9 | 0.26 | Y | mg/kg | J | TRG |
| 0910044-038A | WC-13-SED-E | Chromium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-47-3 | 13 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Cobalt | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-48-4 | 9.8 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Copper | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-50-8 | 11 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Vanadium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-62-2 | 12 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Zinc | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-66-6 | 68 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Calcium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7440-70-2 | 1100 | Y | mg/kg | | TRG |
| 0910044-038A | WC-13-SED-E | Selenium | 10/12/2009 | 18:05 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-038A | WC-13-SED-E | Mercury | 10/12/2009 | 18:05 | Sediment | SW7471A | 7439-97-6 | | N | mg/kg | U | TRG |
| 0910044-038A | WC-13-SED-E | Cyanide, To | 10/12/2009 | 18:05 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-039A | WC-14-SED-A | Percent Moi | 10/12/2009 | 18:15 | Sediment | SM2540G | GIS-210-008 | 21.5 | Y | percent | | TRG |
| 0910044-039A | WC-14-SED-A | Aluminum | 10/12/2009 | 18:15 | Sediment | SW6010B | 7429-90-5 | 9100 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Iron | 10/12/2009 | 18:15 | Sediment | SW6010B | 7439-89-6 | 24000 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Lead | 10/12/2009 | 18:15 | Sediment | SW6010B | 7439-92-1 | 42 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Magnesium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7439-95-4 | 4800 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Manganese | 10/12/2009 | 18:15 | Sediment | SW6010B | 7439-96-5 | 250 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Nickel | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-02-0 | 16 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Potassium | 10/12/2009 | 18:15 | Sediment | SW6010B | 9/7/7440 | 640 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Silver | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-039A | WC-14-SED-A | Sodium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-23-5 | 50 | Y | mg/kg | J | TRG |
| 0910044-039A | WC-14-SED-A | Thallium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-039A | WC-14-SED-A | Antimony | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-039A | WC-14-SED-A | Arsenic | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-38-2 | 3.1 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Barium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-39-3 | 21 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Beryllium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-41-7 | 0.32 | Y | mg/kg | J | TRG |
| 0910044-039A | WC-14-SED-A | Cadmium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-43-9 | 0.25 | Y | mg/kg | J | TRG |
| 0910044-039A | WC-14-SED-A | Chromium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-47-3 | 15 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Cobalt | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-48-4 | 7.5 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Copper | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-50-8 | 19 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Vanadium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-62-2 | 11 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Zinc | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-66-6 | 100 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-039A | WC-14-SED-A | Calcium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7440-70-2 | 1700 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Selenium | 10/12/2009 | 18:15 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-039A | WC-14-SED-A | Mercury | 10/12/2009 | 18:15 | Sediment | SW7471A | 7439-97-6 | 0.22 | Y | mg/kg | | TRG |
| 0910044-039A | WC-14-SED-A | Cyanide, To | 10/12/2009 | 18:15 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-040A | WC-14-SED-E | Percent Moi | 10/12/2009 | 18:20 | Sediment | SM2540G | GIS-210-008 | 13.9 | Y | percent | | TRG |
| 0910044-040A | WC-14-SED-E | Aluminum | 10/12/2009 | 18:20 | Sediment | SW6010B | 7429-90-5 | 12000 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Iron | 10/12/2009 | 18:20 | Sediment | SW6010B | 7439-89-6 | 30000 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Lead | 10/12/2009 | 18:20 | Sediment | SW6010B | 7439-92-1 | 12 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Magnesium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7439-95-4 | 7100 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Manganese | 10/12/2009 | 18:20 | Sediment | SW6010B | 7439-96-5 | 290 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Nickel | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-02-0 | 23 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Potassium | 10/12/2009 | 18:20 | Sediment | SW6010B | 9/7/7440 | 680 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Silver | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-040A | WC-14-SED-E | Sodium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-23-5 | 44 | Y | mg/kg | J | TRG |
| 0910044-040A | WC-14-SED-E | Thallium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-040A | WC-14-SED-E | Antimony | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-040A | WC-14-SED-E | Arsenic | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-38-2 | 3.3 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Barium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-39-3 | 25 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Beryllium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-41-7 | 0.41 | Y | mg/kg | J | TRG |
| 0910044-040A | WC-14-SED-E | Cadmium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-43-9 | 0.2 | Y | mg/kg | J | TRG |
| 0910044-040A | WC-14-SED-E | Chromium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-47-3 | 17 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Cobalt | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-48-4 | 10 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Copper | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-50-8 | 18 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Vanadium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-62-2 | 15 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Zinc | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-66-6 | 78 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Calcium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7440-70-2 | 1300 | Y | mg/kg | | TRG |
| 0910044-040A | WC-14-SED-E | Selenium | 10/12/2009 | 18:20 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-040A | WC-14-SED-E | Mercury | 10/12/2009 | 18:20 | Sediment | SW7471A | 7439-97-6 | 0.012 | Y | mg/kg | J | TRG |
| 0910044-040A | WC-14-SED-E | Cyanide, To | 10/12/2009 | 18:20 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-042A | WC-15-SED-A | Percent Moi | 10/12/2009 | 18:30 | Sediment | SM2540G | GIS-210-008 | 22.5 | Y | percent | | TRG |
| 0910044-042A | WC-15-SED-A | Aluminum | 10/12/2009 | 18:30 | Sediment | SW6010B | 7429-90-5 | 9100 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Iron | 10/12/2009 | 18:30 | Sediment | SW6010B | 7439-89-6 | 46000 | Y | mg/kg | | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-042A | WC-15-SED-A | Lead | 10/12/2009 | 18:30 | Sediment | SW6010B | 7439-92-1 | 510 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Magnesium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7439-95-4 | 4400 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Manganese | 10/12/2009 | 18:30 | Sediment | SW6010B | 7439-96-5 | 420 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Nickel | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-02-0 | 24 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Potassium | 10/12/2009 | 18:30 | Sediment | SW6010B | 9/7/7440 | 640 | Y | mg/kg | J | TRG |
| 0910044-042A | WC-15-SED-A | Silver | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-042A | WC-15-SED-A | Sodium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-23-5 | 62 | Y | mg/kg | J | TRG |
| 0910044-042A | WC-15-SED-A | Thallium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-042A | WC-15-SED-A | Antimony | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-36-0 | 1.9 | Y | mg/kg | J | TRG |
| 0910044-042A | WC-15-SED-A | Arsenic | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-38-2 | 13 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Barium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-39-3 | 38 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Beryllium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-41-7 | 0.39 | Y | mg/kg | J | TRG |
| 0910044-042A | WC-15-SED-A | Cadmium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-43-9 | 2 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Chromium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-47-3 | 170 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Cobalt | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-48-4 | 13 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Copper | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-50-8 | 240 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Vanadium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-62-2 | 13 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Zinc | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-66-6 | 410 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Calcium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7440-70-2 | 3800 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Selenium | 10/12/2009 | 18:30 | Sediment | SW6010B | 7782-49-2 | 0.94 | Y | mg/kg | J | TRG |
| 0910044-042A | WC-15-SED-A | Mercury | 10/12/2009 | 18:30 | Sediment | SW7471A | 7439-97-6 | 2.3 | Y | mg/kg | E | TRG |
| 0910044-042A | WC-15-SED-A | Mercury | 10/12/2009 | 18:30 | Sediment | SW7471A | 7439-97-6 | 2.4 | Y | mg/kg | | TRG |
| 0910044-042A | WC-15-SED-A | Cyanide, To | 10/12/2009 | 18:30 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-043A | WC-15-SED-E | Percent Moi | 10/12/2009 | 18:35 | Sediment | SM2540G | GIS-210-008 | 35.3 | Y | percent | | TRG |
| 0910044-043A | WC-15-SED-E | Aluminum | 10/12/2009 | 18:35 | Sediment | SW6010B | 7429-90-5 | 15000 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Iron | 10/12/2009 | 18:35 | Sediment | SW6010B | 7439-89-6 | 30000 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Lead | 10/12/2009 | 18:35 | Sediment | SW6010B | 7439-92-1 | 620 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Magnesium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7439-95-4 | 4500 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Manganese | 10/12/2009 | 18:35 | Sediment | SW6010B | 7439-96-5 | 340 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Nickel | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-02-0 | 21 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Potassium | 10/12/2009 | 18:35 | Sediment | SW6010B | 9/7/7440 | 2000 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Silver | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-043A | WC-15-SED-E | Sodium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-23-5 | 1700 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Thallium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-043A | WC-15-SED-E | Antimony | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-36-0 | 2.3 | Y | mg/kg | J | TRG |
| 0910044-043A | WC-15-SED-E | Arsenic | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-38-2 | 10 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Barium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-39-3 | 93 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Beryllium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-41-7 | 0.64 | Y | mg/kg | J | TRG |
| 0910044-043A | WC-15-SED-E | Cadmium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-43-9 | 1.7 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Chromium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-47-3 | 41 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Cobalt | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-48-4 | 9.4 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Copper | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-50-8 | 310 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Vanadium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-62-2 | 22 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Zinc | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-66-6 | 500 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Calcium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7440-70-2 | 11000 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Selenium | 10/12/2009 | 18:35 | Sediment | SW6010B | 7782-49-2 | 1.2 | Y | mg/kg | J | TRG |
| 0910044-043A | WC-15-SED-E | Mercury | 10/12/2009 | 18:35 | Sediment | SW7471A | 7439-97-6 | 0.68 | Y | mg/kg | | TRG |
| 0910044-043A | WC-15-SED-E | Cyanide, To | 10/12/2009 | 18:35 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-045A | WC-2-SED-A | Percent Moi | 10/12/2009 | 13:25 | Sediment | SM2540G | GIS-210-008 | 73.1 | Y | percent | | TRG |
| 0910044-045A | WC-2-SED-A | Aluminum | 10/12/2009 | 13:25 | Sediment | SW6010B | 7429-90-5 | 15000 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Iron | 10/12/2009 | 13:25 | Sediment | SW6010B | 7439-89-6 | 29000 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Lead | 10/12/2009 | 13:25 | Sediment | SW6010B | 7439-92-1 | 96 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Magnesium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7439-95-4 | 7100 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Manganese | 10/12/2009 | 13:25 | Sediment | SW6010B | 7439-96-5 | 550 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Nickel | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-02-0 | 32 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Potassium | 10/12/2009 | 13:25 | Sediment | SW6010B | 9/7/7440 | 1500 | Y | mg/kg | J | TRG |
| 0910044-045A | WC-2-SED-A | Silver | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-045A | WC-2-SED-A | Sodium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-23-5 | 160 | Y | mg/kg | J | TRG |
| 0910044-045A | WC-2-SED-A | Thallium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-045A | WC-2-SED-A | Antimony | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-045A | WC-2-SED-A | Arsenic | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-38-2 | 9.4 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Barium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-39-3 | 88 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Beryllium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-41-7 | 0.66 | Y | mg/kg | J | TRG |
| 0910044-045A | WC-2-SED-A | Cadmium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-43-9 | 1.4 | Y | mg/kg | J | TRG |

Created on 11/04/2009 13:25

| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-045A | WC-2-SED-A | Chromium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-47-3 | 99 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Cobalt | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-48-4 | 15 | Y | mg/kg | J | TRG |
| 0910044-045A | WC-2-SED-A | Copper | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-50-8 | 67 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Vanadium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-62-2 | 24 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Zinc | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-66-6 | 240 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Calcium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7440-70-2 | 7100 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Selenium | 10/12/2009 | 13:25 | Sediment | SW6010B | 7782-49-2 | 1.1 | Y | mg/kg | J | TRG |
| 0910044-045A | WC-2-SED-A | Mercury | 10/12/2009 | 13:25 | Sediment | SW7471A | 7439-97-6 | 3 | Y | mg/kg | | TRG |
| 0910044-045A | WC-2-SED-A | Cyanide, To | 10/12/2009 | 13:25 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-045ADUP | WC-2-SED-A | Percent Moi | 10/12/2009 | 13:25 | Sediment | SM2540G | GIS-210-008 | 72.4 | Y | percent | | TRG |
| 0910044-046A | WC-3-SED-A | Percent Moi | 10/12/2009 | 13:45 | Sediment | SM2540G | GIS-210-008 | 68.4 | Y | percent | | TRG |
| 0910044-046A | WC-3-SED-A | Aluminum | 10/12/2009 | 13:45 | Sediment | SW6010B | 7429-90-5 | 13000 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Iron | 10/12/2009 | 13:45 | Sediment | SW6010B | 7439-89-6 | 24000 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Lead | 10/12/2009 | 13:45 | Sediment | SW6010B | 7439-92-1 | 100 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Magnesium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7439-95-4 | 6400 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Manganese | 10/12/2009 | 13:45 | Sediment | SW6010B | 7439-96-5 | 420 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Nickel | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-02-0 | 34 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Potassium | 10/12/2009 | 13:45 | Sediment | SW6010B | 9/7/7440 | 1200 | Y | mg/kg | J | TRG |
| 0910044-046A | WC-3-SED-A | Silver | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-046A | WC-3-SED-A | Sodium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-23-5 | 140 | Y | mg/kg | J | TRG |
| 0910044-046A | WC-3-SED-A | Thallium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-046A | WC-3-SED-A | Antimony | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-046A | WC-3-SED-A | Arsenic | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-38-2 | 6 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Barium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-39-3 | 67 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Beryllium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-41-7 | 0.54 | Y | mg/kg | J | TRG |
| 0910044-046A | WC-3-SED-A | Cadmium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-43-9 | 3.4 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Chromium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-47-3 | 60 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Cobalt | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-48-4 | 15 | Y | mg/kg | J | TRG |
| 0910044-046A | WC-3-SED-A | Copper | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-50-8 | 72 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Vanadium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-62-2 | 23 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Zinc | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-66-6 | 400 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Calcium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7440-70-2 | 6300 | Y | mg/kg | | TRG |

Created on 11/04/2009 13:25

| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-046A | WC-3-SED-A | Selenium | 10/12/2009 | 13:45 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-046A | WC-3-SED-A | Mercury | 10/12/2009 | 13:45 | Sediment | SW7471A | 7439-97-6 | 1.4 | Y | mg/kg | | TRG |
| 0910044-046A | WC-3-SED-A | Cyanide, To | 10/12/2009 | 13:45 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| 0910044-047A | WC-6-SED-A | Percent Moi | 10/12/2009 | 14:45 | Sediment | SM2540G | GIS-210-008 | 74.1 | Y | percent | | TRG |
| 0910044-047A | WC-6-SED-A | Aluminum | 10/12/2009 | 14:45 | Sediment | SW6010B | 7429-90-5 | 15000 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Iron | 10/12/2009 | 14:45 | Sediment | SW6010B | 7439-89-6 | 26000 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Lead | 10/12/2009 | 14:45 | Sediment | SW6010B | 7439-92-1 | 210 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Magnesium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7439-95-4 | 6300 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Manganese | 10/12/2009 | 14:45 | Sediment | SW6010B | 7439-96-5 | 360 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Nickel | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-02-0 | 35 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Potassium | 10/12/2009 | 14:45 | Sediment | SW6010B | 9/7/7440 | 1200 | Y | mg/kg | J | TRG |
| 0910044-047A | WC-6-SED-A | Silver | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| 0910044-047A | WC-6-SED-A | Sodium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-23-5 | 180 | Y | mg/kg | J | TRG |
| 0910044-047A | WC-6-SED-A | Thallium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| 0910044-047A | WC-6-SED-A | Antimony | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| 0910044-047A | WC-6-SED-A | Arsenic | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-38-2 | 5.1 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Barium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-39-3 | 77 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Beryllium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-41-7 | 0.59 | Y | mg/kg | J | TRG |
| 0910044-047A | WC-6-SED-A | Cadmium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-43-9 | 3.5 | Y | mg/kg | J | TRG |
| 0910044-047A | WC-6-SED-A | Chromium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-47-3 | 180 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Cobalt | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-48-4 | 12 | Y | mg/kg | J | TRG |
| 0910044-047A | WC-6-SED-A | Copper | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-50-8 | 130 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Vanadium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-62-2 | 19 | Y | mg/kg | J | TRG |
| 0910044-047A | WC-6-SED-A | Zinc | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-66-6 | 410 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Calcium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7440-70-2 | 6300 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Selenium | 10/12/2009 | 14:45 | Sediment | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| 0910044-047A | WC-6-SED-A | Mercury | 10/12/2009 | 14:45 | Sediment | SW7471A | 7439-97-6 | 5.4 | Y | mg/kg | | TRG |
| 0910044-047A | WC-6-SED-A | Cyanide, To | 10/12/2009 | 14:45 | Sediment | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| LCS-10139 | LCS-10139 | Aluminum | 10/15/2009 | 0:00 | Soil | SW6010B | 7429-90-5 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Iron | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-89-6 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Lead | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-92-1 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Magnesium | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-95-4 | | Y | mg/kg | | SC |

| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS-10139 | LCS-10139 | Manganese | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-96-5 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Nickel | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-02-0 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Potassium | 10/15/2009 | 0:00 | Soil | SW6010B | 9/7/7440 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Silver | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-22-4 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Sodium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-23-5 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Thallium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-28-0 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Antimony | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-36-0 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Arsenic | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-38-2 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Barium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-39-3 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Beryllium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-41-7 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Cadmium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-43-9 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Chromium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-47-3 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Cobalt | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-48-4 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Copper | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-50-8 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Vanadium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-62-2 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Zinc | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-66-6 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Calcium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-70-2 | | Y | mg/kg | | SC |
| LCS-10139 | LCS-10139 | Selenium | 10/15/2009 | 0:00 | Soil | SW6010B | 7782-49-2 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Aluminum | 10/15/2009 | 0:00 | Soil | SW6010B | 7429-90-5 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Iron | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-89-6 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Lead | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-92-1 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Magnesium | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-95-4 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Manganese | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-96-5 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Nickel | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-02-0 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Potassium | 10/15/2009 | 0:00 | Soil | SW6010B | 9/7/7440 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Silver | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-22-4 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Sodium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-23-5 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Thallium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-28-0 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Antimony | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-36-0 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Arsenic | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-38-2 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Barium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-39-3 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Beryllium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-41-7 | | Y | mg/kg | | SC |

| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS-10140 | LCS-10140 | Cadmium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-43-9 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Chromium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-47-3 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Cobalt | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-48-4 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Copper | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-50-8 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Vanadium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-62-2 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Zinc | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-66-6 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Calcium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-70-2 | | Y | mg/kg | | SC |
| LCS-10140 | LCS-10140 | Selenium | 10/15/2009 | 0:00 | Soil | SW6010B | 7782-49-2 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Aluminum | 10/16/2009 | 0:00 | Soil | SW6010B | 7429-90-5 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Iron | 10/16/2009 | 0:00 | Soil | SW6010B | 7439-89-6 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Lead | 10/16/2009 | 0:00 | Soil | SW6010B | 7439-92-1 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Magnesium | 10/16/2009 | 0:00 | Soil | SW6010B | 7439-95-4 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Manganese | 10/16/2009 | 0:00 | Soil | SW6010B | 7439-96-5 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Nickel | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-02-0 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Potassium | 10/16/2009 | 0:00 | Soil | SW6010B | 9/7/7440 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Silver | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-22-4 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Sodium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-23-5 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Thallium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-28-0 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Antimony | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-36-0 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Arsenic | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-38-2 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Barium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-39-3 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Beryllium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-41-7 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Cadmium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-43-9 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Chromium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-47-3 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Cobalt | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-48-4 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Copper | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-50-8 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Vanadium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-62-2 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Zinc | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-66-6 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Calcium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-70-2 | | Y | mg/kg | | SC |
| LCS-10148 | LCS-10148 | Selenium | 10/16/2009 | 0:00 | Soil | SW6010B | 7782-49-2 | | Y | mg/kg | | SC |
| LCS-10155 | LCS-10155 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | Y | mg/kg | | SC |
| LCS-10155 | LCS-10155 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | Y | mg/kg | | SC |

| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS-10156 | LCS-10156 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | Y | mg/kg | | SC |
| LCS-10156 | LCS-10156 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | Y | mg/kg | | SC |
| LCS-10157 | LCS-10157 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | Y | mg/kg | | SC |
| LCS-10163 | LCS-10163 | Cyanide, To | 10/20/2009 | 0:00 | Solid | SW9012 | 57-12-5 | | Y | mg/kg | | SC |
| LCS-10174 | LCS-10174 | Cyanide, To | 10/21/2009 | 0:00 | Solid | SW9012 | 57-12-5 | | Y | mg/kg | | SC |
| LCS-10181 | LCS-10181 | Cyanide, To | 10/22/2009 | 0:00 | Solid | SW9012 | 57-12-5 | | Y | mg/kg | | SC |
| MB-10139 | MB-10139 | Aluminum | 10/15/2009 | 0:00 | Soil | SW6010B | 7429-90-5 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Iron | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-89-6 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Lead | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-92-1 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Magnesium | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-95-4 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Manganese | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-96-5 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Nickel | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-02-0 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Potassium | 10/15/2009 | 0:00 | Soil | SW6010B | 9/7/7440 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Silver | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Sodium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-23-5 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Thallium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Antimony | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Arsenic | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-38-2 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Barium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-39-3 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Beryllium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-41-7 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Cadmium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-43-9 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Chromium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-47-3 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Cobalt | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-48-4 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Copper | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-50-8 | 0.58 | Y | mg/kg | J | TRG |
| MB-10139 | MB-10139 | Vanadium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-62-2 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Zinc | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-66-6 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Calcium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-70-2 | | N | mg/kg | U | TRG |
| MB-10139 | MB-10139 | Selenium | 10/15/2009 | 0:00 | Soil | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Aluminum | 10/15/2009 | 0:00 | Soil | SW6010B | 7429-90-5 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Iron | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-89-6 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Lead | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-92-1 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Magnesium | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-95-4 | | N | mg/kg | U | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MB-10140 | MB-10140 | Manganese | 10/15/2009 | 0:00 | Soil | SW6010B | 7439-96-5 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Nickel | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-02-0 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Potassium | 10/15/2009 | 0:00 | Soil | SW6010B | 9/7/7440 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Silver | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Sodium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-23-5 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Thallium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Antimony | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Arsenic | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-38-2 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Barium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-39-3 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Beryllium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-41-7 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Cadmium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-43-9 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Chromium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-47-3 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Cobalt | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-48-4 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Copper | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-50-8 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Vanadium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-62-2 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Zinc | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-66-6 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Calcium | 10/15/2009 | 0:00 | Soil | SW6010B | 7440-70-2 | | N | mg/kg | U | TRG |
| MB-10140 | MB-10140 | Selenium | 10/15/2009 | 0:00 | Soil | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Aluminum | 10/16/2009 | 0:00 | Soil | SW6010B | 7429-90-5 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Iron | 10/16/2009 | 0:00 | Soil | SW6010B | 7439-89-6 | 1.5 | Y | mg/kg | J | TRG |
| MB-10148 | MB-10148 | Lead | 10/16/2009 | 0:00 | Soil | SW6010B | 7439-92-1 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Magnesium | 10/16/2009 | 0:00 | Soil | SW6010B | 7439-95-4 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Manganese | 10/16/2009 | 0:00 | Soil | SW6010B | 7439-96-5 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Nickel | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-02-0 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Potassium | 10/16/2009 | 0:00 | Soil | SW6010B | 9/7/7440 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Silver | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-22-4 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Sodium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-23-5 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Thallium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-28-0 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Antimony | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-36-0 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Arsenic | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-38-2 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Barium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-39-3 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Beryllium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-41-7 | | N | mg/kg | U | TRG |

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| lab_sample_id | sys_sample_code | chemical_name | sample_date | sample_time | Matrix | lab_anl_method_name | cas_rn | result_value | detect_flag | result_unit | lab_qualifiers | result_type_code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MB-10148 | MB-10148 | Cadmium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-43-9 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Chromium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-47-3 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Cobalt | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-48-4 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Copper | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-50-8 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Vanadium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-62-2 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Zinc | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-66-6 | | N | mg/kg | U | TRG |
| MB-10148 | MB-10148 | Calcium | 10/16/2009 | 0:00 | Soil | SW6010B | 7440-70-2 | 6.8 | Y | mg/kg | J | TRG |
| MB-10148 | MB-10148 | Selenium | 10/16/2009 | 0:00 | Soil | SW6010B | 7782-49-2 | | N | mg/kg | U | TRG |
| MB-10155 | MB-10155 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | N | mg/kg | U | TRG |
| MB-10155 | MB-10155 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | N | mg/kg | U | TRG |
| MB-10156 | MB-10156 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | N | mg/kg | U | TRG |
| MB-10156 | MB-10156 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | N | mg/kg | U | TRG |
| MB-10157 | MB-10157 | Mercury | 10/19/2009 | 11:00 | Solid | SW7471A | 7439-97-6 | | N | mg/kg | U | TRG |
| MB-10163 | MB-10163 | Cyanide, To | 10/20/2009 | 0:00 | Solid | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| MB-10174 | MB-10174 | Cyanide, To | 10/21/2009 | 0:00 | Solid | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |
| MB-10181 | MB-10181 | Cyanide, To | 10/22/2009 | 0:00 | Solid | SW9012 | 57-12-5 | | N | mg/kg | U | TRG |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-001A | WC-1-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-001A | WC-1-SED-A | Aluminum | 7.4 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Iron | 1.8 | 9.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Lead | 0.74 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Magnesium | 11 | 180 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Manganese | 0.18 | 9.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Nickel | 0.37 | 9.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Potassium | 37 | 920 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Silver | 0.37 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Sodium | 7.4 | 180 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Thallium | 0.92 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Antimony | 0.55 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Arsenic | 0.74 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Barium | 0.37 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Beryllium | 0.037 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Cadmium | 0.18 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Chromium | 0.37 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Cobalt | 0.74 | 9.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Copper | 0.37 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Vanadium | 0.37 | 9.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Zinc | 1.1 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Calcium | 7.4 | 180 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Selenium | 0.46 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:52 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Mercury | 0.015 | 0.18 | | 10/19/2009 | 11:00 | 10/19/2009 | 14:54 | 1 | 45.7 |
| 0910044-001A | WC-1-SED-A | Cyanide, To | 0.33 | 0.92 | | 10/20/2009 | 0:00 | 10/20/2009 | 11:40 | 1 | 45.7 |
| 0910044-001ADUP | WC-1-SED-AL | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-001AMS | WC-1-SED-AM | Aluminum | 7.4 | 18 | 526 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Iron | 1.8 | 9.2 | 227 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Lead | 0.74 | 1.8 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Magnesium | 11 | 180 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Manganese | 0.18 | 9.2 | 110 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Nickel | 0.37 | 9.2 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-001AMS | WC-1-SED-AM | Potassium | 37 | 920 | 99.3 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Silver | 0.37 | 1.8 | 94.9 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Sodium | 7.4 | 180 | 103 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Thallium | 0.92 | 3.7 | 96 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Antimony | 0.55 | 11 | 42.9 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Arsenic | 0.74 | 1.8 | 99.6 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Barium | 0.37 | 18 | 104 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Beryllium | 0.037 | 1.8 | 99.7 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Cadmium | 0.18 | 1.8 | 96.7 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Chromium | 0.37 | 1.8 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Cobalt | 0.74 | 9.2 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Copper | 0.37 | 1.8 | 103 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Vanadium | 0.37 | 9.2 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Zinc | 1.1 | 3.7 | 107 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Calcium | 7.4 | 180 | 107 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Selenium | 0.46 | 1.8 | 94.9 | 10/15/2009 | 0:00 | 10/19/2009 | 12:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Mercury | 0.015 | 0.18 | 89 | 10/19/2009 | 11:00 | 10/19/2009 | 14:56 | 1 | 45.7 |
| 0910044-001AMS | WC-1-SED-AM | Cyanide, To | 0.33 | 0.92 | 83.1 | 10/20/2009 | 0:00 | 10/20/2009 | 11:40 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Aluminum | 7.4 | 18 | 469 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Iron | 1.8 | 9.2 | 279 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Lead | 0.74 | 1.8 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Magnesium | 11 | 180 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Manganese | 0.18 | 9.2 | 117 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Nickel | 0.37 | 9.2 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Potassium | 37 | 920 | 98.5 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Silver | 0.37 | 1.8 | 95.5 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Sodium | 7.4 | 180 | 103 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Thallium | 0.92 | 3.7 | 96.3 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Antimony | 0.55 | 11 | 43.8 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Arsenic | 0.74 | 1.8 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Barium | 0.37 | 18 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AM | Beryllium | 0.037 | 1.8 | 99.8 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-001AMSD | WC-1-SED-AN | Cadmium | 0.18 | 1.8 | 96.8 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AN | Chromium | 0.37 | 1.8 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AN | Cobalt | 0.74 | 9.2 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AN | Copper | 0.37 | 1.8 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AN | Vanadium | 0.37 | 9.2 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AN | Zinc | 1.1 | 3.7 | 104 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AN | Calcium | 7.4 | 180 | 105 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AN | Selenium | 0.46 | 1.8 | 94.8 | 10/15/2009 | 0:00 | 10/19/2009 | 13:00 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AN | Mercury | 0.015 | 0.18 | 85.8 | 10/19/2009 | 11:00 | 10/19/2009 | 14:58 | 1 | 45.7 |
| 0910044-001AMSD | WC-1-SED-AN | Cyanide, To | 0.33 | 0.92 | 83.7 | 10/20/2009 | 0:00 | 10/20/2009 | 11:40 | 1 | 45.7 |
| 0910044-002A | WC-1-SED-B | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-002A | WC-1-SED-B | Aluminum | 8.1 | 20 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Iron | 2 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Lead | 0.81 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Magnesium | 12 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Manganese | 0.2 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Nickel | 0.4 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Potassium | 40 | 1000 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Silver | 0.4 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Sodium | 8.1 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Thallium | 1 | 4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Antimony | 0.61 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Arsenic | 0.81 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Barium | 0.4 | 20 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Beryllium | 0.04 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Cadmium | 0.2 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Chromium | 0.4 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Cobalt | 0.81 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Copper | 0.4 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Vanadium | 0.4 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Zinc | 1.2 | 4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Calcium | 8.1 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-002A | WC-1-SED-B | Selenium | 0.51 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:11 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Mercury | 0.017 | 0.2 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:00 | 1 | 50.5 |
| 0910044-002A | WC-1-SED-B | Cyanide, To | 0.36 | 1 | | 10/20/2009 | 0:00 | 10/20/2009 | 11:40 | 1 | 50.5 |
| 0910044-003A | WC-1-SED-C | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-003A | WC-1-SED-C | Aluminum | 8.1 | 20 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Iron | 2 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Lead | 0.81 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Magnesium | 12 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Manganese | 0.2 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Nickel | 0.4 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Potassium | 40 | 1000 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Silver | 0.4 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Sodium | 8.1 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Thallium | 1 | 4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Antimony | 0.61 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Arsenic | 0.81 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Barium | 0.4 | 20 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Beryllium | 0.04 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Cadmium | 0.2 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Chromium | 0.4 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Cobalt | 0.81 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Copper | 0.4 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Vanadium | 0.4 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Zinc | 1.2 | 4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Calcium | 8.1 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Selenium | 0.51 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:15 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Mercury | 0.017 | 0.2 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:02 | 1 | 50.6 |
| 0910044-003A | WC-1-SED-C | Cyanide, To | 0.36 | 1 | | 10/20/2009 | 0:00 | 10/20/2009 | 11:40 | 1 | 50.6 |
| 0910044-005A | WC-2-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-005A | WC-2-SED-A | Aluminum | 15 | 37 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Iron | 3.7 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Lead | 1.5 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-005A | WC-2-SED-A | Magnesium | 22 | 370 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Manganese | 0.37 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Nickel | 0.74 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Potassium | 74 | 1800 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Silver | 0.74 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Sodium | 15 | 370 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Thallium | 1.8 | 7.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Antimony | 1.1 | 22 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Arsenic | 1.5 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Barium | 0.74 | 37 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Beryllium | 0.074 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Cadmium | 0.37 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Chromium | 0.74 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Cobalt | 1.5 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Copper | 0.74 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Vanadium | 0.74 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Zinc | 2.2 | 7.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Calcium | 15 | 370 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Selenium | 0.92 | 3.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:19 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Mercury | 0.031 | 0.37 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:05 | 1 | 72.9 |
| 0910044-005A | WC-2-SED-A | Cyanide, To | 0.66 | 1.8 | | 10/20/2009 | 0:00 | 10/20/2009 | 11:40 | 1 | 72.9 |
| 0910044-006A | WC-2-SED-B | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-006A | WC-2-SED-B | Aluminum | 8.3 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Iron | 2.1 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Lead | 0.83 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Magnesium | 12 | 210 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Manganese | 0.21 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Nickel | 0.42 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Potassium | 42 | 1000 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Silver | 0.42 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Sodium | 8.3 | 210 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Thallium | 1 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-006A | WC-2-SED-B | Antimony | 0.62 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Arsenic | 0.83 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Barium | 0.42 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Beryllium | 0.042 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Cadmium | 0.21 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Chromium | 0.42 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Cobalt | 0.83 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Copper | 0.42 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Vanadium | 0.42 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Zinc | 1.2 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Calcium | 8.3 | 210 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Selenium | 0.52 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:35 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Mercury | 0.017 | 0.21 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:07 | 1 | 51.9 |
| 0910044-006A | WC-2-SED-B | Cyanide, To | 0.37 | 1 | | 10/20/2009 | 0:00 | 10/20/2009 | 11:40 | 1 | 51.9 |
| 0910044-007A | WC-2-SED-C | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-007A | WC-2-SED-C | Aluminum | 8.8 | 22 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Iron | 2.2 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Lead | 0.88 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Magnesium | 13 | 220 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Manganese | 0.22 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Nickel | 0.44 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Potassium | 44 | 1100 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Silver | 0.44 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Sodium | 8.8 | 220 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Thallium | 1.1 | 4.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Antimony | 0.66 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Arsenic | 0.88 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Barium | 0.44 | 22 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Beryllium | 0.044 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Cadmium | 0.22 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Chromium | 0.44 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Cobalt | 0.88 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-007A | WC-2-SED-C | Copper | 0.44 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Vanadium | 0.44 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Zinc | 1.3 | 4.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Calcium | 8.8 | 220 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Selenium | 0.55 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:39 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Mercury | 0.018 | 0.22 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:09 | 1 | 54.4 |
| 0910044-007A | WC-2-SED-C | Cyanide, To | 0.39 | 1.1 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 54.4 |
| 0910044-008A | WC-3-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-008A | WC-3-SED-A | Aluminum | 13 | 32 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Iron | 3.2 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Lead | 1.3 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Magnesium | 19 | 320 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Manganese | 0.32 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Nickel | 0.65 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Potassium | 65 | 1600 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Silver | 0.65 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Sodium | 13 | 320 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Thallium | 1.6 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Antimony | 0.97 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Arsenic | 1.3 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Barium | 0.65 | 32 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Beryllium | 0.065 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Cadmium | 0.32 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Chromium | 0.65 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Cobalt | 1.3 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Copper | 0.65 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Vanadium | 0.65 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Zinc | 1.9 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Calcium | 13 | 320 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Selenium | 0.81 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:43 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Mercury | 0.027 | 0.32 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:11 | 1 | 69.1 |
| 0910044-008A | WC-3-SED-A | Cyanide, To | 0.58 | 1.6 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 69.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-009A | WC-3-SED-B | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-009A | WC-3-SED-B | Aluminum | 8.3 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Iron | 2.1 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Lead | 0.83 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Magnesium | 12 | 210 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Manganese | 0.21 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Nickel | 0.42 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Potassium | 42 | 1000 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Silver | 0.42 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Sodium | 8.3 | 210 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Thallium | 1 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Antimony | 0.62 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Arsenic | 0.83 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Barium | 0.42 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Beryllium | 0.042 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Cadmium | 0.21 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Chromium | 0.42 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Cobalt | 0.83 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Copper | 0.42 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Vanadium | 0.42 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Zinc | 1.2 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Calcium | 8.3 | 210 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Selenium | 0.52 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:46 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Mercury | 0.017 | 0.21 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:18 | 1 | 51.9 |
| 0910044-009A | WC-3-SED-B | Mercury | 0.35 | 4.2 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:10 | 20 | 51.9 |
| 0910044-009A | WC-3-SED-B | Cyanide, To | 0.37 | 1 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 51.9 |
| 0910044-010A | WC-3-SED-C | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-010A | WC-3-SED-C | Aluminum | 7.9 | 20 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Iron | 2 | 9.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Lead | 0.79 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Magnesium | 12 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Manganese | 0.2 | 9.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-010A | WC-3-SED-C | Nickel | 0.39 | 9.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Potassium | 39 | 980 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Silver | 0.39 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Sodium | 7.9 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Thallium | 0.98 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Antimony | 0.59 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Arsenic | 0.79 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Barium | 0.39 | 20 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Beryllium | 0.039 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Cadmium | 0.2 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Chromium | 0.39 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Cobalt | 0.79 | 9.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Copper | 0.39 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Vanadium | 0.39 | 9.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Zinc | 1.2 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Calcium | 7.9 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Selenium | 0.49 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:50 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Mercury | 0.016 | 0.2 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:20 | 1 | 49.1 |
| 0910044-010A | WC-3-SED-C | Cyanide, To | 0.35 | 0.98 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 49.1 |
| 0910044-012A | WC-4-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-012A | WC-4-SED-A | Aluminum | 5.1 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Iron | 1.3 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Lead | 0.51 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Magnesium | 7.7 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Manganese | 0.13 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Nickel | 0.26 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Potassium | 26 | 640 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Silver | 0.26 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Sodium | 5.1 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Thallium | 0.64 | 2.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Antimony | 0.39 | 7.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Arsenic | 0.51 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-012A | WC-4-SED-A | Barium | 0.26 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Beryllium | 0.026 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Cadmium | 0.13 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Chromium | 0.26 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Cobalt | 0.51 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Copper | 0.26 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Vanadium | 0.26 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Zinc | 0.77 | 2.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Calcium | 5.1 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Selenium | 0.32 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:54 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Mercury | 0.011 | 0.13 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:22 | 1 | 22.1 |
| 0910044-012A | WC-4-SED-A | Cyanide, To | 0.23 | 0.64 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 22.1 |
| 0910044-013A | WC-4-SED-B | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-013A | WC-4-SED-B | Aluminum | 6.2 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Iron | 1.5 | 7.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Lead | 0.62 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Magnesium | 9.3 | 150 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Manganese | 0.15 | 7.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Nickel | 0.31 | 7.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Potassium | 31 | 770 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Silver | 0.31 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Sodium | 6.2 | 150 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Thallium | 0.77 | 3.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Antimony | 0.46 | 9.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Arsenic | 0.62 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Barium | 0.31 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Beryllium | 0.031 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Cadmium | 0.15 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Chromium | 0.31 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Cobalt | 0.62 | 7.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Copper | 0.31 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Vanadium | 0.31 | 7.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-013A | WC-4-SED-B | Zinc | 0.93 | 3.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Calcium | 6.2 | 150 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Selenium | 0.39 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 13:57 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Mercury | 0.013 | 0.15 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:24 | 1 | 35.2 |
| 0910044-013A | WC-4-SED-B | Cyanide, To | 0.28 | 0.77 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 35.2 |
| 0910044-013ADUP | WC-4-SED-BL | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-013AMS | WC-4-SED-BM | Aluminum | 6.2 | 15 | 283 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Iron | 1.5 | 7.7 | 151 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Lead | 0.62 | 1.5 | 99.4 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Magnesium | 9.3 | 150 | 96.7 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Manganese | 0.15 | 7.7 | 91.2 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Nickel | 0.31 | 7.7 | 98.1 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Potassium | 31 | 770 | 94.9 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Silver | 0.31 | 1.5 | 94.5 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Sodium | 6.2 | 150 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Thallium | 0.77 | 3.1 | 94 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Antimony | 0.46 | 9.3 | 45 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Arsenic | 0.62 | 1.5 | 97.9 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Barium | 0.31 | 15 | 95.9 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Beryllium | 0.031 | 1.5 | 98.5 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Cadmium | 0.15 | 1.5 | 95.6 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Chromium | 0.31 | 1.5 | 97.5 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Cobalt | 0.62 | 7.7 | 97.6 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Copper | 0.31 | 1.5 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Vanadium | 0.31 | 7.7 | 96.6 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Zinc | 0.93 | 3.1 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Calcium | 6.2 | 150 | 96.9 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Selenium | 0.39 | 1.5 | 93.5 | 10/15/2009 | 0:00 | 10/19/2009 | 14:01 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Mercury | 0.013 | 0.15 | 95.5 | 10/19/2009 | 11:00 | 10/19/2009 | 15:26 | 1 | 35.2 |
| 0910044-013AMS | WC-4-SED-BM | Cyanide, To | 0.28 | 0.77 | 58.7 | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BM | Aluminum | 6.2 | 15 | 296 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BM | Iron | 1.5 | 7.7 | 229 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-013AMSD | WC-4-SED-BN | Lead | 0.62 | 1.5 | 99.3 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Magnesium | 9.3 | 150 | 99.6 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Manganese | 0.15 | 7.7 | 91.5 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Nickel | 0.31 | 7.7 | 98.7 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Potassium | 31 | 770 | 93.4 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Silver | 0.31 | 1.5 | 94.8 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Sodium | 6.2 | 150 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Thallium | 0.77 | 3.1 | 95.5 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Antimony | 0.46 | 9.3 | 46 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Arsenic | 0.62 | 1.5 | 98.4 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Barium | 0.31 | 15 | 96.9 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Beryllium | 0.031 | 1.5 | 99.2 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Cadmium | 0.15 | 1.5 | 96 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Chromium | 0.31 | 1.5 | 98.5 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Cobalt | 0.62 | 7.7 | 97.9 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Copper | 0.31 | 1.5 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Vanadium | 0.31 | 7.7 | 97.7 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Zinc | 0.93 | 3.1 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Calcium | 6.2 | 150 | 98.1 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Selenium | 0.39 | 1.5 | 93.3 | 10/15/2009 | 0:00 | 10/19/2009 | 14:04 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Mercury | 0.013 | 0.15 | 92 | 10/19/2009 | 11:00 | 10/19/2009 | 15:28 | 1 | 35.2 |
| 0910044-013AMSD | WC-4-SED-BN | Cyanide, To | 0.28 | 0.77 | 63.7 | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 35.2 |
| 0910044-014A | WC-4-SED-C | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-014A | WC-4-SED-C | Aluminum | 5.6 | 14 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Iron | 1.4 | 7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Lead | 0.56 | 1.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Magnesium | 8.3 | 140 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Manganese | 0.14 | 7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Nickel | 0.28 | 7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Potassium | 28 | 700 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Silver | 0.28 | 1.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Sodium | 5.6 | 140 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-014A | WC-4-SED-C | Thallium | 0.7 | 2.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Antimony | 0.42 | 8.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Arsenic | 0.56 | 1.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Barium | 0.28 | 14 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Beryllium | 0.028 | 1.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Cadmium | 0.14 | 1.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Chromium | 0.28 | 1.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Cobalt | 0.56 | 7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Copper | 0.28 | 1.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Vanadium | 0.28 | 7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Zinc | 0.83 | 2.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Calcium | 5.6 | 140 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Selenium | 0.35 | 1.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:22 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Mercury | 0.012 | 0.14 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:31 | 1 | 28.1 |
| 0910044-014A | WC-4-SED-C | Cyanide, To | 0.25 | 0.7 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 28.1 |
| 0910044-015A | WC-5-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-015A | WC-5-SED-A | Aluminum | 6.4 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Iron | 1.6 | 8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Lead | 0.64 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Magnesium | 9.6 | 160 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Manganese | 0.16 | 8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Nickel | 0.32 | 8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Potassium | 32 | 800 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Silver | 0.32 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Sodium | 6.4 | 160 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Thallium | 0.8 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Antimony | 0.48 | 9.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Arsenic | 0.64 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Barium | 0.32 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Beryllium | 0.032 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Cadmium | 0.16 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Chromium | 0.32 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-015A | WC-5-SED-A | Cobalt | 0.64 | 8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Copper | 0.32 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Vanadium | 0.32 | 8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Zinc | 0.96 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Calcium | 6.4 | 160 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Selenium | 0.4 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:25 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Mercury | 0.013 | 0.16 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:33 | 1 | 37.8 |
| 0910044-015A | WC-5-SED-A | Cyanide, To | 0.29 | 0.8 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 37.8 |
| 0910044-016A | WC-5-SED-B | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-016A | WC-5-SED-B | Aluminum | 7 | 17 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Iron | 1.7 | 8.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Lead | 0.7 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Magnesium | 10 | 170 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Manganese | 0.17 | 8.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Nickel | 0.35 | 8.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Potassium | 35 | 870 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Silver | 0.35 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Sodium | 7 | 170 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Thallium | 0.87 | 3.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Antimony | 0.52 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Arsenic | 0.7 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Barium | 0.35 | 17 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Beryllium | 0.035 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Cadmium | 0.17 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Chromium | 0.35 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Cobalt | 0.7 | 8.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Copper | 0.35 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Vanadium | 0.35 | 8.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Zinc | 1 | 3.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Calcium | 7 | 170 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Selenium | 0.44 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:29 | 1 | 42.6 |
| 0910044-016A | WC-5-SED-B | Mercury | 0.015 | 0.17 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:35 | 1 | 42.6 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-016A | WC-5-SED-B | Mercury | 0.15 | 1.7 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:12 | 10 | 42.6 |
| 0910044-016A | WC-5-SED-B | Cyanide, To | 0.31 | 0.87 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 42.6 |
| 0910044-017A | WC-5-SED-C | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-017A | WC-5-SED-C | Aluminum | 8.6 | 22 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Iron | 2.2 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Lead | 0.86 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Magnesium | 13 | 220 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Manganese | 0.22 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Nickel | 0.43 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Potassium | 43 | 1100 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Silver | 0.43 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Sodium | 8.6 | 220 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Thallium | 1.1 | 4.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Antimony | 0.65 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Arsenic | 0.86 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Barium | 0.43 | 22 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Beryllium | 0.043 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Cadmium | 0.22 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Chromium | 0.43 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Cobalt | 0.86 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Copper | 0.43 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Vanadium | 0.43 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Zinc | 1.3 | 4.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Zinc | 6.5 | 22 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:14 | 5 | 53.5 |
| 0910044-017A | WC-5-SED-C | Calcium | 8.6 | 220 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Selenium | 0.54 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:33 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Mercury | 0.018 | 0.22 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:37 | 1 | 53.5 |
| 0910044-017A | WC-5-SED-C | Mercury | 0.36 | 4.3 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:15 | 20 | 53.5 |
| 0910044-017A | WC-5-SED-C | Cyanide, To | 0.39 | 1.1 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 53.5 |
| 0910044-018A | WC-6-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-018A | WC-6-SED-A | Aluminum | 16 | 39 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Iron | 3.9 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-018A | WC-6-SED-A | Lead | 1.6 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Magnesium | 23 | 390 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Manganese | 0.39 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Nickel | 0.78 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Potassium | 78 | 1900 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Silver | 0.78 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Sodium | 16 | 390 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Thallium | 1.9 | 7.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Antimony | 1.2 | 23 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Arsenic | 1.6 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Barium | 0.78 | 39 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Beryllium | 0.078 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Cadmium | 0.39 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Chromium | 0.78 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Cobalt | 1.6 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Copper | 0.78 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Vanadium | 0.78 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Zinc | 2.3 | 7.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Calcium | 16 | 390 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Selenium | 0.97 | 3.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:36 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Mercury | 0.032 | 0.39 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:44 | 1 | 74.2 |
| 0910044-018A | WC-6-SED-A | Cyanide, To | 0.7 | 1.9 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 74.2 |
| 0910044-019A | WC-6-SED-B | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-019A | WC-6-SED-B | Aluminum | 12 | 30 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Iron | 3 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Lead | 1.2 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Magnesium | 18 | 300 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Manganese | 0.3 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Nickel | 0.59 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Potassium | 59 | 1500 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Silver | 0.59 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Sodium | 12 | 300 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-019A | WC-6-SED-B | Thallium | 1.5 | 5.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Antimony | 0.89 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Arsenic | 1.2 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Barium | 0.59 | 30 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Beryllium | 0.059 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Cadmium | 0.3 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Chromium | 0.59 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Cobalt | 1.2 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Copper | 0.59 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Vanadium | 0.59 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Zinc | 1.8 | 5.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Calcium | 12 | 300 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Selenium | 0.74 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:40 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Mercury | 0.025 | 0.3 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:46 | 1 | 66.2 |
| 0910044-019A | WC-6-SED-B | Mercury | 0.25 | 3 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:17 | 10 | 66.2 |
| 0910044-019A | WC-6-SED-B | Cyanide, To | 0.53 | 1.5 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 66.2 |
| 0910044-020A | WC-6-SED-C | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-020A | WC-6-SED-C | Aluminum | 9.5 | 24 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Iron | 2.4 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Lead | 0.95 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Magnesium | 14 | 240 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Manganese | 0.24 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Nickel | 0.48 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Potassium | 48 | 1200 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Silver | 0.48 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Sodium | 9.5 | 240 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Thallium | 1.2 | 4.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Antimony | 0.71 | 14 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Arsenic | 0.95 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Barium | 0.48 | 24 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Beryllium | 0.048 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Cadmium | 0.24 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-020A | WC-6-SED-C | Chromium | 0.48 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Cobalt | 0.95 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Copper | 0.48 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Vanadium | 0.48 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Zinc | 1.4 | 4.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Calcium | 9.5 | 240 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Selenium | 0.59 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 14:43 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Mercury | 0.2 | 2.4 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:19 | 10 | 57.9 |
| 0910044-020A | WC-6-SED-C | Mercury | 0.02 | 0.24 | | 10/19/2009 | 11:00 | 10/19/2009 | 15:48 | 1 | 57.9 |
| 0910044-020A | WC-6-SED-C | Cyanide, To | 0.43 | 1.2 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 57.9 |
| 0910044-021A | WC-7-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-021A | WC-7-SED-A | Aluminum | 17 | 42 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Iron | 4.2 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Lead | 1.7 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Magnesium | 25 | 420 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Manganese | 0.42 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Nickel | 0.84 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Potassium | 84 | 2100 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Silver | 0.84 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Sodium | 17 | 420 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Thallium | 2.1 | 8.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Antimony | 1.3 | 25 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Arsenic | 1.7 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Barium | 0.84 | 42 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Beryllium | 0.084 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Cadmium | 0.42 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Chromium | 0.84 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Cobalt | 1.7 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Copper | 0.84 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Vanadium | 0.84 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Zinc | 2.5 | 8.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Calcium | 17 | 420 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-021A | WC-7-SED-A | Selenium | 1.1 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:22 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Mercury | 0.035 | 0.42 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:17 | 1 | 76.2 |
| 0910044-021A | WC-7-SED-A | Cyanide, To | 0.76 | 2.1 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 76.2 |
| 0910044-022A | WC-7-SED-B | Percent Moi | 0 | 1 | | 10/15/2009 | 13:15 | 10/15/2009 | 13:15 | 1 | 0 |
| 0910044-022A | WC-7-SED-B | Aluminum | 15 | 38 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Iron | 3.8 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Lead | 1.5 | 3.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Magnesium | 23 | 380 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Manganese | 0.38 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Nickel | 0.77 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Potassium | 77 | 1900 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Silver | 0.77 | 3.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Sodium | 15 | 380 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Thallium | 1.9 | 7.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Antimony | 1.1 | 23 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Arsenic | 1.5 | 3.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Barium | 0.77 | 38 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Beryllium | 0.077 | 3.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Cadmium | 0.38 | 3.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Chromium | 0.77 | 3.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Cobalt | 1.5 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Copper | 0.77 | 3.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Vanadium | 0.77 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Zinc | 2.3 | 7.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Calcium | 15 | 380 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Selenium | 0.96 | 3.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:25 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Mercury | 0.032 | 0.38 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:19 | 1 | 73.9 |
| 0910044-022A | WC-7-SED-B | Mercury | 0.64 | 7.7 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:30 | 20 | 73.9 |
| 0910044-022A | WC-7-SED-B | Cyanide, To | 0.69 | 1.9 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 73.9 |
| 0910044-023A | WC-7-SED-C | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-023A | WC-7-SED-C | Aluminum | 9.9 | 25 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Iron | 2.5 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-023A | WC-7-SED-C | Lead | 0.99 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Magnesium | 15 | 250 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Manganese | 0.25 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Nickel | 0.49 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Potassium | 49 | 1200 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Silver | 0.49 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Sodium | 9.9 | 250 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Thallium | 1.2 | 4.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Antimony | 0.74 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Arsenic | 0.99 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Barium | 0.49 | 25 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Beryllium | 0.049 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Cadmium | 0.25 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Chromium | 0.49 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Cobalt | 0.99 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Copper | 0.49 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Vanadium | 0.49 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Zinc | 1.5 | 4.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Calcium | 9.9 | 250 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Selenium | 0.62 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:29 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Mercury | 0.021 | 0.25 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:21 | 1 | 59.5 |
| 0910044-023A | WC-7-SED-C | Cyanide, To | 0.44 | 1.2 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 59.5 |
| 0910044-023ADUP | WC-7-SED-Cl | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-025A | WC-8-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-025A | WC-8-SED-A | Aluminum | 8 | 20 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Iron | 2 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Lead | 0.8 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Magnesium | 12 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Manganese | 0.2 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Nickel | 0.4 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Potassium | 40 | 1000 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Silver | 0.4 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-025A | WC-8-SED-A | Sodium | 8 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Thallium | 1 | 4 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Antimony | 0.6 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Arsenic | 0.8 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Barium | 0.4 | 20 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Beryllium | 0.04 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Cadmium | 0.2 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Chromium | 0.4 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Cobalt | 0.8 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Copper | 0.4 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Vanadium | 0.4 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Zinc | 1.2 | 4 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Calcium | 8 | 200 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Selenium | 0.5 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:32 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Mercury | 0.17 | 2 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:32 | 10 | 50.1 |
| 0910044-025A | WC-8-SED-A | Mercury | 0.017 | 0.2 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:23 | 1 | 50.1 |
| 0910044-025A | WC-8-SED-A | Cyanide, To | 0.36 | 1 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Aluminum | 8 | 20 | 533 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Iron | 2 | 10 | 425 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Lead | 0.8 | 2 | 91.2 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Magnesium | 12 | 200 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Manganese | 0.2 | 10 | 112 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Nickel | 0.4 | 10 | 99 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Potassium | 40 | 1000 | 98 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Silver | 0.4 | 2 | 94.6 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Sodium | 8 | 200 | 98.9 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Thallium | 1 | 4 | 94.8 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Antimony | 0.6 | 12 | 46.9 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Arsenic | 0.8 | 2 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Barium | 0.4 | 20 | 97 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Beryllium | 0.04 | 2 | 99.8 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AM | Cadmium | 0.2 | 2 | 96 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-025AMS | WC-8-SED-AN | Chromium | 0.4 | 2 | 91.4 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AN | Cobalt | 0.8 | 10 | 98.5 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AN | Copper | 0.4 | 2 | 99.6 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AN | Vanadium | 0.4 | 10 | 99.9 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AN | Zinc | 1.2 | 4 | 91.1 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AN | Calcium | 8 | 200 | 104 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AN | Selenium | 0.5 | 2 | 93.1 | 10/15/2009 | 0:00 | 10/19/2009 | 15:36 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AN | Mercury | 0.017 | 0.2 | 110 | 10/19/2009 | 11:00 | 10/19/2009 | 16:25 | 1 | 50.1 |
| 0910044-025AMS | WC-8-SED-AN | Mercury | 0.17 | 2 | 302 | 10/19/2009 | 11:00 | 10/20/2009 | 11:34 | 10 | 50.1 |
| 0910044-025AMS | WC-8-SED-AN | Cyanide, To | 0.36 | 1 | 56.5 | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Aluminum | 8 | 20 | 610 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Iron | 2 | 10 | 428 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Lead | 0.8 | 2 | 105 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Magnesium | 12 | 200 | 108 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Manganese | 0.2 | 10 | 116 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Nickel | 0.4 | 10 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Potassium | 40 | 1000 | 98.3 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Silver | 0.4 | 2 | 97.3 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Sodium | 8 | 200 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Thallium | 1 | 4 | 97.9 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Antimony | 0.6 | 12 | 51.5 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Arsenic | 0.8 | 2 | 103 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Barium | 0.4 | 20 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Beryllium | 0.04 | 2 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Cadmium | 0.2 | 2 | 98.3 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Chromium | 0.4 | 2 | 107 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Cobalt | 0.8 | 10 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Copper | 0.4 | 2 | 109 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Vanadium | 0.4 | 10 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Zinc | 1.2 | 4 | 122 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Calcium | 8 | 200 | 109 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AN | Selenium | 0.5 | 2 | 94.4 | 10/15/2009 | 0:00 | 10/19/2009 | 15:39 | 1 | 50.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-025AMSD | WC-8-SED-AM | Mercury | 0.017 | 0.2 | 137 | 10/19/2009 | 11:00 | 10/19/2009 | 16:32 | 1 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AM | Mercury | 0.17 | 2 | 388 | 10/19/2009 | 11:00 | 10/20/2009 | 11:36 | 10 | 50.1 |
| 0910044-025AMSD | WC-8-SED-AM | Cyanide, To | 0.36 | 1 | 49.5 | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 50.1 |
| 0910044-026A | WC-8-SED-B | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-026A | WC-8-SED-B | Aluminum | 6.6 | 17 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Iron | 1.7 | 8.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Lead | 0.66 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Magnesium | 9.9 | 170 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Manganese | 0.17 | 8.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Nickel | 0.33 | 8.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Potassium | 33 | 830 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Silver | 0.33 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Sodium | 6.6 | 170 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Thallium | 0.83 | 3.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Antimony | 0.5 | 9.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Arsenic | 0.66 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Barium | 0.33 | 17 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Beryllium | 0.033 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Cadmium | 0.17 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Chromium | 0.33 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Cobalt | 0.66 | 8.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Copper | 0.33 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Vanadium | 0.33 | 8.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Zinc | 0.99 | 3.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Calcium | 6.6 | 170 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Selenium | 0.41 | 1.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:01 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Mercury | 0.014 | 0.17 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:34 | 1 | 39.5 |
| 0910044-026A | WC-8-SED-B | Cyanide, To | 0.3 | 0.83 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 39.5 |
| 0910044-027A | WC-8-SED-C | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-027A | WC-8-SED-C | Aluminum | 6.6 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Iron | 1.6 | 8.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Lead | 0.66 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-027A | WC-8-SED-C | Magnesium | 9.9 | 160 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Manganese | 0.16 | 8.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Nickel | 0.33 | 8.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Potassium | 33 | 820 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Silver | 0.33 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Sodium | 6.6 | 160 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Thallium | 0.82 | 3.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Antimony | 0.49 | 9.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Arsenic | 0.66 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Barium | 0.33 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Beryllium | 0.033 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Cadmium | 0.16 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Chromium | 0.33 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Cobalt | 0.66 | 8.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Copper | 0.33 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Vanadium | 0.33 | 8.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Zinc | 0.99 | 3.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Calcium | 6.6 | 160 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Selenium | 0.41 | 1.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:05 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Mercury | 0.014 | 0.16 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:36 | 1 | 39.1 |
| 0910044-027A | WC-8-SED-C | Cyanide, To | 0.3 | 0.82 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 39.1 |
| 0910044-028A | WC-9-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-028A | WC-9-SED-A | Aluminum | 13 | 32 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Iron | 3.2 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Lead | 1.3 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Magnesium | 19 | 320 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Manganese | 0.32 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Nickel | 0.64 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Potassium | 64 | 1600 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Silver | 0.64 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Sodium | 13 | 320 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Thallium | 1.6 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-028A | WC-9-SED-A | Antimony | 0.96 | 19 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Arsenic | 1.3 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Barium | 0.64 | 32 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Beryllium | 0.064 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Cadmium | 0.32 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Chromium | 0.64 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Cobalt | 1.3 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Copper | 0.64 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Vanadium | 0.64 | 16 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Zinc | 1.9 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Calcium | 13 | 320 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Selenium | 0.8 | 3.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:08 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Mercury | 0.027 | 0.32 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:45 | 1 | 68.7 |
| 0910044-028A | WC-9-SED-A | Cyanide, To | 0.58 | 1.6 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 68.7 |
| 0910044-029A | WC-9-SED-B | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-029A | WC-9-SED-B | Aluminum | 8.8 | 22 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Iron | 2.2 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Lead | 0.88 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Magnesium | 13 | 220 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Manganese | 0.22 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Nickel | 0.44 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Potassium | 44 | 1100 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Silver | 0.44 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Sodium | 8.8 | 220 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Thallium | 1.1 | 4.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Antimony | 0.66 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Arsenic | 0.88 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Barium | 0.44 | 22 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Beryllium | 0.044 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Cadmium | 0.22 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Chromium | 0.44 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Cobalt | 0.88 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-029A | WC-9-SED-B | Copper | 0.44 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Vanadium | 0.44 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Zinc | 1.3 | 4.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Calcium | 8.8 | 220 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Selenium | 0.55 | 2.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:12 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Mercury | 0.018 | 0.22 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:40 | 1 | 54.6 |
| 0910044-029A | WC-9-SED-B | Mercury | 0.18 | 2.2 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:38 | 10 | 54.6 |
| 0910044-029A | WC-9-SED-B | Cyanide, To | 0.4 | 1.1 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 54.6 |
| 0910044-030A | WC-9-SED-C | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-030A | WC-9-SED-C | Aluminum | 8.4 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Iron | 2.1 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Lead | 0.84 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Magnesium | 13 | 210 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Manganese | 0.21 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Nickel | 0.42 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Potassium | 42 | 1000 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Silver | 0.42 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Sodium | 8.4 | 210 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Thallium | 1 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Antimony | 0.63 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Arsenic | 0.84 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Barium | 0.42 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Beryllium | 0.042 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Cadmium | 0.21 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Chromium | 0.42 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Cobalt | 0.84 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Copper | 0.42 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Vanadium | 0.42 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Zinc | 1.3 | 4.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Zinc | 6.3 | 21 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:19 | 5 | 52.3 |
| 0910044-030A | WC-9-SED-C | Calcium | 8.4 | 210 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Selenium | 0.52 | 2.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:15 | 1 | 52.3 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-030A | WC-9-SED-C | Mercury | 0.018 | 0.21 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:43 | 1 | 52.3 |
| 0910044-030A | WC-9-SED-C | Mercury | 0.88 | 10 | | 10/19/2009 | 11:00 | 10/20/2009 | 12:19 | 50 | 52.3 |
| 0910044-030A | WC-9-SED-C | Cyanide, To | 0.38 | 1 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 52.3 |
| 0910044-031A | WC-10-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-031A | WC-10-SED-A | Aluminum | 7.2 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Iron | 1.8 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Lead | 0.72 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Magnesium | 11 | 180 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Manganese | 0.18 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Nickel | 0.36 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Potassium | 36 | 900 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Silver | 0.36 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Sodium | 7.2 | 180 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Thallium | 0.9 | 3.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Antimony | 0.54 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Arsenic | 0.72 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Barium | 0.36 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Beryllium | 0.036 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Cadmium | 0.18 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Chromium | 0.36 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Cobalt | 0.72 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Copper | 0.36 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Vanadium | 0.36 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Zinc | 1.1 | 3.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Calcium | 7.2 | 180 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Selenium | 0.45 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:19 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Mercury | 0.015 | 0.18 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:45 | 1 | 44.7 |
| 0910044-031A | WC-10-SED-A | Cyanide, To | 0.33 | 0.9 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 44.7 |
| 0910044-032A | WC-10-SED-E | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-032A | WC-10-SED-E | Aluminum | 4.6 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Iron | 1.2 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Lead | 0.46 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-032A | WC-10-SED-E | Magnesium | 6.9 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Manganese | 0.12 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Nickel | 0.23 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Potassium | 23 | 580 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Silver | 0.23 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Sodium | 4.6 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Thallium | 0.58 | 2.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Antimony | 0.35 | 6.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Arsenic | 0.46 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Barium | 0.23 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Beryllium | 0.023 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Cadmium | 0.12 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Chromium | 0.23 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Cobalt | 0.46 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Copper | 0.23 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Vanadium | 0.23 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Zinc | 0.69 | 2.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Calcium | 4.6 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Selenium | 0.29 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:23 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Mercury | 0.0096 | 0.12 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:47 | 1 | 13.1 |
| 0910044-032A | WC-10-SED-E | Cyanide, To | 0.21 | 0.58 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 13.1 |
| 0910044-033A | WC-11-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-033A | WC-11-SED-A | Aluminum | 4.7 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Iron | 1.2 | 5.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Lead | 0.47 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Magnesium | 7.1 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Manganese | 0.12 | 5.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Nickel | 0.24 | 5.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Potassium | 24 | 590 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Silver | 0.24 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Sodium | 4.7 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Thallium | 0.59 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-033A | WC-11-SED-A | Antimony | 0.36 | 7.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Arsenic | 0.47 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Barium | 0.24 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Beryllium | 0.024 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Cadmium | 0.12 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Chromium | 0.24 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Cobalt | 0.47 | 5.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Copper | 0.24 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Vanadium | 0.24 | 5.9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Zinc | 0.71 | 2.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Calcium | 4.7 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Selenium | 0.3 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:26 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Mercury | 0.0099 | 0.12 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:49 | 1 | 15.7 |
| 0910044-033A | WC-11-SED-A | Cyanide, To | 0.21 | 0.59 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 15.7 |
| 0910044-034A | WC-11-SED-E | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-034A | WC-11-SED-E | Aluminum | 7.2 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Iron | 1.8 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Lead | 0.72 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Magnesium | 11 | 180 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Manganese | 0.18 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Nickel | 0.36 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Potassium | 36 | 900 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Silver | 0.36 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Sodium | 7.2 | 180 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Thallium | 0.9 | 3.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Antimony | 0.54 | 11 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Arsenic | 0.72 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Barium | 0.36 | 18 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Beryllium | 0.036 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Cadmium | 0.18 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Chromium | 0.36 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Cobalt | 0.72 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-034A | WC-11-SED-E | Copper | 0.36 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Vanadium | 0.36 | 9 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Zinc | 1.1 | 3.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Calcium | 7.2 | 180 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Selenium | 0.45 | 1.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:30 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Mercury | 0.015 | 0.18 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:51 | 1 | 44.7 |
| 0910044-034A | WC-11-SED-E | Cyanide, To | 0.33 | 0.9 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 44.7 |
| 0910044-035A | WC-12-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-035A | WC-12-SED-A | Aluminum | 6.1 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Iron | 1.5 | 7.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Lead | 0.61 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Magnesium | 9.1 | 150 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Manganese | 0.15 | 7.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Nickel | 0.3 | 7.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Potassium | 30 | 760 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Silver | 0.3 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Sodium | 6.1 | 150 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Thallium | 0.76 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Antimony | 0.45 | 9.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Arsenic | 0.61 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Barium | 0.3 | 15 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Beryllium | 0.03 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Cadmium | 0.15 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Chromium | 0.3 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Cobalt | 0.61 | 7.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Copper | 0.3 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Vanadium | 0.3 | 7.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Zinc | 0.91 | 3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Calcium | 6.1 | 150 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Selenium | 0.38 | 1.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:33 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Mercury | 0.013 | 0.15 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:58 | 1 | 34 |
| 0910044-035A | WC-12-SED-A | Cyanide, To | 0.27 | 0.76 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 34 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-036A | WC-12-SED-E | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-036A | WC-12-SED-E | Aluminum | 5.2 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Iron | 1.3 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Lead | 0.52 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Magnesium | 7.8 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Manganese | 0.13 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Nickel | 0.26 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Potassium | 26 | 650 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Silver | 0.26 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Sodium | 5.2 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Thallium | 0.65 | 2.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Antimony | 0.39 | 7.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Arsenic | 0.52 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Barium | 0.26 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Beryllium | 0.026 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Cadmium | 0.13 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Chromium | 0.26 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Cobalt | 0.52 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Copper | 0.26 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Vanadium | 0.26 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Zinc | 0.78 | 2.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Calcium | 5.2 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Selenium | 0.33 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:47 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Mercury | 0.011 | 0.13 | | 10/19/2009 | 11:00 | 10/19/2009 | 17:00 | 1 | 23.5 |
| 0910044-036A | WC-12-SED-E | Cyanide, To | 0.24 | 0.65 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 23.5 |
| 0910044-037A | WC-13-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-037A | WC-13-SED-A | Aluminum | 4.9 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Iron | 1.2 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Lead | 0.49 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Magnesium | 7.4 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Manganese | 0.12 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Nickel | 0.25 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-037A | WC-13-SED-A | Potassium | 25 | 610 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Silver | 0.25 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Sodium | 4.9 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Thallium | 0.61 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Antimony | 0.37 | 7.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Arsenic | 0.49 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Barium | 0.25 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Beryllium | 0.025 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Cadmium | 0.12 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Chromium | 0.25 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Cobalt | 0.49 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Copper | 0.25 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Vanadium | 0.25 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Zinc | 0.74 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Calcium | 4.9 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Selenium | 0.31 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:52 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Mercury | 0.01 | 0.12 | | 10/19/2009 | 11:00 | 10/19/2009 | 17:02 | 1 | 18.4 |
| 0910044-037A | WC-13-SED-A | Cyanide, To | 0.22 | 0.61 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-038A | WC-13-SED-E | Aluminum | 4.9 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Iron | 1.2 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Lead | 0.49 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Magnesium | 7.4 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Manganese | 0.12 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Nickel | 0.25 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Potassium | 25 | 610 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Silver | 0.25 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Sodium | 4.9 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Thallium | 0.61 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Antimony | 0.37 | 7.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Arsenic | 0.49 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Barium | 0.25 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-038A | WC-13-SED-E | Beryllium | 0.025 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Cadmium | 0.12 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Chromium | 0.25 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Cobalt | 0.49 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Copper | 0.25 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Vanadium | 0.25 | 6.1 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Zinc | 0.74 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Calcium | 4.9 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Selenium | 0.31 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 16:56 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Mercury | 0.01 | 0.12 | | 10/19/2009 | 11:00 | 10/19/2009 | 17:04 | 1 | 18.4 |
| 0910044-038A | WC-13-SED-E | Cyanide, To | 0.22 | 0.61 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 18.4 |
| 0910044-039A | WC-14-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-039A | WC-14-SED-A | Aluminum | 5.1 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Iron | 1.3 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Lead | 0.51 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Magnesium | 7.6 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Manganese | 0.13 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Nickel | 0.25 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Potassium | 25 | 640 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Silver | 0.25 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Sodium | 5.1 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Thallium | 0.64 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Antimony | 0.38 | 7.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Arsenic | 0.51 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Barium | 0.25 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Beryllium | 0.025 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Cadmium | 0.13 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Chromium | 0.25 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Cobalt | 0.51 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Copper | 0.25 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Vanadium | 0.25 | 6.4 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Zinc | 0.76 | 2.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-039A | WC-14-SED-A | Calcium | 5.1 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Selenium | 0.32 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:01 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Mercury | 0.011 | 0.13 | | 10/19/2009 | 11:00 | 10/19/2009 | 17:06 | 1 | 21.5 |
| 0910044-039A | WC-14-SED-A | Cyanide, To | 0.23 | 0.64 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 21.5 |
| 0910044-040A | WC-14-SED-E | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-040A | WC-14-SED-E | Aluminum | 4.6 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Iron | 1.2 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Lead | 0.46 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Magnesium | 7 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Manganese | 0.12 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Nickel | 0.23 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Potassium | 23 | 580 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Silver | 0.23 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Sodium | 4.6 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Thallium | 0.58 | 2.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Antimony | 0.35 | 7 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Arsenic | 0.46 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Barium | 0.23 | 12 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Beryllium | 0.023 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Cadmium | 0.12 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Chromium | 0.23 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Cobalt | 0.46 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Copper | 0.23 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Vanadium | 0.23 | 5.8 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Zinc | 0.7 | 2.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Calcium | 4.6 | 120 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Selenium | 0.29 | 1.2 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:05 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Mercury | 0.0097 | 0.12 | | 10/19/2009 | 11:00 | 10/19/2009 | 17:08 | 1 | 13.9 |
| 0910044-040A | WC-14-SED-E | Cyanide, To | 0.21 | 0.58 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 13.9 |
| 0910044-042A | WC-15-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-042A | WC-15-SED-A | Aluminum | 5.2 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Iron | 1.3 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-042A | WC-15-SED-A | Lead | 0.52 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Magnesium | 7.7 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Manganese | 0.13 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Nickel | 0.26 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Potassium | 26 | 650 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Silver | 0.26 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Sodium | 5.2 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Thallium | 0.65 | 2.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Antimony | 0.39 | 7.7 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Arsenic | 0.52 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Barium | 0.26 | 13 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Beryllium | 0.026 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Cadmium | 0.13 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Chromium | 0.26 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Cobalt | 0.52 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Copper | 0.26 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Vanadium | 0.26 | 6.5 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Zinc | 0.77 | 2.6 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Calcium | 5.2 | 130 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Selenium | 0.32 | 1.3 | | 10/15/2009 | 0:00 | 10/19/2009 | 17:10 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Mercury | 0.011 | 0.13 | | 10/19/2009 | 11:00 | 10/19/2009 | 17:11 | 1 | 22.5 |
| 0910044-042A | WC-15-SED-A | Mercury | 0.022 | 0.26 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:43 | 2 | 22.5 |
| 0910044-042A | WC-15-SED-A | Cyanide, To | 0.23 | 0.65 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:31 | 1 | 22.5 |
| 0910044-043A | WC-15-SED-E | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-043A | WC-15-SED-E | Aluminum | 6.2 | 15 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Iron | 1.5 | 7.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Lead | 0.62 | 1.5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Magnesium | 9.3 | 150 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Manganese | 0.15 | 7.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Nickel | 0.31 | 7.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Potassium | 31 | 770 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Silver | 0.31 | 1.5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-043A | WC-15-SED-E | Sodium | 6.2 | 150 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Thallium | 0.77 | 3.1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Antimony | 0.46 | 9.3 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Arsenic | 0.62 | 1.5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Barium | 0.31 | 15 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Beryllium | 0.031 | 1.5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Cadmium | 0.15 | 1.5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Chromium | 0.31 | 1.5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Cobalt | 0.62 | 7.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Copper | 0.31 | 1.5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Vanadium | 0.31 | 7.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Zinc | 0.93 | 3.1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Calcium | 6.2 | 150 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Selenium | 0.39 | 1.5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:38 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Mercury | 0.013 | 0.15 | | 10/19/2009 | 11:00 | 10/19/2009 | 13:53 | 1 | 35.3 |
| 0910044-043A | WC-15-SED-E | Cyanide, To | 0.28 | 0.77 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:31 | 1 | 35.3 |
| 0910044-045A | WC-2-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-045A | WC-2-SED-A | Aluminum | 15 | 37 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Iron | 3.7 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Lead | 1.5 | 3.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Magnesium | 22 | 370 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Manganese | 0.37 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Nickel | 0.74 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Potassium | 74 | 1900 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Silver | 0.74 | 3.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Sodium | 15 | 370 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Thallium | 1.9 | 7.4 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Antimony | 1.1 | 22 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Arsenic | 1.5 | 3.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Barium | 0.74 | 37 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Beryllium | 0.074 | 3.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Cadmium | 0.37 | 3.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-045A | WC-2-SED-A | Chromium | 0.74 | 3.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Cobalt | 1.5 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Copper | 0.74 | 3.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Vanadium | 0.74 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Zinc | 2.2 | 7.4 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Calcium | 15 | 370 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Selenium | 0.93 | 3.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:41 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Mercury | 0.031 | 0.37 | | 10/19/2009 | 11:00 | 10/19/2009 | 13:55 | 1 | 73.1 |
| 0910044-045A | WC-2-SED-A | Cyanide, To | 0.67 | 1.9 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:31 | 1 | 73.1 |
| 0910044-045ADUP | WC-2-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 14:00 | 10/15/2009 | 14:00 | 1 | 0 |
| 0910044-046A | WC-3-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 15:00 | 10/15/2009 | 15:00 | 1 | 0 |
| 0910044-046A | WC-3-SED-A | Aluminum | 13 | 32 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Iron | 3.2 | 16 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Lead | 1.3 | 3.2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Magnesium | 19 | 320 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Manganese | 0.32 | 16 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Nickel | 0.63 | 16 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Potassium | 63 | 1600 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Silver | 0.63 | 3.2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Sodium | 13 | 320 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Thallium | 1.6 | 6.3 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Antimony | 0.95 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Arsenic | 1.3 | 3.2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Barium | 0.63 | 32 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Beryllium | 0.063 | 3.2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Cadmium | 0.32 | 3.2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Chromium | 0.63 | 3.2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Cobalt | 1.3 | 16 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Copper | 0.63 | 3.2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Vanadium | 0.63 | 16 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Zinc | 1.9 | 6.3 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Calcium | 13 | 320 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910044-046A | WC-3-SED-A | Selenium | 0.79 | 3.2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:45 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Mercury | 0.026 | 0.32 | | 10/19/2009 | 11:00 | 10/19/2009 | 13:57 | 1 | 68.4 |
| 0910044-046A | WC-3-SED-A | Cyanide, To | 0.57 | 1.6 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:31 | 1 | 68.4 |
| 0910044-047A | WC-6-SED-A | Percent Moi | 0 | 1 | | 10/15/2009 | 15:00 | 10/15/2009 | 15:00 | 1 | 0 |
| 0910044-047A | WC-6-SED-A | Aluminum | 15 | 39 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Iron | 3.9 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Lead | 1.5 | 3.9 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Magnesium | 23 | 390 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Manganese | 0.39 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Nickel | 0.77 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Potassium | 77 | 1900 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Silver | 0.77 | 3.9 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Sodium | 15 | 390 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Thallium | 1.9 | 7.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Antimony | 1.2 | 23 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Arsenic | 1.5 | 3.9 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Barium | 0.77 | 39 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Beryllium | 0.077 | 3.9 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Cadmium | 0.39 | 3.9 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Chromium | 0.77 | 3.9 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Cobalt | 1.5 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Copper | 0.77 | 3.9 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Vanadium | 0.77 | 19 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Zinc | 2.3 | 7.7 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Calcium | 15 | 390 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Selenium | 0.97 | 3.9 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:48 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Mercury | 0.032 | 0.39 | | 10/19/2009 | 11:00 | 10/19/2009 | 13:59 | 1 | 74.1 |
| 0910044-047A | WC-6-SED-A | Cyanide, To | 0.69 | 1.9 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:31 | 1 | 74.1 |
| LCS-10139 | LCS-10139 | Aluminum | 4 | 10 | 95.7 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Iron | 1 | 5 | 99.2 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Lead | 0.4 | 1 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Magnesium | 6 | 100 | 98.8 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS-10139 | LCS-10139 | Manganese | 0.1 | 5 | 98.7 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Nickel | 0.2 | 5 | 99.8 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Potassium | 20 | 500 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Silver | 0.2 | 1 | 97.2 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Sodium | 4 | 100 | 99 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Thallium | 0.5 | 2 | 96.8 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Antimony | 0.3 | 6 | 105 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Arsenic | 0.4 | 1 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Barium | 0.2 | 10 | 95.8 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Beryllium | 0.02 | 1 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Cadmium | 0.1 | 1 | 98.4 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Chromium | 0.2 | 1 | 99.7 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Cobalt | 0.4 | 5 | 98.6 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Copper | 0.2 | 1 | 99.9 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Vanadium | 0.2 | 5 | 99.9 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Zinc | 0.6 | 2 | 103 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Calcium | 4 | 100 | 94.6 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10139 | LCS-10139 | Selenium | 0.25 | 1 | 97.5 | 10/15/2009 | 0:00 | 10/19/2009 | 12:48 | 1 | 0 |
| LCS-10140 | LCS-10140 | Aluminum | 4 | 10 | 94.7 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Iron | 1 | 5 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Lead | 0.4 | 1 | 102 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Magnesium | 6 | 100 | 98.4 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Manganese | 0.1 | 5 | 98.8 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Nickel | 0.2 | 5 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Potassium | 20 | 500 | 99 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Silver | 0.2 | 1 | 96.4 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Sodium | 4 | 100 | 98.4 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Thallium | 0.5 | 2 | 96.5 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Antimony | 0.3 | 6 | 105 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Arsenic | 0.4 | 1 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Barium | 0.2 | 10 | 95.7 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Beryllium | 0.02 | 1 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS-10140 | LCS-10140 | Cadmium | 0.1 | 1 | 98.4 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Chromium | 0.2 | 1 | 99.5 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Cobalt | 0.4 | 5 | 98.4 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Copper | 0.2 | 1 | 101 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Vanadium | 0.2 | 5 | 100 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Zinc | 0.6 | 2 | 103 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Calcium | 4 | 100 | 95.7 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10140 | LCS-10140 | Selenium | 0.25 | 1 | 98 | 10/15/2009 | 0:00 | 10/19/2009 | 15:18 | 1 | 0 |
| LCS-10148 | LCS-10148 | Aluminum | 4 | 10 | 103 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Iron | 1 | 5 | 108 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Lead | 0.4 | 1 | 105 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Magnesium | 6 | 100 | 102 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Manganese | 0.1 | 5 | 104 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Nickel | 0.2 | 5 | 103 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Potassium | 20 | 500 | 103 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Silver | 0.2 | 1 | 97.6 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Sodium | 4 | 100 | 101 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Thallium | 0.5 | 2 | 99 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Antimony | 0.3 | 6 | 107 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Arsenic | 0.4 | 1 | 104 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Barium | 0.2 | 10 | 99.3 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Beryllium | 0.02 | 1 | 104 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Cadmium | 0.1 | 1 | 101 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Chromium | 0.2 | 1 | 102 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Cobalt | 0.4 | 5 | 101 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Copper | 0.2 | 1 | 104 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Vanadium | 0.2 | 5 | 103 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Zinc | 0.6 | 2 | 106 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Calcium | 4 | 100 | 100 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10148 | LCS-10148 | Selenium | 0.25 | 1 | 101 | 10/16/2009 | 0:00 | 10/19/2009 | 10:34 | 1 | 0 |
| LCS-10155 | LCS-10155 | Mercury | 0.0084 | 0.1 | 92.2 | 10/19/2009 | 11:00 | 10/20/2009 | 11:08 | 1 | 0 |
| LCS-10155 | LCS-10155 | Mercury | 0.0084 | 0.1 | 95.1 | 10/19/2009 | 11:00 | 10/19/2009 | 14:52 | 1 | 0 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS-10156 | LCS-10156 | Mercury | 0.0084 | 0.1 | 90.2 | 10/19/2009 | 11:00 | 10/20/2009 | 11:23 | 1 | 0 |
| LCS-10156 | LCS-10156 | Mercury | 0.0084 | 0.1 | 91.3 | 10/19/2009 | 11:00 | 10/19/2009 | 16:15 | 1 | 0 |
| LCS-10157 | LCS-10157 | Mercury | 0.0084 | 0.1 | 94.6 | 10/19/2009 | 11:00 | 10/19/2009 | 13:44 | 1 | 0 |
| LCS-10163 | LCS-10163 | Cyanide, To | 0.18 | 0.5 | 93.5 | 10/20/2009 | 0:00 | 10/20/2009 | 11:40 | 1 | 0 |
| LCS-10174 | LCS-10174 | Cyanide, To | 0.18 | 0.5 | 89.9 | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 0 |
| LCS-10181 | LCS-10181 | Cyanide, To | 0.18 | 0.5 | 99.9 | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 0 |
| MB-10139 | MB-10139 | Aluminum | 4 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Iron | 1 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Lead | 0.4 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Magnesium | 6 | 100 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Manganese | 0.1 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Nickel | 0.2 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Potassium | 20 | 500 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Silver | 0.2 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Sodium | 4 | 100 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Thallium | 0.5 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Antimony | 0.3 | 6 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Arsenic | 0.4 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Barium | 0.2 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Beryllium | 0.02 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Cadmium | 0.1 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Chromium | 0.2 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Cobalt | 0.4 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Copper | 0.2 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Vanadium | 0.2 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Zinc | 0.6 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Calcium | 4 | 100 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10139 | MB-10139 | Selenium | 0.25 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 12:27 | 1 | 0 |
| MB-10140 | MB-10140 | Aluminum | 4 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Iron | 1 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Lead | 0.4 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Magnesium | 6 | 100 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MB-10140 | MB-10140 | Manganese | 0.1 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Nickel | 0.2 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Potassium | 20 | 500 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Silver | 0.2 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Sodium | 4 | 100 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Thallium | 0.5 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Antimony | 0.3 | 6 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Arsenic | 0.4 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Barium | 0.2 | 10 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Beryllium | 0.02 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Cadmium | 0.1 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Chromium | 0.2 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Cobalt | 0.4 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Copper | 0.2 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Vanadium | 0.2 | 5 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Zinc | 0.6 | 2 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Calcium | 4 | 100 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10140 | MB-10140 | Selenium | 0.25 | 1 | | 10/15/2009 | 0:00 | 10/19/2009 | 15:15 | 1 | 0 |
| MB-10148 | MB-10148 | Aluminum | 4 | 10 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Iron | 1 | 5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Lead | 0.4 | 1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Magnesium | 6 | 100 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Manganese | 0.1 | 5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Nickel | 0.2 | 5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Potassium | 20 | 500 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Silver | 0.2 | 1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Sodium | 4 | 100 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Thallium | 0.5 | 2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Antimony | 0.3 | 6 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Arsenic | 0.4 | 1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Barium | 0.2 | 10 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Beryllium | 0.02 | 1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |

| lab_sample_id | sys_sample_code | chemical_name | method_detection_limit | reporting_detection_limit | qc_spike_recovery | prep_date | prep_time | analysis_date | analysis_time | dilution_factor | percent_moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MB-10148 | MB-10148 | Cadmium | 0.1 | 1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Chromium | 0.2 | 1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Cobalt | 0.4 | 5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Copper | 0.2 | 1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Vanadium | 0.2 | 5 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Zinc | 0.6 | 2 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Calcium | 4 | 100 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10148 | MB-10148 | Selenium | 0.25 | 1 | | 10/16/2009 | 0:00 | 10/19/2009 | 10:31 | 1 | 0 |
| MB-10155 | MB-10155 | Mercury | 0.0084 | 0.1 | | 10/19/2009 | 11:00 | 10/19/2009 | 14:45 | 1 | 0 |
| MB-10155 | MB-10155 | Mercury | 0.0084 | 0.1 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:06 | 1 | 0 |
| MB-10156 | MB-10156 | Mercury | 0.0084 | 0.1 | | 10/19/2009 | 11:00 | 10/19/2009 | 16:13 | 1 | 0 |
| MB-10156 | MB-10156 | Mercury | 0.0084 | 0.1 | | 10/19/2009 | 11:00 | 10/20/2009 | 11:21 | 1 | 0 |
| MB-10157 | MB-10157 | Mercury | 0.0084 | 0.1 | | 10/19/2009 | 11:00 | 10/19/2009 | 13:42 | 1 | 0 |
| MB-10163 | MB-10163 | Cyanide, To | 0.18 | 0.5 | | 10/20/2009 | 0:00 | 10/20/2009 | 11:40 | 1 | 0 |
| MB-10174 | MB-10174 | Cyanide, To | 0.18 | 0.5 | | 10/21/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 0 |
| MB-10181 | MB-10181 | Cyanide, To | 0.18 | 0.5 | | 10/22/2009 | 0:00 | 10/22/2009 | 14:30 | 1 | 0 |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-001A | WC-1-SED-A | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-001A | WC-1-SED-A | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-001A | WC-1-SED-A | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-001A | WC-1-SED-A | Cyanide, To | 10163 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-001ADUP | WC-1-SED-AL | Percent Moi | R18542 | DUP | 10/13/2009 | LSLB | YES | | LR |
| 0910044-001AMS | WC-1-SED-AM | Aluminum | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AM | Iron | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AM | Lead | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AM | Magnesium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AM | Manganese | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AM | Nickel | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-001AMS | WC-1-SED-AN | Potassium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Silver | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Sodium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Thallium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Antimony | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Arsenic | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Barium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Beryllium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Cadmium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Chromium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Cobalt | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Copper | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Vanadium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Zinc | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Calcium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Selenium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-001AMS | WC-1-SED-AN | Mercury | 10155 | MS | 10/13/2009 | LSLB | YES | SW7471A | MS |
| 0910044-001AMS | WC-1-SED-AN | Cyanide, To | 10163 | MS | 10/13/2009 | LSLB | YES | SW9012 | MS |
| 0910044-001AMSD | WC-1-SED-AN | Aluminum | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Iron | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Lead | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Magnesium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Manganese | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Nickel | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Potassium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Silver | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Sodium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Thallium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Antimony | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Arsenic | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Barium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Beryllium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-001AMSD | WC-1-SED-AN | Cadmium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Chromium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Cobalt | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Copper | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Vanadium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Zinc | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Calcium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Selenium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Mercury | 10155 | MSD | 10/13/2009 | LSLB | YES | SW7471A | MSD |
| 0910044-001AMSD | WC-1-SED-AN | Cyanide, To | 10163 | MSD | 10/13/2009 | LSLB | YES | SW9012 | MSD |
| 0910044-002A | WC-1-SED-B | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-002A | WC-1-SED-B | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-002A | WC-1-SED-B | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-002A | WC-1-SED-B | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-002A | WC-1-SED-B | Cyanide, To | 10163 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-003A | WC-1-SED-C | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-003A | WC-1-SED-C | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-003A | WC-1-SED-C | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-003A | WC-1-SED-C | Cyanide, To | 10163 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-005A | WC-2-SED-A | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-005A | WC-2-SED-A | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-005A | WC-2-SED-A | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-005A | WC-2-SED-A | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-005A | WC-2-SED-A | Cyanide, To | 10163 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-006A | WC-2-SED-B | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-006A | WC-2-SED-B | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-006A | WC-2-SED-B | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-006A | WC-2-SED-B | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-006A | WC-2-SED-B | Cyanide, To | 10163 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-007A | WC-2-SED-C | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-007A | WC-2-SED-C | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-007A | WC-2-SED-C | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-007A | WC-2-SED-C | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-007A | WC-2-SED-C | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-008A | WC-3-SED-A | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-008A | WC-3-SED-A | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-008A | WC-3-SED-A | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-008A | WC-3-SED-A | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-009A | WC-3-SED-B | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-009A | WC-3-SED-B | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-009A | WC-3-SED-B | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |
| 0910044-009A | WC-3-SED-B | Mercury | 10155 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-009A | WC-3-SED-B | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-010A | WC-3-SED-C | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-010A | WC-3-SED-C | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-010A | WC-3-SED-C | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-010A | WC-3-SED-C | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-010A | WC-3-SED-C | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-012A | WC-4-SED-A | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-012A | WC-4-SED-A | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-012A | WC-4-SED-A | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-012A | WC-4-SED-A | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-012A | WC-4-SED-A | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-013A | WC-4-SED-B | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-013A | WC-4-SED-B | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-013A | WC-4-SED-B | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-013A | WC-4-SED-B | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-013A | WC-4-SED-B | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-013ADUP | WC-4-SED-BL | Percent Moi | R18542 | DUP | 10/13/2009 | LSLB | YES | | LR |
| 0910044-013AMS | WC-4-SED-BM | Aluminum | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Iron | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Lead | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Magnesium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Manganese | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Nickel | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Potassium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Silver | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Sodium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Thallium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Antimony | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Arsenic | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Barium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Beryllium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Cadmium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Chromium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Cobalt | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Copper | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Vanadium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Zinc | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Calcium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Selenium | 10139 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-013AMS | WC-4-SED-BM | Mercury | 10155 | MS | 10/13/2009 | LSLB | YES | SW7471A | MS |
| 0910044-013AMS | WC-4-SED-BM | Cyanide, To | 10174 | MS | 10/13/2009 | LSLB | YES | SW9012 | MS |
| 0910044-013AMSD | WC-4-SED-BM | Aluminum | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BM | Iron | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-013AMSD | WC-4-SED-BN | Lead | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Magnesium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Manganese | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Nickel | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Potassium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Silver | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Sodium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Thallium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Antimony | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Arsenic | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Barium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Beryllium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Cadmium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Chromium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Cobalt | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Copper | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Vanadium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Zinc | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Calcium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Selenium | 10139 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Mercury | 10155 | MSD | 10/13/2009 | LSLB | YES | SW7471A | MSD |
| 0910044-013AMSD | WC-4-SED-BN | Cyanide, To | 10174 | MSD | 10/13/2009 | LSLB | YES | SW9012 | MSD |
| 0910044-014A | WC-4-SED-C | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-014A | WC-4-SED-C | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-014A | WC-4-SED-C | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-014A | WC-4-SED-C | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-014A | WC-4-SED-C | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-015A | WC-5-SED-A | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-015A | WC-5-SED-A | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-015A | WC-5-SED-A | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-015A | WC-5-SED-A | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-015A | WC-5-SED-A | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-016A | WC-5-SED-B | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-016A | WC-5-SED-B | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-016A | WC-5-SED-B | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-016A | WC-5-SED-B | Mercury | 10155 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-016A | WC-5-SED-B | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-017A | WC-5-SED-C | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-017A | WC-5-SED-C | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | NO | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Zinc | 10139 | DL | 10/13/2009 | LSLB | YES | SW3050B | DL |
| 0910044-017A | WC-5-SED-C | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-017A | WC-5-SED-C | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |
| 0910044-017A | WC-5-SED-C | Mercury | 10155 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-017A | WC-5-SED-C | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-018A | WC-6-SED-A | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-018A | WC-6-SED-A | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-018A | WC-6-SED-A | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-018A | WC-6-SED-A | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-018A | WC-6-SED-A | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-019A | WC-6-SED-B | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-019A | WC-6-SED-B | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-019A | WC-6-SED-B | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-019A | WC-6-SED-B | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |
| 0910044-019A | WC-6-SED-B | Mercury | 10155 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-019A | WC-6-SED-B | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-020A | WC-6-SED-C | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-020A | WC-6-SED-C | Aluminum | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Iron | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Lead | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Magnesium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Manganese | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Nickel | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Potassium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Silver | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Sodium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Thallium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Antimony | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Arsenic | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Barium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Beryllium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Cadmium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-020A | WC-6-SED-C | Chromium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Cobalt | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Copper | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Vanadium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Zinc | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Calcium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Selenium | 10139 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-020A | WC-6-SED-C | Mercury | 10155 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-020A | WC-6-SED-C | Mercury | 10155 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |
| 0910044-020A | WC-6-SED-C | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-021A | WC-7-SED-A | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-021A | WC-7-SED-A | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-021A | WC-7-SED-A | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-021A | WC-7-SED-A | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-021A | WC-7-SED-A | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-022A | WC-7-SED-B | Percent Moi | R18542 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-022A | WC-7-SED-B | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-022A | WC-7-SED-B | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |
| 0910044-022A | WC-7-SED-B | Mercury | 10156 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-022A | WC-7-SED-B | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-023A | WC-7-SED-C | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-023A | WC-7-SED-C | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-023A | WC-7-SED-C | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-023A | WC-7-SED-C | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-023A | WC-7-SED-C | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-023ADUP | WC-7-SED-Cl | Percent Moi | R18543 | DUP | 10/13/2009 | LSLB | YES | | LR |
| 0910044-025A | WC-8-SED-A | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-025A | WC-8-SED-A | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-025A | WC-8-SED-A | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-025A | WC-8-SED-A | Mercury | 10156 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-025A | WC-8-SED-A | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |
| 0910044-025A | WC-8-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-025AMS | WC-8-SED-AM | Aluminum | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Iron | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Lead | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Magnesium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Manganese | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Nickel | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Potassium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Silver | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Sodium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Thallium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Antimony | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Arsenic | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Barium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Beryllium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AM | Cadmium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-025AMS | WC-8-SED-AN | Chromium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AN | Cobalt | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AN | Copper | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AN | Vanadium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AN | Zinc | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AN | Calcium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AN | Selenium | 10140 | MS | 10/13/2009 | LSLB | YES | SW3050B | MS |
| 0910044-025AMS | WC-8-SED-AN | Mercury | 10156 | MS | 10/13/2009 | LSLB | NO | SW7471A | MS |
| 0910044-025AMS | WC-8-SED-AN | Mercury | 10156 | MS | 10/13/2009 | LSLB | YES | SW7471A | MS |
| 0910044-025AMS | WC-8-SED-AN | Cyanide, To | 10181 | MS | 10/13/2009 | LSLB | YES | SW9012 | MS |
| 0910044-025AMSD | WC-8-SED-AN | Aluminum | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Iron | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Lead | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Magnesium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Manganese | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Nickel | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Potassium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Silver | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Sodium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Thallium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Antimony | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Arsenic | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Barium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Beryllium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Cadmium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Chromium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Cobalt | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Copper | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Vanadium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Zinc | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Calcium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |
| 0910044-025AMSD | WC-8-SED-AN | Selenium | 10140 | MSD | 10/13/2009 | LSLB | YES | SW3050B | MSD |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-025AMSD | WC-8-SED-AI | Mercury | 10156 | MSD | 10/13/2009 | LSLB | NO | SW7471A | MSD |
| 0910044-025AMSD | WC-8-SED-AI | Mercury | 10156 | MSD | 10/13/2009 | LSLB | YES | SW7471A | MSD |
| 0910044-025AMSD | WC-8-SED-AI | Cyanide, To | 10181 | MSD | 10/13/2009 | LSLB | YES | SW9012 | MSD |
| 0910044-026A | WC-8-SED-B | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-026A | WC-8-SED-B | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-026A | WC-8-SED-B | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-026A | WC-8-SED-B | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-027A | WC-8-SED-C | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-027A | WC-8-SED-C | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-027A | WC-8-SED-C | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-027A | WC-8-SED-C | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-027A | WC-8-SED-C | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-028A | WC-9-SED-A | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-028A | WC-9-SED-A | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-028A | WC-9-SED-A | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-028A | WC-9-SED-A | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-028A | WC-9-SED-A | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-029A | WC-9-SED-B | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-029A | WC-9-SED-B | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-029A | WC-9-SED-B | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-029A | WC-9-SED-B | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |
| 0910044-029A | WC-9-SED-B | Mercury | 10156 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-029A | WC-9-SED-B | Cyanide, To | 10174 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-030A | WC-9-SED-C | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-030A | WC-9-SED-C | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | NO | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Zinc | 10140 | DL | 10/13/2009 | LSLB | YES | SW3050B | DL |
| 0910044-030A | WC-9-SED-C | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-030A | WC-9-SED-C | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-030A | WC-9-SED-C | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |
| 0910044-030A | WC-9-SED-C | Mercury | 10156 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-030A | WC-9-SED-C | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-031A | WC-10-SED-A | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-031A | WC-10-SED-A | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-031A | WC-10-SED-A | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-031A | WC-10-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-032A | WC-10-SED-E | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-032A | WC-10-SED-E | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-032A | WC-10-SED-E | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-032A | WC-10-SED-E | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-032A | WC-10-SED-E | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-033A | WC-11-SED-A | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-033A | WC-11-SED-A | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-033A | WC-11-SED-A | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-033A | WC-11-SED-A | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-033A | WC-11-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-034A | WC-11-SED-E | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-034A | WC-11-SED-E | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-034A | WC-11-SED-E | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-034A | WC-11-SED-E | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-034A | WC-11-SED-E | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-035A | WC-12-SED-A | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-035A | WC-12-SED-A | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-035A | WC-12-SED-A | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-035A | WC-12-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-036A | WC-12-SED-E | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-036A | WC-12-SED-E | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-036A | WC-12-SED-E | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-036A | WC-12-SED-E | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-037A | WC-13-SED-A | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-037A | WC-13-SED-A | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-037A | WC-13-SED-A | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-037A | WC-13-SED-A | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-037A | WC-13-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-038A | WC-13-SED-E | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-038A | WC-13-SED-E | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-038A | WC-13-SED-E | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-038A | WC-13-SED-E | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-038A | WC-13-SED-E | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-039A | WC-14-SED-A | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-039A | WC-14-SED-A | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-039A | WC-14-SED-A | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-039A | WC-14-SED-A | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-039A | WC-14-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-040A | WC-14-SED-E | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-040A | WC-14-SED-E | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-040A | WC-14-SED-E | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-040A | WC-14-SED-E | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-042A | WC-15-SED-A | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-042A | WC-15-SED-A | Aluminum | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Iron | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-042A | WC-15-SED-A | Lead | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Magnesium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Manganese | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Nickel | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Potassium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Silver | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Sodium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Thallium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Antimony | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Arsenic | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Barium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Beryllium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Cadmium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Chromium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Cobalt | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Copper | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Vanadium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Zinc | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Calcium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Selenium | 10140 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-042A | WC-15-SED-A | Mercury | 10156 | SAMP | 10/13/2009 | LSLB | NO | SW7471A | N |
| 0910044-042A | WC-15-SED-A | Mercury | 10156 | DL | 10/13/2009 | LSLB | YES | SW7471A | DL |
| 0910044-042A | WC-15-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-043A | WC-15-SED-E | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-043A | WC-15-SED-E | Aluminum | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Iron | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Lead | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Magnesium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Manganese | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Nickel | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Potassium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Silver | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-043A | WC-15-SED-E | Sodium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Thallium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Antimony | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Arsenic | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Barium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Beryllium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Cadmium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Chromium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Cobalt | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Copper | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Vanadium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Zinc | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Calcium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Selenium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-043A | WC-15-SED-E | Mercury | 10157 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-043A | WC-15-SED-E | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-045A | WC-2-SED-A | Percent Moi | R18543 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-045A | WC-2-SED-A | Aluminum | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Iron | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Lead | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Magnesium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Manganese | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Nickel | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Potassium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Silver | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Sodium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Thallium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Antimony | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Arsenic | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Barium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Beryllium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Cadmium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-045A | WC-2-SED-A | Chromium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Cobalt | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Copper | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Vanadium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Zinc | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Calcium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Selenium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-045A | WC-2-SED-A | Mercury | 10157 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-045A | WC-2-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-045ADUP | WC-2-SED-A | Percent Moi | R18543 | DUP | 10/13/2009 | LSLB | YES | | LR |
| 0910044-046A | WC-3-SED-A | Percent Moi | R18544 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-046A | WC-3-SED-A | Aluminum | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Iron | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Lead | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Magnesium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Manganese | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Nickel | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Potassium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Silver | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Sodium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Thallium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Antimony | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Arsenic | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Barium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Beryllium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Cadmium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Chromium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Cobalt | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Copper | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Vanadium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Zinc | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Calcium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| 0910044-046A | WC-3-SED-A | Selenium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-046A | WC-3-SED-A | Mercury | 10157 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-046A | WC-3-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| 0910044-047A | WC-6-SED-A | Percent Moi | R18544 | SAMP | 10/13/2009 | LSLB | YES | | N |
| 0910044-047A | WC-6-SED-A | Aluminum | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Iron | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Lead | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Magnesium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Manganese | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Nickel | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Potassium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Silver | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Sodium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Thallium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Antimony | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Arsenic | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Barium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Beryllium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Cadmium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Chromium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Cobalt | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Copper | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Vanadium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Zinc | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Calcium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Selenium | 10148 | SAMP | 10/13/2009 | LSLB | YES | SW3050B | N |
| 0910044-047A | WC-6-SED-A | Mercury | 10157 | SAMP | 10/13/2009 | LSLB | YES | SW7471A | N |
| 0910044-047A | WC-6-SED-A | Cyanide, To | 10181 | SAMP | 10/13/2009 | LSLB | YES | SW9012 | N |
| LCS-10139 | LCS-10139 | Aluminum | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Iron | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Lead | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Magnesium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| LCS-10139 | LCS-10139 | Manganese | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Nickel | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Potassium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Silver | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Sodium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Thallium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Antimony | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Arsenic | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Barium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Beryllium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Cadmium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Chromium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Cobalt | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Copper | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Vanadium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Zinc | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Calcium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10139 | LCS-10139 | Selenium | 10139 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Aluminum | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Iron | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Lead | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Magnesium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Manganese | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Nickel | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Potassium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Silver | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Sodium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Thallium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Antimony | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Arsenic | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Barium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Beryllium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| LCS-10140 | LCS-10140 | Cadmium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Chromium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Cobalt | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Copper | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Vanadium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Zinc | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Calcium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10140 | LCS-10140 | Selenium | 10140 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Aluminum | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Iron | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Lead | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Magnesium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Manganese | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Nickel | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Potassium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Silver | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Sodium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Thallium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Antimony | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Arsenic | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Barium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Beryllium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Cadmium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Chromium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Cobalt | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Copper | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Vanadium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Zinc | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Calcium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10148 | LCS-10148 | Selenium | 10148 | LCS | 10/19/2009 | LSLB | YES | SW3050B | BS |
| LCS-10155 | LCS-10155 | Mercury | 10155 | LCS | 10/20/2009 | LSLB | YES | SW7471A | BS |
| LCS-10155 | LCS-10155 | Mercury | 10155 | LCS | 10/19/2009 | LSLB | YES | SW7471A | BS |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| LCS-10156 | LCS-10156 | Mercury | 10156 | LCS | 10/20/2009 | LSLB | YES | SW7471A | BS |
| LCS-10156 | LCS-10156 | Mercury | 10156 | LCS | 10/19/2009 | LSLB | YES | SW7471A | BS |
| LCS-10157 | LCS-10157 | Mercury | 10157 | LCS | 10/19/2009 | LSLB | YES | SW7471A | BS |
| LCS-10163 | LCS-10163 | Cyanide, To | 10163 | LCS | 10/20/2009 | LSLB | YES | SW9012 | BS |
| LCS-10174 | LCS-10174 | Cyanide, To | 10174 | LCS | 10/22/2009 | LSLB | YES | SW9012 | BS |
| LCS-10181 | LCS-10181 | Cyanide, To | 10181 | LCS | 10/22/2009 | LSLB | YES | SW9012 | BS |
| MB-10139 | MB-10139 | Aluminum | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Iron | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Lead | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Magnesium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Manganese | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Nickel | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Potassium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Silver | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Sodium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Thallium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Antimony | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Arsenic | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Barium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Beryllium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Cadmium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Chromium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Cobalt | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Copper | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Vanadium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Zinc | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Calcium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10139 | MB-10139 | Selenium | 10139 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Aluminum | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Iron | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Lead | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Magnesium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| MB-10140 | MB-10140 | Manganese | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Nickel | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Potassium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Silver | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Sodium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Thallium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Antimony | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Arsenic | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Barium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Beryllium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Cadmium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Chromium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Cobalt | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Copper | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Vanadium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Zinc | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Calcium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10140 | MB-10140 | Selenium | 10140 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Aluminum | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Iron | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Lead | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Magnesium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Manganese | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Nickel | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Potassium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Silver | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Sodium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Thallium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Antimony | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Arsenic | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Barium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Beryllium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |

| lab_sample_id | sys_sample_code | chemical_name | test_batch_ID | SampType | sample_receipt_date | lab_code_name | reportable_result | prep_method | sample_type_code |
|---|---|---|---|---|---|---|---|---|---|
| MB-10148 | MB-10148 | Cadmium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Chromium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Cobalt | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Copper | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Vanadium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Zinc | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Calcium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10148 | MB-10148 | Selenium | 10148 | MBLK | 10/19/2009 | LSLB | YES | SW3050B | LB |
| MB-10155 | MB-10155 | Mercury | 10155 | MBLK | 10/19/2009 | LSLB | YES | SW7471A | LB |
| MB-10155 | MB-10155 | Mercury | 10155 | MBLK | 10/20/2009 | LSLB | YES | SW7471A | LB |
| MB-10156 | MB-10156 | Mercury | 10156 | MBLK | 10/19/2009 | LSLB | YES | SW7471A | LB |
| MB-10156 | MB-10156 | Mercury | 10156 | MBLK | 10/20/2009 | LSLB | YES | SW7471A | LB |
| MB-10157 | MB-10157 | Mercury | 10157 | MBLK | 10/19/2009 | LSLB | YES | SW7471A | LB |
| MB-10163 | MB-10163 | Cyanide, To | 10163 | MBLK | 10/20/2009 | LSLB | YES | SW9012 | LB |
| MB-10174 | MB-10174 | Cyanide, To | 10174 | MBLK | 10/22/2009 | LSLB | YES | SW9012 | LB |
| MB-10181 | MB-10181 | Cyanide, To | 10181 | MBLK | 10/22/2009 | LSLB | YES | SW9012 | LB |

# Appendix F

# Brooks Rand Labs
# Electronic Data Deliverable

November 19, 2009

EA Engineering, Science and Technology
ATTN: Paul Muessig
3 Washington Center
Newburgh NY 12550
phm@eaest.com

RE: Work Order 0944003 Project EAS-NE0901

Dear Mr. Muessig,

This report contains results for the ten (10) sediment sample(s) received by Brooks Rand Labs (BRL) on October 27, 2009. Samples were logged-in for the contracted analyses of methyl mercury according to the chain-of-custody form(s). The duplicate analysis requested for sample *WC-6-Sed-A* (0944003-01) was inadvertently preformed on sample *WC-8-Sed-C* (0944003-07). The client project manager was contacted and approved this modification. All samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

The results were method blank corrected as described in the calculations section of the relevant BRL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. Results have been reported on a dry-weight basis as ng/g dry. All data is reported without qualification and all associated quality control sample results meet the acceptance criteria.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

Amanda Fawley
Project Manager
amanda@brooksrand.com

Tiffany Stilwater
Project Manager
tiffany@brooksrand.com

BRL, an accredited laboratory, certifies that the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more details, please see the *Report Information* page in your report. EPA 1600-Series Methods (1630, 1631e, 1632a, 1638, and 1640) ***require*** the collection and analysis of a field blank with every 'set' of samples. A 'set' of samples is defined as samples collected from the same site (i.e., sampling point) at the same time, to a maximum of 10 samples. In addition to collecting field blanks at each site, field duplicates and field spikes *may* be required, depending on the specific program requirements, at the same frequency. The NELAC standards require BRL to notify you that failure to collect and analyze the appropriate type and frequency of field quality control samples is considered a deviation from the method and should only be done with the approval of your regulatory authority prior to use of data for any compliance purposes.

# Report Information

## Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

## Common Abbreviations

| | | | |
|---|---|---|---|
| **BLK** | method blank | **MS** | matrix spike |
| **BRL** | Brooks Rand Labs | **MSD** | matrix spike duplicate |
| **BS** | laboratory fortified blank | **ND** | non-detect |
| **CAL** | calibration standard | **NR** | non-reportable |
| **CCV** | continuing calibration verification | **PS** | post preparation spike |
| **COC** | chain of custody record | **REC** | percent recovery |
| **CRM** | certified reference material | **RPD** | relative percent difference |
| **D** | dissolved fraction | **RSD** | relative standard deviation |
| **DUP** | duplicate | **SCV** | secondary calibration verification |
| **ICV** | initial calibration verification | **SOP** | standard operating procedure |
| **MDL** | method detection limit | **SRM** | standard reference material |
| **MRL** | method reporting limit | **T** | total recoverable fraction |

## Definition of Data Qualifiers

(Effective 9/23/09)

**B** Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
**E** An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
**H** Holding time and/or preservation requirements not met. Result is estimated.
**J** Estimated value. A full explanation is presented in the narrative.
**J-M** Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
**J-N** Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
**M** Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
**N** Spike recovery was not within acceptance criteria. Result is estimated.
**R** Rejected, unusable value. A full explanation is presented in the narrative.
**U** Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
**X** Result is not BLK-corrected and is within 10x the absolute value of the highest BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand, Ltd., those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002. These supersede all previous qualifiers ever employed by BRL.

# Sample Information

| Sample | Lab ID | Report Matrix | Type | Sampled | Received |
|---|---|---|---|---|---|
| *WC-6-SED-A* | 0944003-01 | Sediment | Sample | 10/12/2009 | 10/27/2009 |
| *WC-6-SED-B* | 0944003-02 | Sediment | Sample | 10/12/2009 | 10/27/2009 |
| *WC-6-SED-C* | 0944003-03 | Sediment | Sample | 10/12/2009 | 10/27/2009 |
| *WC-7-SED-A* | 0944003-04 | Sediment | Sample | 10/12/2009 | 10/27/2009 |
| *WC-7-SED-B* | 0944003-05 | Sediment | Sample | 10/12/2009 | 10/27/2009 |
| *WC-8-SED-A* | 0944003-06 | Sediment | Sample | 10/12/2009 | 10/27/2009 |
| *WC-8-SED-C* | 0944003-07 | Sediment | QC Sample | 10/12/2009 | 10/27/2009 |
| *WC-9-SED-A* | 0944003-08 | Sediment | Sample | 10/12/2009 | 10/27/2009 |
| *WC-9-SED-B* | 0944003-09 | Sediment | Sample | 10/12/2009 | 10/27/2009 |
| *WC-9-SED-C* | 0944003-10 | Sediment | Sample | 10/12/2009 | 10/27/2009 |

# Batch Summary

| Analyte | Lab Matrix | Method | Prepared | Analyzed | Batch | Sequence |
|---|---|---|---|---|---|---|
| %TS | Soil/Sediment | SM 2540G | 11/11/2009 | 11/17/2009 | B091547 | N/A |
| MeHg | Soil/Sediment | EPA Method 1630 mod. | 11/12/2009 | 11/13/2009 | B091546 | 0900938 |

**Work Order:** 0944003
**Project ID:** EAS-NE0901
**PM:** Amanda Fawley

**Client PM:** Paul Muessig
**Client PO:** 7262.1

# Sample Results

| Sample | Analyte | Report Matrix | Fraction | Result | Qualifier | MDL | MRL | Unit | Batch | Sequence |
|---|---|---|---|---|---|---|---|---|---|---|
| ***WC-6-SED-A*** | | | | | | | | | | |
| 0944003-01 | %TS | Sediment | N/A | 28.68 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-01 | MeHg | Sediment | N/A | 1.19 | | 0.029 | 0.092 | ng/g dry | B091546 | 0900938 |
| ***WC-6-SED-B*** | | | | | | | | | | |
| 0944003-02 | %TS | Sediment | N/A | 36.97 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-02 | MeHg | Sediment | N/A | 2.31 | | 0.022 | 0.070 | ng/g dry | B091546 | 0900938 |
| ***WC-6-SED-C*** | | | | | | | | | | |
| 0944003-03 | %TS | Sediment | N/A | 42.52 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-03 | MeHg | Sediment | N/A | 0.333 | | 0.019 | 0.060 | ng/g dry | B091546 | 0900938 |
| ***WC-7-SED-A*** | | | | | | | | | | |
| 0944003-04 | %TS | Sediment | N/A | 28.36 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-04 | MeHg | Sediment | N/A | 1.55 | | 0.029 | 0.091 | ng/g dry | B091546 | 0900938 |
| ***WC-7-SED-B*** | | | | | | | | | | |
| 0944003-05 | %TS | Sediment | N/A | 23.02 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-05 | MeHg | Sediment | N/A | 1.29 | | 0.037 | 0.114 | ng/g dry | B091546 | 0900938 |
| ***WC-8-SED-A*** | | | | | | | | | | |
| 0944003-06 | %TS | Sediment | N/A | 54.26 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-06 | MeHg | Sediment | N/A | 2.25 | | 0.015 | 0.046 | ng/g dry | B091546 | 0900938 |
| ***WC-8-SED-C*** | | | | | | | | | | |
| 0944003-07 | %TS | Sediment | N/A | 68.74 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-07 | MeHg | Sediment | N/A | 0.058 | | 0.012 | 0.038 | ng/g dry | B091546 | 0900938 |
| ***WC-9-SED-A*** | | | | | | | | | | |
| 0944003-08 | %TS | Sediment | N/A | 34.11 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-08 | MeHg | Sediment | N/A | 0.471 | | 0.025 | 0.078 | ng/g dry | B091546 | 0900938 |
| ***WC-9-SED-B*** | | | | | | | | | | |
| 0944003-09 | %TS | Sediment | N/A | 45.32 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-09 | MeHg | Sediment | N/A | 0.719 | | 0.018 | 0.056 | ng/g dry | B091546 | 0900938 |

**Work Order:** 0944003
**Project ID:** EAS-NE0901
**PM:** Amanda Fawley

**Client PM:** Paul Muessig
**Client PO:** 7262.1

# Sample Results

| Sample | Analyte | Report Matrix | Fraction | Result | Qualifier | MDL | MRL | Unit | Batch | Sequence |
|---|---|---|---|---|---|---|---|---|---|---|
| ***WC-9-SED-C*** | | | | | | | | | | |
| 0944003-10 | %TS | Sediment | N/A | 52.02 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-10 | MeHg | Sediment | N/A | 1.63 | | 0.016 | 0.049 | ng/g dry | B091546 | 0900938 |


3958 6th Avenue NW Seattle WA 98107 · P(206) 632-6206 · F(206) 632-6017 · brl@brooksrand.com · www.brooksrand.com

**Work Order:** 0944003
**Project ID:** EAS-NE0901
**PM:** Amanda Fawley

**Client PM:** Paul Muessig
**Client PO:** 7262.1

# Accuracy & Precision Summary

**Batch:** B091546
**Lab Matrix:** Soil/Sediment
**Method:** EPA Method 1630 mod.

| Sample | Analyte | Native | Spike | Result | Units | REC & Limits | | RPD & Limits | |
|---|---|---|---|---|---|---|---|---|---|
| **B091546-BS2** | **Laboratory Fortified Blank (0942050)** | | | | | | | | |
| | MeHg | | 1.000 | 0.912 | ng/g | 91% | 65-135 | | |
| **B091546-SRM1** | **Certified Reference Material (0927034, CC-580)** | | | | | | | | |
| | MeHg | | 75.00 | 61.01 | ng/g | 81% | 65-135 | | |
| **B091546-DUP2** | **Duplicate (0944003-07)** | | | | | | | | |
| | MeHg | 0.058 | | 0.042 | ng/g dry | | | 32% | 35 |
| **B091546-MS2** | **Matrix Spike (0944003-07)** | | | | | | | | |
| | MeHg | 0.058 | 2.808 | 3.283 | ng/g dry | 115% | 65-135 | | |
| **B091546-MSD2** | **Matrix Spike Duplicate (0944003-07)** | | | | | | | | |
| | MeHg | 0.058 | 2.815 | 3.062 | ng/g dry | 107% | 65-135 | 7% | 35 |

**Batch:** B091547
**Lab Matrix:** Soil/Sediment
**Method:** SM 2540G

| Sample | Analyte | Native | Spike | Result | Units | REC & Limits | | RPD & Limits | |
|---|---|---|---|---|---|---|---|---|---|
| **B091547-DUP1** | **Duplicate (0944003-07)** | | | | | | | | |
| | %TS | 68.74 | | 66.67 | % | | | 3% | 15 |


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**Work Order:** 0944003
**Project ID:** EAS-NE0901
**PM:** Amanda Fawley

**Client PM:** Paul Muessig
**Client PO:** 7262.1

# Method Blanks & Reporting Limits

**Batch:** B091546
**Matrix:** Soil/Sediment
**Method:** EPA Method 1630 mod.
**Analyte:** MeHg

| Sample | Result | Units |
|---|---|---|
| B091546-BLK1 | 0.001 | ng/g |
| B091546-BLK2 | 0.000 | ng/g |
| B091546-BLK3 | 0.001 | ng/g |
| B091546-BLK4 | 0.001 | ng/g |

**Average:** 0.001 **Standard Deviation:** 0.000 **MDL:** 0.008 ng/g
**Limit:** 0.016 **Limit:** 0.005 **MRL:** 0.025 ng/g

**Batch:** B091547
**Matrix:** Soil/Sediment
**Method:** SM 2540G
**Analyte:** %TS

| Sample | Result | Units |
|---|---|---|
| B091547-BLK1 | -0.05 | % |
| B091547-BLK2 | -0.02 | % |

**Average:** -0.04 **MDL:** 0.10 %
**Limit:** 0.33 **MRL:** 0.33 %

**Work Order:** 0944003
**Project ID:** EAS-NE0901
**PM:** Amanda Fawley

**Client PM:** Paul Muessig
**Client PO:** 7262.1

# Sample Containers

**Lab ID:** 0944003-01 **Report Matrix:** Sediment **Collected:** 10/12/2009
**Sample:** WC-6-SED-A **Sample Type:** Sample **Received:** 10/27/2009
**Comments:** Duplicate on WC-6-SED-A

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

**Lab ID:** 0944003-02 **Report Matrix:** Sediment **Collected:** 10/12/2009
**Sample:** WC-6-SED-B **Sample Type:** Sample **Received:** 10/27/2009

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

**Lab ID:** 0944003-03 **Report Matrix:** Sediment **Collected:** 10/12/2009
**Sample:** WC-6-SED-C **Sample Type:** Sample **Received:** 10/27/2009

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

**Lab ID:** 0944003-04 **Report Matrix:** Sediment **Collected:** 10/12/2009
**Sample:** WC-7-SED-A **Sample Type:** Sample **Received:** 10/27/2009

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

**Lab ID:** 0944003-05 **Report Matrix:** Sediment **Collected:** 10/12/2009
**Sample:** WC-7-SED-B **Sample Type:** Sample **Received:** 10/27/2009

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

**Lab ID:** 0944003-06 **Report Matrix:** Sediment **Collected:** 10/12/2009
**Sample:** WC-8-SED-A **Sample Type:** Sample **Received:** 10/27/2009

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

**Lab ID:** 0944003-07 **Report Matrix:** Sediment **Collected:** 10/12/2009
**Sample:** WC-8-SED-C **Sample Type:** QC Sample **Received:** 10/27/2009

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

**Work Order:** 0944003
**Project ID:** EAS-NE0901
**PM:** Amanda Fawley

**Client PM:** Paul Muessig
**Client PO:** 7262.1

# Sample Containers

**Lab ID:** 0944003-08
**Sample:** WC-9-SED-A
**Report Matrix:** Sediment
**Sample Type:** Sample
**Collected:** 10/12/2009
**Received:** 10/27/2009

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

**Lab ID:** 0944003-09
**Sample:** WC-9-SED-B
**Report Matrix:** Sediment
**Sample Type:** Sample
**Collected:** 10/12/2009
**Received:** 10/27/2009

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

**Lab ID:** 0944003-10
**Sample:** WC-9-SED-C
**Report Matrix:** Sediment
**Sample Type:** Sample
**Collected:** 10/12/2009
**Received:** 10/27/2009

| Des | Container | Size | Lot | Preservation | P-Lot | pH | Ship. Cont. | Comments |
|---|---|---|---|---|---|---|---|---|
| A | Jar HDPE | 4-oz | | None | N/A | | Cooler | |

# Shipping Containers

### Cooler

**Received:** October 27, 2009 9:00
**Tracking No:** 856569325334 via
**Coolant Type:** Ice
**Temperature:** 1.3°C

**Description:** Cooler
**Damaged in transit?** No
**Returned to client?** No

**Custody seals present?** Yes
**Custody seals intact?** Yes
**COC present?** Yes


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MEANINGFUL METALS DATA
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Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

# Chain of Custody Record



White: LAB COPY
Yellow: CUSTOMER COPY

0944803

| | | |
|---|---|---|
| Client: EA ENGINEERING | Address: 3 WASHINGTON CENTER NEWBURGH, NY 12550 | COC receipt confirmation? (Y) / N |
| Contact: PAUL MUESSIG | | If so, by: (email) / fax (circle one) |
| Client project ID: 14368.40 | | Email: pmuessig@eaest.com |
| PO #: | Phone #: 845-565-8100 ext. 1006 | Fax #: |

Requested TAT in business days:
- [x] 20 (standard)
- [ ] 15
- [ ] 10
- [ ] 5
- [ ] Other ____

*Surcharges apply for expedited turn around times.*

| | Sample ID | Collection: Date | Collection: Time | Miscellaneous: Sampler (initials) | Miscellaneous: Matrix type | Miscellaneous: # of containers | Miscellaneous: Field filtered? (Y/N) | Field Preservation: Unpreserved / ice only | Field Preservation: HCl / $HNO_3$ (circle one) | Field Preservation: Other (specify) | Analyses required: Total Hg, EPA 1631 | Analyses required: Methyl Hg, EPA 1630 | Analyses required: ICP-MS Metals (specify) | Analyses required: As / Se species (specify) | Analyses required: % Solids | Analyses required: Filtration | Analyses required: Other (specify) % Moisture | Analyses required: Other (specify) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | % moisture = SM 2540 G |
| 1 | WC-6-SED-A | 10/12/09 | 1445 | TW | SED | 1 | N | X | | | | X | | | | | X | | Duplicate on WC-6-SED-A |
| 2 | WC-6-SED-B | ↓ | 1450 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | ↓ | | |
| 3 | WC-6-SED-C | ↓ | 1455 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | ↓ | | |
| 4 | WC-7-SED-A | ↓ | 1520 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | ↓ | | |
| 5 | WC-7-SED-B | ↓ | 1525 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | ↓ | | |
| 6 | WC-8-SED-A | ↓ | 1555 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | ↓ | | |
| 7 | WC-8-SED-C | ↓ | 1605 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | ↓ | | MS/MSD on WC-8-SED-C |
| 8 | WC-9-SED-A | ↓ | 1625 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | ↓ | | |
| 9 | WC-9-SED-B | ↓ | 1630 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | ↓ | | |
| 10 | WC-9-SED-C | ↓ | 1635 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | ↓ | | |

| | | | | | |
|---|---|---|---|---|---|
| Relinquished by: Todd Ward | Date: 10/26/09 | Time: 1700 | Relinquished by: | Date: | Time: |
| Received by: | Date: | Time: | Received at BRL by: [signature] | Date: 10.27.09 | Time: 09 00 |
| Shipping carrier: FED EX | # of coolers: 1 | | BRL work order ID: | BRL project ID: | |

500

**FedEx** Express US Airbill

FedEx Tracking Number 8565 6932 5334

Form ID No. 0215

Recipient's Copy

RECIPIENT: PEEL HERE

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**1 From** This portion can be removed for Recipient's records.

Date 10/26/09 FedEx Tracking Number 856569325334

Sender's Name TODD WARD Phone 410 746-1250

Company E A ENGINEERING SCIENCE & TECH

Address 15 LOVETON CIR

Dept./Floor/Suite/Room

City SPARKS GLENCOE State MD ZIP 21152

**2 Your Internal Billing Reference** 1436840.0002.2152

**3 To**

Recipient's Name SAMPLE MANAGEMENT Phone 206 632-6206

Company BROOKS RAND LABS

Recipient's Address 3958 6TH AVENUE NW

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

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8565 6932 5334

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- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

**4b Express Freight Service** *Packages over 150 lbs.*

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation:

** To most locations.

**5 Packaging**

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other

* Declared value limit $500.

**6 Special Handling** Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

**7 Payment** *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
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Obtain Recip. Acct. No. [ ]

| Total Packages | Total Weight | | Total Charges |
|---|---|---|---|
| 1 | 30 lbs | | Credit Card Auth. |

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**8 *NEW* Residential Delivery Signature Options** If you require a signature, check Direct or Indirect.

- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Anyone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

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# Appendix G

# Environmental Data Services
# Data Validation Report—
# Data Usability Summary Report

# DATA USABILITY SUMMARY REPORT
# THREE STAR ANODIZING, WAPPINGER CREEK, NEW YORK

Client: EA Engineering, Science and Technology, Syracuse, New York
SDG: 0910044/0944003
Laboratory: Brooks Rand Labs, Seattle, WA & Life Science Laboratories, Inc, Syracuse, NY
Site: Three Star Anodizing, Wappinger Creek, New York
Date: December 1, 2009

| EDS ID | Client Sample ID | Laboratory Sample ID | Matrix |
|---|---|---|---|
| 1 | WC-1-SED-A | 0910044-001 | Sediment |
| 1MS | WC-1-SED-AMS | 0910044-001MS | Sediment |
| 1MSD | WC-1-SED-AMSD | 0910044-001MSD | Sediment |
| 2 | WC-1-SED-B | 0910044-002 | Sediment |
| 3 | WC-1-SED-B | 0910044-003 | Sediment |
| 4 | WC-1-SED-AB | 0910044-004 | Sediment |
| 5 | WC-2-SED-A | 0910044-005 | Sediment |
| 6 | WC-2-SED-B | 0910044-006 | Sediment |
| 7 | WC-2-SED-C | 0910044-007 | Sediment |
| 8 | WC-3-SED-A | 0910044-008 | Sediment |
| 9 | WC-3-SED-B | 0910044-009 | Sediment |
| 10 | WC-3-SED-C | 0910044-0010 | Sediment |
| 11 | WC-3-SED-AB | 0910044-011 | Sediment |
| 12 | WC-4-SED-A | 0910044-012 | Sediment |
| 13 | WC-4-SED-B | 0910044-013 | Sediment |
| 13MS | WC-4-SED-BMS | 0910044-013MS | Sediment |
| 13MSD | WC-4-SED-BMSD | 0910044-013MSD | Sediment |
| 14 | WC-4-SED-C | 0910044-014 | Sediment |
| 15 | WC-5-SED-A | 0910044-015 | Sediment |
| 16 | WC-5-SED-B | 0910044-016 | Sediment |
| 17 | WC-5-SED-C | 0910044-017 | Sediment |
| 18 | WC-6-SED-A | 0910044-018 | Sediment |
| 19 | WC-6-SED-B | 0910044-019 | Sediment |
| 20 | WC-6-SED-C | 0910044-020 | Sediment |
| 21 | WC-7-SED-A | 0910044-021 | Sediment |
| 22 | WC-7-SED-B | 0910044-022 | Sediment |
| 23 | WC-7-SED-C | 0910044-023 | Sediment |
| 24 | WC-7-SED-AB | 0910044-024 | Sediment |
| 25 | WC-8-SED-A | 0910044-025 | Sediment |
| 25MS | WC-8-SED-AMS | 0910044-025MS | Sediment |
| 25MSD | WC-8-SED-AMSD | 0910044-025MSD | Sediment |
| 26 | WC-8-SED-B | 0910044-026 | Sediment |
| 27 | WC-8-SED-C | 0910044-027 | Sediment |
| 28 | WC-9-SED-A | 0910044-028 | Sediment |
| 29 | WC-9-SED-B | 0910044-029 | Sediment |
| 30 | WC-9-SED-C | 0910044-030 | Sediment |
| 31 | WC-10-SED-A | 0910044-031 | Sediment |
| 32 | WC-10-SED-B | 0910044-032 | Sediment |
| 33 | WC-11-SED-A | 0910044-033 | Sediment |
| 34 | WC-11-SED-B | 0910044-034 | Sediment |

| EDS ID | Client Sample ID | Laboratory Sample ID | Matrix |
|---|---|---|---|
| 35 | WC-12-SED-A | 0910044-035 | Sediment |
| 36 | WC-12-SED-B | 0910044-036 | Sediment |
| 37 | WC-13-SED-A | 0910044-037 | Sediment |
| 38 | WC-13-SED-B | 0910044-038 | Sediment |
| 39 | WC-14-SED-A | 0910044-039 | Sediment |
| 40 | WC-14-SED-B | 0910044-040 | Sediment |
| 41 | WC-14-SED-AB | 0910044-041 | Sediment |
| 42 | WC-15-SED-A | 0910044-042 | Sediment |
| 43 | WC-15-SED-B | 0910044-043 | Sediment |
| 44 | WC-15-SED-AB | 0910044-044 | Sediment |
| 45 | WC-2-SED-A (Dup) | 0910044-045 | Sediment |
| 46 | WC-3-SED-A (Dup) | 0910044-046 | Sediment |
| 47 | WC-6-SED-A (Dup) | 0910044-047 | Sediment |
| 48* | WC-6-SED-A | 0944003-01 | Sediment |
| 49* | WC-6-SED-B | 0944003-02 | Sediment |
| 50* | WC-6-SED-C | 0944003-03 | Sediment |
| 51* | WC-7-SED-A | 0944003-04 | Sediment |
| 52* | WC-7-SED-B | 0944003-05 | Sediment |
| 53* | WC-8-SED-A | 0944003-06 | Sediment |
| 54* | WC-8-SED-C | 0944003-07 | Sediment |
| 54MS* | WC-8-SED-CMS | 0944003-07MS | Sediment |
| 54MSD* | WC-8-SED-CMSD | 0944003-07MSD | Sediment |
| 55* | WC-9-SED-A | 0944003-08 | Sediment |
| 56* | WC-9-SED-B | 0944003-09 | Sediment |
| 57* | WC-9-SED-C | 0944003-10 | Sediment |

** - Methyl mercury only*

A Data Usability Summary Review was performed on the analytical data for forty-seven sediment samples collected by EA Engineering, Science and Technology, Inc. at the Three Start Anodizing Site in Wappinger Creek, New York. The samples were analyzed under Environmental Protection Agency (USEPA) *"Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions"*.

Specific method references are as follows:

| *Analysis* | *Method References* |
|---|---|
| Metals/Hg/Cyanide | USEPA SW-846 Methods 6010B/7471A/9012A |
| Methyl Mercury | USEPA Method 1630 Modified |

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number HW-2, Revision 13, September 2006: Evaluation of Metals Data for the CLP Program based on ILMO5.3;
- and the reviewer's professional judgment.

## *Inorganics*

The following items/criteria were reviewed:

- Data Completeness
- Holding times and sample preservation
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Duplicate (LCS/LCSD) recoveries
- Method blank and field blank contamination
- ICP Interference Check Sample
- Initial and continuing calibration verifications
- Compound Quantitation
- ICP Serial Dilution
- Field Duplicate sample precision

## Overall Usability Issues:

There were no rejections of data.

Overall the remaining data is acceptable for the intended purposes. Data were qualified for the following deficiencies.

- Antimony was qualified as estimated in several samples due to low MS/MSD recoveries.
- Cyanide was qualified as estimated in several samples due to low MS/MSD recoveries.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

## Metals/Hg/Cyanide & Methyl Mercury

## Data Completeness

- All criteria were met.

## Holding Times

- All samples were prepared and analyzed within 14 days for cyanide, 28 days for mercury and 180 days for all other metals.

## Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The following table presents MS/MSD samples that exhibited percent recoveries (%R) outside the QC limits and/or relative percent differences (RPD) above QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J). Results are valid and usable, however possibly biased.

| MS/MSD Sample ID | Compound | MS/MSD %R/RPD | Qualifier | Affected Samples |
|---|---|---|---|---|
| 1 | Antimony | 43%/44%/Ok | J/UJ | 1-4, 6-20 |
| 13 | Antimony | 45%/46%/Ok | J/UJ | 1-4, 6-20 |
| | Cyanide | 59%/64%/Ok | J/UJ | 7-10, 12-23, 26-29 |
| 25 | Antimony | 47%/52%/Ok | J/UJ | 21-42 |
| | Cyanide | 57%/50%/Ok | J/UJ | 25, 30-40, 42-47 |

## Laboratory Control Samples

- The LCS samples exhibited acceptable %R values.

## Method Blank

- The following table presents compounds detected in the method blanks. Concentrations of laboratory contaminants in associated samples less than ten (10) times the concentration in the associated method blank are considered to be attributable to lab contamination and have been negated and qualified (U). Results are valid and useable as non-detects.

| Blank ID | Compound | Conc. mg/kg | Action Level mg/kg | Qualifier | Affected Samples |
|---|---|---|---|---|---|
| MB-10139 | Cobalt | 0.578 | 5.78 | None | All >10X |
| MB-10148 | Calcium | 6.82 | 68.2 | None | All >10X |
| | Iron | 1.50 | 15.0 | | |

## Field Blank

- Field blank samples were not included in this data package.

## ICP Interference Check Sample

- The ICP interference check sample exhibited acceptable %R values.

## Initial and Continuing Calibration Verification

- All initial and continuing calibration criteria were met.

## ICP Serial Dilution

- ICP serial dilution percent differences (%D) were within acceptance limits.

## Compound Quantitation

- All criteria were met.

## Field Duplicate Sample Precision

- Field duplicate results are summarized below. A high RPD indicates poor precision and a potential high or low bias.

| Metals | | | | |
|---|---|---|---|---|
| Compound | WC-2-SED-A mg/kg | WC-2-SED-A (Dup) mg/kg | RPD | Qualifier |
| Aluminum | 14000 | 15000 | 7% | None |
| Arsenic | 8.8 | 9.4 | 7% | None |
| Barium | 81 | 88 | 8% | None |
| Beryllium | 0.63 | 0.66 | 5% | None |
| Cadmium | 1.4 | 1.4 | 0% | None |
| Calcium | 6300 | 7100 | 12% | None |
| Chromium | 84 | 99 | 16% | None |
| Cobalt | 16 | 15 | 6% | None |
| Copper | 69 | 67 | 3% | None |
| Iron | 27000 | 29000 | 7% | None |
| Lead | 86 | 96 | 11% | None |
| Magnesium | 6600 | 7100 | 7% | None |
| Manganese | 500 | 550 | 10% | None |
| Mercury | 2.6 | 3.0 | 14% | None |
| Nickel | 30 | 32 | 6% | None |
| Potassium | 1400 | 1500 | 7% | None |
| Selenium | 3.7 U | 1.1 | NC | None |
| Sodium | 150 | 160 | 6% | None |
| Vanadium | 23 | 24 | 4% | None |
| Zinc | 210 | 240 | 13% | None |

| Metals | | | | |
|---|---|---|---|---|
| Compound | WC-3-SED-A mg/kg | WC-3-SED-A (Dup) mg/kg | RPD | Qualifier |
| Aluminum | 12000 | 13000 | 8% | None |
| Arsenic | 6.7 | 6.0 | 11% | None |
| Barium | 67 | 67 | 0% | None |
| Beryllium | 0.55 | 0.54 | 2% | None |
| Cadmium | 3.7 | 3.4 | 8% | None |
| Calcium | 6400 | 6300 | 2% | None |
| Chromium | 62 | 60 | 3% | None |
| Cobalt | 18 | 15 | 18% | None |

| Metals | | | | |
|---|---|---|---|---|
| Compound | WC-3-SED-A mg/kg | WC-3-SED-A (Dup) mg/kg | RPD | Qualifier |
| Copper | 88 | 72 | 20% | None |
| Iron | 25000 | 24000 | 4% | None |
| Lead | 110 | 100 | 10% | None |
| Magnesium | 6400 | 6400 | 0% | None |
| Manganese | 430 | 420 | 2% | None |
| Mercury | 1.5 | 1.4 | 7% | None |
| Nickel | 38 | 34 | 11% | None |
| Potassium | 1100 | 1200 | 9% | None |
| Sodium | 150 | 140 | 7% | None |
| Vanadium | 26 | 23 | 12% | None |
| Zinc | 420 | 400 | 5% | None |

| Metals | | | | |
|---|---|---|---|---|
| Compound | WC-6-SED-A mg/kg | WC-6-SED-A (Dup) mg/kg | RPD | Qualifier |
| Aluminum | 15000 | 15000 | 0% | None |
| Arsenic | 5.0 | 5.1 | 2% | None |
| Barium | 76 | 77 | 1% | None |
| Beryllium | 0.63 | 0.59 | 7% | None |
| Cadmium | 3.6 | 3.5 | 3% | None |
| Calcium | 6300 | 6300 | 0% | None |
| Chromium | 180 | 180 | 0% | None |
| Cobalt | 12 | 12 | 0% | None |
| Copper | 120 | 130 | 8% | None |
| Iron | 25000 | 26000 | 4% | None |
| Lead | 210 | 210 | 0% | None |
| Magnesium | 6300 | 6300 | 0% | None |
| Manganese | 350 | 360 | 3% | None |
| Mercury | 4.8 | 5.4 | 12% | None |
| Nickel | 35 | 35 | 0% | None |
| Potassium | 1400 | 1200 | 15% | None |
| Selenium | 1.4 | 3.9 U | NC | None |
| Sodium | 180 | 180 | 0% | None |
| Vanadium | 20 | 19 | 5% | None |
| Zinc | 410 | 410 | 0% | None |

***Package Summary:***

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 12/4/09

Nancy Weaver
Senior Chemist

## Data Qualifiers

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.

U = The analyte was analyzed for, but was not detected above the sample reporting limit.

R = The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| CLIENT: | EA Engineering Science and Technology | Lab ID: | 0910044-001A |
| Project: | DEC - Wappinger Creek | Client Sample ID: | *WC-1-SED-A* |
| W Order: | 0910044 | Collection Date: | 10/12/09 12:30 |
| Matrix: | SEDIMENT | Date Received: | 10/13/09 10:07 |
| Inst. ID: | ICAP 61E | Sample Size: 0.5 g | PrepDate: 10/15/09 0:00 |
| ColumnID: | | %Moisture: 45.7 | BatchNo: 10139/R18571 |
| Revision: | 10/20/09 16:46 | TestCode: 6010S | FileID: 1-SAMP-5960 |
| Col Type: | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| TOTAL METALS BY ICP | | | | | SW6010B | | (SW3050B) |
| Aluminum | 16000 | | 18 | 7.4 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Antimony | ~~ND~~ | UJ | 11 | 0.55 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Arsenic | 3.6 | | 1.8 | 0.74 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Barium | 69 | | 18 | 0.37 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Beryllium | 0.73 | J | 1.8 | 0.037 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Cadmium | 0.34 | J | 1.8 | 0.18 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Calcium | 3000 | | 180 | 7.4 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Chromium | 23 | | 1.8 | 0.37 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Cobalt | 12 | | 9.2 | 0.74 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Copper | 18 | | 1.8 | 0.37 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Iron | 26000 | | 9.2 | 1.8 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Lead | 16 | | 1.8 | 0.74 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Magnesium | 6000 | | 180 | 11 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Manganese | 290 | | 9.2 | 0.18 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Nickel | 27 | | 9.2 | 0.37 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Potassium | 1500 | | 920 | 37 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Selenium | 0.48 | J | 1.8 | 0.46 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Silver | ND | | 1.8 | 0.37 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Sodium | 160 | J | 180 | 7.4 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Thallium | ND | | 3.7 | 0.92 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Vanadium | 22 | | 9.2 | 0.37 | mg/Kg-dry | 1 | 10/19/09 12:52 |
| Zinc | 85 | | 3.7 | 1.1 | mg/Kg-dry | 1 | 10/19/09 12:52 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

Print Date: 10/28/09 12:49 477022 Project Supervisor: Anthony Crescenzi

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MW 12/1/09

2

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-002A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | *WC-1-SED-B* |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 12:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 50.5 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5965 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 14000 | | 20 | 8.1 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Antimony | ~~ND~~ | UJ | 12 | 0.61 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Arsenic | 3.3 | | 2.0 | 0.81 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Barium | 61 | | 20 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Beryllium | 0.71 | J | 2.0 | 0.040 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Cadmium | 0.34 | J | 2.0 | 0.20 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Calcium | 3100 | | 200 | 8.1 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Chromium | 21 | | 2.0 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Cobalt | 11 | | 10 | 0.81 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Copper | 18 | | 2.0 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Iron | 23000 | | 10 | 2.0 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Lead | 14 | | 2.0 | 0.81 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Magnesium | 5500 | | 200 | 12 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Manganese | 260 | | 10 | 0.20 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Nickel | 25 | | 10 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Potassium | 1500 | | 1000 | 40 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Selenium | 0.53 | J | 2.0 | 0.51 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Silver | ND | | 2.0 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Sodium | 190 | J | 200 | 8.1 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Thallium | ND | | 4.0 | 1.0 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Vanadium | 22 | | 10 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:11 |
| Zinc | 79 | | 4.0 | 1.2 | mg/Kg-dry | 1 | 10/19/09 13:11 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477027 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

3

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-003A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-1-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 12:40 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 50.6 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5966 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 14000 | | 20 | 8.1 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Antimony | ~~ND~~ | UJ | 12 | 0.61 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Arsenic | 4.3 | | 2.0 | 0.81 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Barium | 51 | | 20 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Beryllium | 0.71 | J | 2.0 | 0.040 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Cadmium | 0.36 | J | 2.0 | 0.20 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Calcium | 3200 | | 200 | 8.1 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Chromium | 21 | | 2.0 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Cobalt | 13 | | 10 | 0.81 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Copper | 18 | | 2.0 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Iron | 24000 | | 10 | 2.0 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Lead | 14 | | 2.0 | 0.81 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Magnesium | 5600 | | 200 | 12 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Manganese | 260 | | 10 | 0.20 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Nickel | 26 | | 10 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Potassium | 1500 | | 1000 | 40 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Selenium | ND | | 2.0 | 0.51 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Silver | ND | | 2.0 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Sodium | 200 | J | 200 | 8.1 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Thallium | ND | | 4.0 | 1.0 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Vanadium | 21 | | 10 | 0.40 | mg/Kg-dry | 1 | 10/19/09 13:15 |
| Zinc | 80 | | 4.0 | 1.2 | mg/Kg-dry | 1 | 10/19/09 13:15 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477028 **Project Supervisor:** Anthony Crescenzi

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NW 12/1/09

5

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-005A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | *WC-2-SED-A* |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 72.9 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5967 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 14000 | | 37 | 15 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Antimony | ND | UJ | 22 | 1.1 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Arsenic | 8.8 | | 3.7 | 1.5 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Barium | 81 | | 37 | 0.74 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Beryllium | 0.63 | J | 3.7 | 0.074 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Cadmium | 1.4 | J | 3.7 | 0.37 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Calcium | 6300 | | 370 | 15 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Chromium | 84 | | 3.7 | 0.74 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Cobalt | 16 | J | 18 | 1.5 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Copper | 69 | | 3.7 | 0.74 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Iron | 27000 | | 18 | 3.7 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Lead | 86 | | 3.7 | 1.5 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Magnesium | 6600 | | 370 | 22 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Manganese | 500 | | 18 | 0.37 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Nickel | 30 | | 18 | 0.74 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Potassium | 1400 | J | 1800 | 74 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Selenium | ND | | 3.7 | 0.92 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Silver | ND | | 3.7 | 0.74 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Sodium | 150 | J | 370 | 15 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Thallium | ND | | 7.4 | 1.8 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Vanadium | 23 | | 18 | 0.74 | mg/Kg-dry | 1 | 10/19/09 13:19 |
| Zinc | 210 | | 7.4 | 2.2 | mg/Kg-dry | 1 | 10/19/09 13:19 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477029 **Project Supervisor:** Anthony Crescenzi

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RW 12/1/09

6

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-006A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 51.9 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5971 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 18000 | | 21 | 8.3 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Antimony | ~~ND~~ 4J | | 12 | 0.62 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Arsenic | 9.6 | | 2.1 | 0.83 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Barium | 88 | | 21 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Beryllium | 0.84 | J | 2.1 | 0.042 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Cadmium | 0.37 | J | 2.1 | 0.21 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Calcium | 3600 | | 210 | 8.3 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Chromium | 36 | | 2.1 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Cobalt | 14 | | 10 | 0.83 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Copper | 31 | | 2.1 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Iron | 29000 | | 10 | 2.1 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Lead | 86 | | 2.1 | 0.83 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Magnesium | 6600 | | 210 | 12 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Manganese | 420 | | 10 | 0.21 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Nickel | 29 | | 10 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Potassium | 1600 | | 1000 | 42 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Selenium | 0.58 | J | 2.1 | 0.52 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Silver | ND | | 2.1 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Sodium | 150 | J | 210 | 8.3 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Thallium | ND | | 4.2 | 1.0 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Vanadium | 24 | | 10 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:35 |
| Zinc | 94 | | 4.2 | 1.2 | mg/Kg-dry | 1 | 10/19/09 13:35 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477033 **Project Supervisor:** Anthony Crescenzi



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7

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-007A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 54.4 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5972 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 15000 | | 22 | 8.8 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Antimony | ~~ND~~ UJ | | 13 | 0.66 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Arsenic | 4.5 | | 2.2 | 0.88 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Barium | 59 | | 22 | 0.44 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Beryllium | 0.73 | J | 2.2 | 0.044 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Cadmium | 0.38 | J | 2.2 | 0.22 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Calcium | 3000 | | 220 | 8.8 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Chromium | 23 | | 2.2 | 0.44 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Cobalt | 13 | | 11 | 0.88 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Copper | 19 | | 2.2 | 0.44 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Iron | 31000 | | 11 | 2.2 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Lead | 15 | | 2.2 | 0.88 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Magnesium | 6100 | | 220 | 13 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Manganese | 380 | | 11 | 0.22 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Nickel | 29 | | 11 | 0.44 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Potassium | 1800 | | 1100 | 44 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Selenium | ND | | 2.2 | 0.55 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Silver | ND | | 2.2 | 0.44 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Sodium | 160 | J | 220 | 8.8 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Thallium | ND | | 4.4 | 1.1 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Vanadium | 22 | | 11 | 0.44 | mg/Kg-dry | 1 | 10/19/09 13:39 |
| Zinc | 87 | | 4.4 | 1.3 | mg/Kg-dry | 1 | 10/19/09 13:39 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477034 **Project Supervisor:** Anthony Crescenzi

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-008A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 69.1 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5973 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 12000 | | 32 | 13 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Antimony | ~~ND~~ UJ | | 19 | 0.97 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Arsenic | 6.7 | | 3.2 | 1.3 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Barium | 67 | | 32 | 0.65 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Beryllium | 0.55 | J | 3.2 | 0.065 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Cadmium | 3.7 | | 3.2 | 0.32 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Calcium | 6400 | | 320 | 13 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Chromium | 62 | | 3.2 | 0.65 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Cobalt | 18 | | 16 | 1.3 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Copper | 88 | | 3.2 | 0.65 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Iron | 25000 | | 16 | 3.2 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Lead | 110 | | 3.2 | 1.3 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Magnesium | 6400 | | 320 | 19 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Manganese | 430 | | 16 | 0.32 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Nickel | 38 | | 16 | 0.65 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Potassium | 1100 | J | 1600 | 65 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Selenium | ND | | 3.2 | 0.81 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Silver | ND | | 3.2 | 0.65 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Sodium | 150 | J | 320 | 13 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Thallium | ND | | 6.5 | 1.6 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Vanadium | 26 | | 16 | 0.65 | mg/Kg-dry | 1 | 10/19/09 13:43 |
| Zinc | 420 | | 6.5 | 1.9 | mg/Kg-dry | 1 | 10/19/09 13:43 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477035 **Project Supervisor:** Anthony Crescenzi



uw 12/1/09

9

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-009A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:50 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 51.9 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5974 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 12000 | | 21 | 8.3 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Antimony | 5.1 | J | 12 | 0.62 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Arsenic | 26 | | 2.1 | 0.83 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Barium | 63 | | 21 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Beryllium | 0.55 | J | 2.1 | 0.042 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Cadmium | 5.9 | | 2.1 | 0.21 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Calcium | 4500 | | 210 | 8.3 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Chromium | 780 | | 2.1 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Cobalt | 13 | | 10 | 0.83 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Copper | 140 | | 2.1 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Iron | 23000 | | 10 | 2.1 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Lead | 300 | | 2.1 | 0.83 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Magnesium | 5400 | | 210 | 12 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Manganese | 320 | | 10 | 0.21 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Nickel | 27 | | 10 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Potassium | 1100 | | 1000 | 42 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Selenium | 0.83 | J | 2.1 | 0.52 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Silver | ND | | 2.1 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Sodium | 130 | J | 210 | 8.3 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Thallium | ND | | 4.2 | 1.0 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Vanadium | 20 | | 10 | 0.42 | mg/Kg-dry | 1 | 10/19/09 13:46 |
| Zinc | 590 | | 4.2 | 1.2 | mg/Kg-dry | 1 | 10/19/09 13:46 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477036 **Project Supervisor:** Anthony Crescenzi



kw 12/1/09

10

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-010A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 49.1 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5975 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 15000 | | 20 | 7.9 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Antimony | ~~ND~~ UJ | | 12 | 0.59 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Arsenic | 31 | | 2.0 | 0.79 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Barium | 65 | | 20 | 0.39 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Beryllium | 0.59 | J | 2.0 | 0.039 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Cadmium | 0.27 | J | 2.0 | 0.20 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Calcium | 3100 | | 200 | 7.9 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Chromium | 160 | | 2.0 | 0.39 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Cobalt | 11 | | 9.8 | 0.79 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Copper | 77 | | 2.0 | 0.39 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Iron | 24000 | | 9.8 | 2.0 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Lead | 140 | | 2.0 | 0.79 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Magnesium | 5800 | | 200 | 12 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Manganese | 310 | | 9.8 | 0.20 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Nickel | 23 | | 9.8 | 0.39 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Potassium | 1100 | | 980 | 39 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Selenium | 0.64 | J | 2.0 | 0.49 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Silver | ND | | 2.0 | 0.39 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Sodium | 150 | J | 200 | 7.9 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Thallium | ND | | 3.9 | 0.98 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Vanadium | 17 | | 9.8 | 0.39 | mg/Kg-dry | 1 | 10/19/09 13:50 |
| Zinc | 83 | | 3.9 | 1.2 | mg/Kg-dry | 1 | 10/19/09 13:50 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477037 **Project Supervisor:** Anthony Crescenzi



NW 12/1/09

12

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-012A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | *WC-4-SED-A* |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:10 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 22.1 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5976 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 9500 | | 13 | 5.1 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Antimony | ~~ND~~ | UJ | 7.7 | 0.39 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Arsenic | 2.4 | | 1.3 | 0.51 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Barium | 24 | | 13 | 0.26 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Beryllium | 0.26 | J | 1.3 | 0.026 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Cadmium | 0.22 | J | 1.3 | 0.13 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Calcium | 1600 | | 130 | 5.1 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Chromium | 13 | | 1.3 | 0.26 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Cobalt | 8.9 | | 6.4 | 0.51 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Copper | 9.4 | | 1.3 | 0.26 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Iron | 22000 | | 6.4 | 1.3 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Lead | 9.2 | | 1.3 | 0.51 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Magnesium | 5000 | | 130 | 7.7 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Manganese | 250 | | 6.4 | 0.13 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Nickel | 18 | | 6.4 | 0.26 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Potassium | 710 | | 640 | 26 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Selenium | ND | | 1.3 | 0.32 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Silver | ND | | 1.3 | 0.26 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Sodium | 51 | J | 130 | 5.1 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Thallium | ND | | 2.6 | 0.64 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Vanadium | 10 | | 6.4 | 0.26 | mg/Kg-dry | 1 | 10/19/09 13:54 |
| Zinc | 64 | | 2.6 | 0.77 | mg/Kg-dry | 1 | 10/19/09 13:54 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477038 **Project Supervisor:** Anthony Crescenzi



hw 12/1/09

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-013A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-4-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:15 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 35.2 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5977 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 11000 | | 15 | 6.2 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Antimony | ~~ND~~ | UJ | 9.3 | 0.46 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Arsenic | 1.8 | | 1.5 | 0.62 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Barium | 30 | | 15 | 0.31 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Beryllium | 0.34 | J | 1.5 | 0.031 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Cadmium | 0.22 | J | 1.5 | 0.15 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Calcium | 1500 | | 150 | 6.2 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Chromium | 13 | | 1.5 | 0.31 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Cobalt | 9.9 | | 7.7 | 0.62 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Copper | 9.0 | | 1.5 | 0.31 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Iron | 24000 | | 7.7 | 1.5 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Lead | 7.0 | | 1.5 | 0.62 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Magnesium | 5800 | | 150 | 9.3 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Manganese | 260 | | 7.7 | 0.15 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Nickel | 20 | | 7.7 | 0.31 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Potassium | 900 | | 770 | 31 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Selenium | 0.40 | J | 1.5 | 0.39 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Silver | ND | | 1.5 | 0.31 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Sodium | 82 | J | 150 | 6.2 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Thallium | ND | | 3.1 | 0.77 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Vanadium | 12 | | 7.7 | 0.31 | mg/Kg-dry | 1 | 10/19/09 13:57 |
| Zinc | 63 | | 3.1 | 0.93 | mg/Kg-dry | 1 | 10/19/09 13:57 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477039 **Project Supervisor:** Anthony Crescenzi



nw 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-014A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-4-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 28.1 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5984 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| TOTAL METALS BY ICP | | | | | SW6010B | | (SW3050B) |
| Aluminum | 11000 | | 14 | 5.6 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Antimony | ~~ND~~ | UJ | 8.3 | 0.42 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Arsenic | 1.6 | | 1.4 | 0.56 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Barium | 28 | | 14 | 0.28 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Beryllium | 0.31 | J | 1.4 | 0.028 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Cadmium | 0.20 | J | 1.4 | 0.14 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Calcium | 1100 | | 140 | 5.6 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Chromium | 13 | | 1.4 | 0.28 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Cobalt | 9.9 | | 7.0 | 0.56 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Copper | 7.9 | | 1.4 | 0.28 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Iron | 25000 | | 7.0 | 1.4 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Lead | 5.5 | | 1.4 | 0.56 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Magnesium | 6000 | | 140 | 8.3 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Manganese | 260 | | 7.0 | 0.14 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Nickel | 21 | | 7.0 | 0.28 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Potassium | 870 | | 700 | 28 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Selenium | ND | | 1.4 | 0.35 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Silver | ND | | 1.4 | 0.28 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Sodium | 91 | J | 140 | 5.6 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Thallium | ND | | 2.8 | 0.70 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Vanadium | 12 | | 7.0 | 0.28 | mg/Kg-dry | 1 | 10/19/09 14:22 |
| Zinc | 64 | | 2.8 | 0.83 | mg/Kg-dry | 1 | 10/19/09 14:22 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477046 **Project Supervisor:** Anthony Crescenzi

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15

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-015A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 37.8 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5985 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 13000 | | 16 | 6.4 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Antimony | 2.5 | J | 9.6 | 0.48 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Arsenic | 8.2 | | 1.6 | 0.64 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Barium | 50 | | 16 | 0.32 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Beryllium | 0.39 J | | 1.6 | 0.032 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Cadmium | 1.9 | | 1.6 | 0.16 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Calcium | 1700 | | 160 | 6.4 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Chromium | 68 | | 1.6 | 0.32 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Cobalt | 11 | | 8.0 | 0.64 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Copper | 30 | | 1.6 | 0.32 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Iron | 27000 | | 8.0 | 1.6 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Lead | 110 | | 1.6 | 0.64 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Magnesium | 6200 | | 160 | 9.6 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Manganese | 300 | | 8.0 | 0.16 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Nickel | 23 | | 8.0 | 0.32 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Potassium | 900 | | 800 | 32 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Selenium | 0.50 J | | 1.6 | 0.40 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Silver | ND | | 1.6 | 0.32 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Sodium | 62 J | | 160 | 6.4 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Thallium | ND | | 3.2 | 0.80 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Vanadium | 14 | | 8.0 | 0.32 | mg/Kg-dry | 1 | 10/19/09 14:25 |
| Zinc | 220 | | 3.2 | 0.96 | mg/Kg-dry | 1 | 10/19/09 14:25 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477047 **Project Supervisor:** Anthony Crescenzi

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Rev 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-016A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 42.6 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5986 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 14000 | | 17 | 7.0 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Antimony | 21 | J | 10 | 0.52 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Arsenic | 8.9 | | 1.7 | 0.70 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Barium | 67 | | 17 | 0.35 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Beryllium | 0.54 | J | 1.7 | 0.035 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Cadmium | 4.7 | | 1.7 | 0.17 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Calcium | 2900 | | 170 | 7.0 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Chromium | 200 | | 1.7 | 0.35 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Cobalt | 11 | | 8.7 | 0.70 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Copper | 65 | | 1.7 | 0.35 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Iron | 27000 | | 8.7 | 1.7 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Lead | 130 | | 1.7 | 0.70 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Magnesium | 5800 | | 170 | 10 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Manganese | 330 | | 8.7 | 0.17 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Nickel | 23 | | 8.7 | 0.35 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Potassium | 1100 | | 870 | 35 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Selenium | 0.55 | J | 1.7 | 0.44 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Silver | ND | | 1.7 | 0.35 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Sodium | 85 | J | 170 | 7.0 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Thallium | ND | | 3.5 | 0.87 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Vanadium | 16 | | 8.7 | 0.35 | mg/Kg-dry | 1 | 10/19/09 14:29 |
| Zinc | 480 | | 3.5 | 1.0 | mg/Kg-dry | 1 | 10/19/09 14:29 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477048 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-017A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 53.5 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5987 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 15000 | | 22 | 8.6 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Antimony | 34 | J | 13 | 0.65 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Arsenic | 50 | | 2.2 | 0.86 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Barium | 86 | | 22 | 0.43 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Beryllium | 0.68 | J | 2.2 | 0.043 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Cadmium | 14 | | 2.2 | 0.22 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Calcium | 4000 | | 220 | 8.6 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Chromium | 1100 | | 2.2 | 0.43 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Cobalt | 12 | | 11 | 0.86 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Copper | 200 | | 2.2 | 0.43 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Iron | 28000 | | 11 | 2.2 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Lead | 330 | | 2.2 | 0.86 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Magnesium | 5800 | | 220 | 13 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Manganese | 410 | | 11 | 0.22 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Nickel | 25 | | 11 | 0.43 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Potassium | 1300 | | 1100 | 43 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Selenium | 1.5 | J | 2.2 | 0.54 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Silver | ND | | 2.2 | 0.43 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Sodium | 110 | J | 220 | 8.6 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Thallium | ND | | 4.3 | 1.1 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Vanadium | 19 | | 11 | 0.43 | mg/Kg-dry | 1 | 10/19/09 14:33 |
| Zinc | 1300 | E | 4.3 | 1.3 | mg/Kg-dry | 1 | 10/19/09 14:33 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477049 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

17DL

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-017ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 53.5 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-DL-6028 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Zinc | 1400 | | 22 | 6.5 | mg/Kg-dry | 5 | 10/19/09 17:14 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477090 **Project Supervisor:** Anthony Crescenzi

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HW 12/1/09

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# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-018A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 74.2 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5988 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 15000 | | 39 | 16 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Antimony | ~~ND~~ | UJ | 23 | 1.2 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Arsenic | 5.0 | | 3.9 | 1.6 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Barium | 76 | | 39 | 0.78 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Beryllium | 0.63 | J | 3.9 | 0.078 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Cadmium | 3.6 | J | 3.9 | 0.39 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Calcium | 6300 | | 390 | 16 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Chromium | 180 | | 3.9 | 0.78 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Cobalt | 12 | J | 19 | 1.6 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Copper | 120 | | 3.9 | 0.78 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Iron | 25000 | | 19 | 3.9 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Lead | 210 | | 3.9 | 1.6 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Magnesium | 6300 | | 390 | 23 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Manganese | 350 | | 19 | 0.39 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Nickel | 35 | | 19 | 0.78 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Potassium | 1400 | J | 1900 | 78 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Selenium | 1.4 | J | 3.9 | 0.97 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Silver | ND | | 3.9 | 0.78 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Sodium | 180 | J | 390 | 16 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Thallium | ND | | 7.8 | 1.9 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Vanadium | 20 | | 19 | 0.78 | mg/Kg-dry | 1 | 10/19/09 14:36 |
| Zinc | 410 | | 7.8 | 2.3 | mg/Kg-dry | 1 | 10/19/09 14:36 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477050 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-019A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:50 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 66.2 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5989 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 18000 | | 30 | 12 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Antimony | 35 | J | 18 | 0.89 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Arsenic | 33 | | 3.0 | 1.2 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Barium | 170 | | 30 | 0.59 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Beryllium | 0.83 | J | 3.0 | 0.059 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Cadmium | 14 | | 3.0 | 0.30 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Calcium | 4400 | | 300 | 12 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Chromium | 1100 | | 3.0 | 0.59 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Cobalt | 13 | J | 15 | 1.2 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Copper | 230 | | 3.0 | 0.59 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Iron | 31000 | | 15 | 3.0 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Lead | 370 | | 3.0 | 1.2 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Magnesium | 6000 | | 300 | 18 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Manganese | 350 | | 15 | 0.30 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Nickel | 28 | | 15 | 0.59 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Potassium | 1400 | J | 1500 | 59 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Selenium | 2.5 | J | 3.0 | 0.74 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Silver | ND | | 3.0 | 0.59 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Sodium | 170 | J | 300 | 12 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Thallium | ND | | 5.9 | 1.5 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Vanadium | 22 | | 15 | 0.59 | mg/Kg-dry | 1 | 10/19/09 14:40 |
| Zinc | 1300 | | 5.9 | 1.8 | mg/Kg-dry | 1 | 10/19/09 14:40 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477051 **Project Supervisor:** Anthony Crescenzi

hw 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-020A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 57.9 | **BatchNo:** 10139/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5990 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 16000 | | 24 | 9.5 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Antimony | 25 | J | 14 | 0.71 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Arsenic | 46 | | 2.4 | 0.95 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Barium | 100 | | 24 | 0.48 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Beryllium | 0.68 | J | 2.4 | 0.048 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Cadmium | 7.5 | | 2.4 | 0.24 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Calcium | 4100 | | 240 | 9.5 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Chromium | 2000 | | 2.4 | 0.48 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Cobalt | 11 | J | 12 | 0.95 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Copper | 200 | | 2.4 | 0.48 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Iron | 25000 | | 12 | 2.4 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Lead | 340 | | 2.4 | 0.95 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Magnesium | 5400 | | 240 | 14 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Manganese | 320 | | 12 | 0.24 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Nickel | 24 | | 12 | 0.48 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Potassium | 1100 | J | 1200 | 48 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Selenium | 1.4 | J | 2.4 | 0.59 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Silver | ND | | 2.4 | 0.48 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Sodium | 140 | J | 240 | 9.5 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Thallium | ND | | 4.8 | 1.2 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Vanadium | 18 | | 12 | 0.48 | mg/Kg-dry | 1 | 10/19/09 14:43 |
| Zinc | 810 | | 4.8 | 1.4 | mg/Kg-dry | 1 | 10/19/09 14:43 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477052 **Project Supervisor:** Anthony Crescenzi

HW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-021A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 76.2 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5998 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 14000 | | 42 | 17 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Antimony | 2.0 | J | 25 | 1.3 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Arsenic | 7.3 | | 4.2 | 1.7 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Barium | 71 | | 42 | 0.84 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Beryllium | 0.61 | J | 4.2 | 0.084 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Cadmium | 4.9 | | 4.2 | 0.42 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Calcium | 6300 | | 420 | 17 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Chromium | 310 | | 4.2 | 0.84 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Cobalt | 13 | J | 21 | 1.7 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Copper | 140 | | 4.2 | 0.84 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Iron | 26000 | | 21 | 4.2 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Lead | 210 | | 4.2 | 1.7 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Magnesium | 6200 | | 420 | 25 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Manganese | 390 | | 21 | 0.42 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Nickel | 34 | | 21 | 0.84 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Potassium | 1200 | J | 2100 | 84 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Selenium | 1.5 | J | 4.2 | 1.1 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Silver | ND | | 4.2 | 0.84 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Sodium | 180 | J | 420 | 17 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Thallium | ND | | 8.4 | 2.1 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Vanadium | 17 | J | 21 | 0.84 | mg/Kg-dry | 1 | 10/19/09 15:22 |
| Zinc | 550 | | 8.4 | 2.5 | mg/Kg-dry | 1 | 10/19/09 15:22 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477060 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-022A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 73.9 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5999 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 17000 | | 38 | 15 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Antimony | 34 | J | 23 | 1.1 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Arsenic | 23 | | 3.8 | 1.5 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Barium | 87 | | 38 | 0.77 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Beryllium | 0.76 | J | 3.8 | 0.077 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Cadmium | 11 | | 3.8 | 0.38 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Calcium | 6000 | | 380 | 15 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Chromium | 840 | | 3.8 | 0.77 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Cobalt | 15 | J | 19 | 1.5 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Copper | 230 | | 3.8 | 0.77 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Iron | 30000 | | 19 | 3.8 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Lead | 340 | | 3.8 | 1.5 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Magnesium | 6800 | | 380 | 23 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Manganese | 410 | | 19 | 0.38 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Nickel | 43 | | 19 | 0.77 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Potassium | 1400 | J | 1900 | 77 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Selenium | 1.7 | J | 3.8 | 0.96 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Silver | ND | | 3.8 | 0.77 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Sodium | 190 | J | 380 | 15 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Thallium | ND | | 7.7 | 1.9 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Vanadium | 27 | | 19 | 0.77 | mg/Kg-dry | 1 | 10/19/09 15:25 |
| Zinc | 990 | | 7.7 | 2.3 | mg/Kg-dry | 1 | 10/19/09 15:25 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477061 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-023A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 59.5 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6000 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 14000 | | 25 | 9.9 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Antimony | ~~ND~~ UJ | | 15 | 0.74 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Arsenic | 7.5 | | 2.5 | 0.99 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Barium | 84 | | 25 | 0.49 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Beryllium | 0.62 | J | 2.5 | 0.049 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Cadmium | ND | | 2.5 | 0.25 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Calcium | 4300 | | 250 | 9.9 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Chromium | 35 | | 2.5 | 0.49 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Cobalt | 8.8 | J | 12 | 0.99 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Copper | 22 | | 2.5 | 0.49 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Iron | 21000 | | 12 | 2.5 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Lead | 39 | | 2.5 | 0.99 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Magnesium | 4800 | | 250 | 15 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Manganese | 370 | | 12 | 0.25 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Nickel | 21 | | 12 | 0.49 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Potassium | 890 | J | 1200 | 49 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Selenium | 1.1 | J | 2.5 | 0.62 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Silver | ND | | 2.5 | 0.49 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Sodium | 110 | J | 250 | 9.9 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Thallium | ND | | 4.9 | 1.2 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Vanadium | 15 | | 12 | 0.49 | mg/Kg-dry | 1 | 10/19/09 15:29 |
| Zinc | 71 | | 4.9 | 1.5 | mg/Kg-dry | 1 | 10/19/09 15:29 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477062 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-025A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 50.1 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6001 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 15000 | | 20 | 8.0 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Antimony | 15 | J | 12 | 0.60 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Arsenic | 18 | | 2.0 | 0.80 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Barium | 91 | | 20 | 0.40 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Beryllium | 0.57 | J | 2.0 | 0.040 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Cadmium | 3.9 | | 2.0 | 0.20 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Calcium | 2900 | | 200 | 8.0 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Chromium | 250 | | 2.0 | 0.40 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Cobalt | 11 | | 10 | 0.80 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Copper | 150 | | 2.0 | 0.40 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Iron | 24000 | | 10 | 2.0 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Lead | 230 | | 2.0 | 0.80 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Magnesium | 5900 | | 200 | 12 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Manganese | 300 | | 10 | 0.20 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Nickel | 25 | | 10 | 0.40 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Potassium | 950 | J | 1000 | 40 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Selenium | 0.93 | J | 2.0 | 0.50 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Silver | ND | | 2.0 | 0.40 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Sodium | 97 | J | 200 | 8.0 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Thallium | ND | | 4.0 | 1.0 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Vanadium | 17 | | 10 | 0.40 | mg/Kg-dry | 1 | 10/19/09 15:32 |
| Zinc | 560 | | 4.0 | 1.2 | mg/Kg-dry | 1 | 10/19/09 15:32 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477063 **Project Supervisor:** Anthony Crescenzi

MW, 21/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-026A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:00 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 39.5 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6009 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 13000 | | 17 | 6.6 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Antimony | 0.94 | J | 9.9 | 0.50 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Arsenic | 34 | | 1.7 | 0.66 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Barium | 64 | | 17 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Beryllium | 0.54 | J | 1.7 | 0.033 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Cadmium | 0.39 | J | 1.7 | 0.17 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Calcium | 2300 | | 170 | 6.6 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Chromium | 130 | | 1.7 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Cobalt | 11 | | 8.3 | 0.66 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Copper | 81 | | 1.7 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Iron | 22000 | | 8.3 | 1.7 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Lead | 160 | | 1.7 | 0.66 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Magnesium | 5600 | | 170 | 9.9 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Manganese | 200 | | 8.3 | 0.17 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Nickel | 22 | | 8.3 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Potassium | 820 | J | 830 | 33 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Selenium | 0.49 | J | 1.7 | 0.41 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Silver | ND | | 1.7 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Sodium | 71 | J | 170 | 6.6 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Thallium | ND | | 3.3 | 0.83 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Vanadium | 15 | | 8.3 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:01 |
| Zinc | 110 | | 3.3 | 0.99 | mg/Kg-dry | 1 | 10/19/09 16:01 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477071 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-027A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:05 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 39.1 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6010 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 15000 | | 16 | 6.6 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Antimony | ~~ND~~ | UJ | 9.9 | 0.49 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Arsenic | 16 | | 1.6 | 0.66 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Barium | 69 | | 16 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Beryllium | 0.59 | J | 1.6 | 0.033 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Cadmium | 0.19 | J | 1.6 | 0.16 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Calcium | 2100 | | 160 | 6.6 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Chromium | 120 | | 1.6 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Cobalt | 11 | | 8.2 | 0.66 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Copper | 46 | | 1.6 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Iron | 24000 | | 8.2 | 1.6 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Lead | 160 | | 1.6 | 0.66 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Magnesium | 6200 | | 160 | 9.9 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Manganese | 230 | | 8.2 | 0.16 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Nickel | 24 | | 8.2 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Potassium | 840 | | 820 | 33 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Selenium | 0.67 | J | 1.6 | 0.41 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Silver | ND | | 1.6 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Sodium | 74 | J | 160 | 6.6 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Thallium | ND | | 3.3 | 0.82 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Vanadium | 17 | | 8.2 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:05 |
| Zinc | 87 | | 3.3 | 0.99 | mg/Kg-dry | 1 | 10/19/09 16:05 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477072 **Project Supervisor:** Anthony Crescenzi

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GW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-028A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 68.7 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6011 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 13000 | | 32 | 13 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Antimony | ~~ND~~ | UJ | 19 | 0.96 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Arsenic | 5.4 | | 3.2 | 1.3 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Barium | 73 | | 32 | 0.64 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Beryllium | 0.57 | J | 3.2 | 0.064 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Cadmium | 2.0 | J | 3.2 | 0.32 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Calcium | 6200 | | 320 | 13 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Chromium | 110 | | 3.2 | 0.64 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Cobalt | 12 | J | 16 | 1.3 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Copper | 69 | | 3.2 | 0.64 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Iron | 25000 | | 16 | 3.2 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Lead | 130 | | 3.2 | 1.3 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Magnesium | 6600 | | 320 | 19 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Manganese | 520 | | 16 | 0.32 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Nickel | 28 | | 16 | 0.64 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Potassium | 1100 | J | 1600 | 64 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Selenium | 1.2 | J | 3.2 | 0.80 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Silver | ND | | 3.2 | 0.64 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Sodium | 150 | J | 320 | 13 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Thallium | ND | | 6.4 | 1.6 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Vanadium | 20 | | 16 | 0.64 | mg/Kg-dry | 1 | 10/19/09 16:08 |
| Zinc | 280 | | 6.4 | 1.9 | mg/Kg-dry | 1 | 10/19/09 16:08 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477073 **Project Supervisor:** Anthony Crescenzi

NW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-029A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 54.6 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6012 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 12000 | | 22 | 8.8 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Antimony | 0.86 | J | 13 | 0.66 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Arsenic | 6.7 | | 2.2 | 0.88 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Barium | 69 | | 22 | 0.44 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Beryllium | 0.55 | J | 2.2 | 0.044 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Cadmium | 3.1 | | 2.2 | 0.22 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Calcium | 4800 | | 220 | 8.8 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Chromium | 120 | | 2.2 | 0.44 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Cobalt | 13 | | 11 | 0.88 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Copper | 130 | | 2.2 | 0.44 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Iron | 26000 | | 11 | 2.2 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Lead | 180 | | 2.2 | 0.88 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Magnesium | 6000 | | 220 | 13 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Manganese | 500 | | 11 | 0.22 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Nickel | 27 | | 11 | 0.44 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Potassium | 810 | J | 1100 | 44 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Selenium | 0.63 | J | 2.2 | 0.55 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Silver | 0.46 | J | 2.2 | 0.44 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Sodium | 87 | J | 220 | 8.8 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Thallium | ND | | 4.4 | 1.1 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Vanadium | 20 | | 11 | 0.44 | mg/Kg-dry | 1 | 10/19/09 16:12 |
| Zinc | 390 | | 4.4 | 1.3 | mg/Kg-dry | 1 | 10/19/09 16:12 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477074 **Project Supervisor:** Anthony Crescenzi

hw 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-030A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 52.3 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6013 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 14000 | | 21 | 8.4 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Antimony | 4.0 J | | 13 | 0.63 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Arsenic | 110 | | 2.1 | 0.84 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Barium | 91 | | 21 | 0.42 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Beryllium | 0.62 J | | 2.1 | 0.042 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Cadmium | 23 | | 2.1 | 0.21 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Calcium | 4400 | | 210 | 8.4 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Chromium | 3000 | | 2.1 | 0.42 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Cobalt | 11 | | 10 | 0.84 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Copper | 350 | | 2.1 | 0.42 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Iron | 28000 | | 10 | 2.1 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Lead | 620 | | 2.1 | 0.84 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Magnesium | 5500 | | 210 | 13 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Manganese | 430 | | 10 | 0.21 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Nickel | 22 | | 10 | 0.42 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Potassium | 1100 | | 1000 | 42 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Selenium | 1.3 J | | 2.1 | 0.52 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Silver | ND | | 2.1 | 0.42 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Sodium | 85 J | | 210 | 8.4 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Thallium | ND | | 4.2 | 1.0 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Vanadium | 17 | | 10 | 0.42 | mg/Kg-dry | 1 | 10/19/09 16:15 |
| Zinc | 1900 E | | 4.2 | 1.3 | mg/Kg-dry | 1 | 10/19/09 16:15 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477075 **Project Supervisor:** Anthony Crescenzi

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30DL

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-030ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 52.3 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-DL-6029 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Zinc | 2100 | | 21 | 6.3 | mg/Kg-dry | 5 | 10/19/09 17:19 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477091 **Project Supervisor:** Anthony Crescenzi

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| CLIENT: | EA Engineering Science and Technology | Lab ID: | 0910044-031A |
| Project: | DEC - Wappinger Creek | Client Sample ID: | *WC-10-SED-A* |
| W Order: | 0910044 | Collection Date: | 10/12/09 17:00 |
| Matrix: | SEDIMENT | Date Received: | 10/13/09 10:07 |
| Inst. ID: | ICAP 61E | Sample Size: 0.5 g | PrepDate: 10/15/09 0:00 |
| ColumnID: | | %Moisture: 44.7 | BatchNo: 10140/R18571 |
| Revision: | 10/20/09 16:46 | TestCode: 6010S | FileID: 1-SAMP-6014 |
| Col Type: | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| TOTAL METALS BY ICP | | | | | SW6010B | | (SW3050B) |
| Aluminum | 14000 | | 18 | 7.2 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Antimony | ~~ND~~ 11 J | | 11 | 0.54 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Arsenic | 4.7 | | 1.8 | 0.72 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Barium | 62 | | 18 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Beryllium | 0.48 | J | 1.8 | 0.036 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Cadmium | 0.35 | J | 1.8 | 0.18 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Calcium | 4000 | | 180 | 7.2 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Chromium | 21 | | 1.8 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Cobalt | 10 | | 9.0 | 0.72 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Copper | 22 | | 1.8 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Iron | 31000 | | 9.0 | 1.8 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Lead | 30 | | 1.8 | 0.72 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Magnesium | 7700 | | 180 | 11 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Manganese | 610 | | 9.0 | 0.18 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Nickel | 24 | | 9.0 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Potassium | 910 | | 900 | 36 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Selenium | ND | | 1.8 | 0.45 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Silver | ND | | 1.8 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Sodium | 89 | J | 180 | 7.2 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Thallium | ND | | 3.6 | 0.90 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Vanadium | 16 | | 9.0 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:19 |
| Zinc | 100 | | 3.6 | 1.1 | mg/Kg-dry | 1 | 10/19/09 16:19 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477076 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-032A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-10-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:05 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 13.1 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6015 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 9700 | | 12 | 4.6 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Antimony | ND UJ | | 6.9 | 0.35 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Arsenic | 2.5 | | 1.2 | 0.46 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Barium | 23 | | 12 | 0.23 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Beryllium | 0.33 | J | 1.2 | 0.023 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Cadmium | 0.17 | J | 1.2 | 0.12 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Calcium | 930 | | 120 | 4.6 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Chromium | 9.8 | | 1.2 | 0.23 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Cobalt | 7.9 | | 5.8 | 0.46 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Copper | 10 | | 1.2 | 0.23 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Iron | 25000 | | 5.8 | 1.2 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Lead | 17 | | 1.2 | 0.46 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Magnesium | 6000 | | 120 | 6.9 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Manganese | 180 | | 5.8 | 0.12 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Nickel | 17 | | 5.8 | 0.23 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Potassium | 480 | J | 580 | 23 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Selenium | ND | | 1.2 | 0.29 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Silver | ND | | 1.2 | 0.23 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Sodium | 30 | J | 120 | 4.6 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Thallium | ND | | 2.3 | 0.58 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Vanadium | 12 | | 5.8 | 0.23 | mg/Kg-dry | 1 | 10/19/09 16:23 |
| Zinc | 53 | | 2.3 | 0.69 | mg/Kg-dry | 1 | 10/19/09 16:23 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477077 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-033A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-11-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 15.7 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6016 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 11000 | | 12 | 4.7 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Antimony | 6.9 | ~~J~~ | 7.1 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Arsenic | 7.4 | | 1.2 | 0.47 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Barium | 27 | | 12 | 0.24 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Beryllium | 0.37 | J | 1.2 | 0.024 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Cadmium | 1.3 | | 1.2 | 0.12 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Calcium | 5900 | | 120 | 4.7 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Chromium | 38 | | 1.2 | 0.24 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Cobalt | 10 | | 5.9 | 0.47 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Copper | 33 | | 1.2 | 0.24 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Iron | 27000 | | 5.9 | 1.2 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Lead | 67 | | 1.2 | 0.47 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Magnesium | 6200 | | 120 | 7.1 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Manganese | 310 | | 5.9 | 0.12 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Nickel | 23 | | 5.9 | 0.24 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Potassium | 630 | | 590 | 24 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Selenium | ND | | 1.2 | 0.30 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Silver | ND | | 1.2 | 0.24 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Sodium | 42 | J | 120 | 4.7 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Thallium | ND | | 2.4 | 0.59 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Vanadium | 14 | | 5.9 | 0.24 | mg/Kg-dry | 1 | 10/19/09 16:26 |
| Zinc | 280 | | 2.4 | 0.71 | mg/Kg-dry | 1 | 10/19/09 16:26 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477078 **Project Supervisor:** Anthony Crescenzi

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MW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-034A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-11-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 44.7 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6017 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 16000 | | 18 | 7.2 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Antimony | 4.3 ~~J~~ | | 11 | 0.54 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Arsenic | 15 | | 1.8 | 0.72 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Barium | 46 | | 18 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Beryllium | 0.52 | J | 1.8 | 0.036 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Cadmium | 1.8 | | 1.8 | 0.18 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Calcium | 2300 | | 180 | 7.2 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Chromium | 250 | | 1.8 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Cobalt | 14 | | 9.0 | 0.72 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Copper | 47 | | 1.8 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Iron | 36000 | | 9.0 | 1.8 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Lead | 180 | | 1.8 | 0.72 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Magnesium | 8100 | | 180 | 11 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Manganese | 330 | | 9.0 | 0.18 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Nickel | 28 | | 9.0 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Potassium | 1100 | | 900 | 36 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Selenium | ND | | 1.8 | 0.45 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Silver | ND | | 1.8 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Sodium | 73 | J | 180 | 7.2 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Thallium | ND | | 3.6 | 0.90 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Vanadium | 20 | | 9.0 | 0.36 | mg/Kg-dry | 1 | 10/19/09 16:30 |
| Zinc | 380 | | 3.6 | 1.1 | mg/Kg-dry | 1 | 10/19/09 16:30 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477079 **Project Supervisor:** Anthony Crescenzi

NW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-035A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-12-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:40 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 34.0 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6018 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 13000 | | 15 | 6.1 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Antimony | ~~ND~~ | UJ | 9.1 | 0.45 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Arsenic | 5.0 | | 1.5 | 0.61 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Barium | 46 | | 15 | 0.30 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Beryllium | 0.54 | J | 1.5 | 0.030 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Cadmium | 0.24 | J | 1.5 | 0.15 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Calcium | 2400 | | 150 | 6.1 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Chromium | 16 | | 1.5 | 0.30 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Cobalt | 9.1 | | 7.6 | 0.61 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Copper | 18 | | 1.5 | 0.30 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Iron | 27000 | | 7.6 | 1.5 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Lead | 17 | | 1.5 | 0.61 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Magnesium | 6200 | | 150 | 9.1 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Manganese | 330 | | 7.6 | 0.15 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Nickel | 23 | | 7.6 | 0.30 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Potassium | 920 | | 760 | 30 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Selenium | 0.43 | J | 1.5 | 0.38 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Silver | ND | | 1.5 | 0.30 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Sodium | 68 | J | 150 | 6.1 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Thallium | ND | | 3.0 | 0.76 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Vanadium | 14 | | 7.6 | 0.30 | mg/Kg-dry | 1 | 10/19/09 16:33 |
| Zinc | 80 | | 3.0 | 0.91 | mg/Kg-dry | 1 | 10/19/09 16:33 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477080 **Project Supervisor:** Anthony Crescenzi

NW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-036A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-12-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 23.5 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6022 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 12000 | | 13 | 5.2 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Antimony | ~~ND~~ 4J | | 7.8 | 0.39 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Arsenic | 6.7 | | 1.3 | 0.52 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Barium | 37 | | 13 | 0.26 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Beryllium | 0.45 | J | 1.3 | 0.026 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Cadmium | 0.25 | J | 1.3 | 0.13 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Calcium | 1400 | | 130 | 5.2 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Chromium | 14 | | 1.3 | 0.26 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Cobalt | 11 | | 6.5 | 0.52 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Copper | 17 | | 1.3 | 0.26 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Iron | 28000 | | 6.5 | 1.3 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Lead | 13 | | 1.3 | 0.52 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Magnesium | 5900 | | 130 | 7.8 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Manganese | 170 | | 6.5 | 0.13 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Nickel | 23 | | 6.5 | 0.26 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Potassium | 940 | | 650 | 26 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Selenium | ND | | 1.3 | 0.33 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Silver | ND | | 1.3 | 0.26 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Sodium | 51 | J | 130 | 5.2 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Thallium | ND | | 2.6 | 0.65 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Vanadium | 15 | | 6.5 | 0.26 | mg/Kg-dry | 1 | 10/19/09 16:47 |
| Zinc | 62 | | 2.6 | 0.78 | mg/Kg-dry | 1 | 10/19/09 16:47 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477084 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-037A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-13-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:00 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 18.4 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6023 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 14000 | | 12 | 4.9 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Antimony | ~~ND~~ 4.7 | | 7.4 | 0.37 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Arsenic | 6.8 | | 1.2 | 0.49 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Barium | 33 | | 12 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Beryllium | 0.45 | J | 1.2 | 0.025 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Cadmium | 0.52 | J | 1.2 | 0.12 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Calcium | 2300 | | 120 | 4.9 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Chromium | 21 | | 1.2 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Cobalt | 12 | | 6.1 | 0.49 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Copper | 16 | | 1.2 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Iron | 41000 | | 6.1 | 1.2 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Lead | 33 | | 1.2 | 0.49 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Magnesium | 7700 | | 120 | 7.4 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Manganese | 590 | | 6.1 | 0.12 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Nickel | 27 | | 6.1 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Potassium | 760 | | 610 | 25 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Selenium | ND | | 1.2 | 0.31 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Silver | ND | | 1.2 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Sodium | 56 | J | 120 | 4.9 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Thallium | ND | | 2.5 | 0.61 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Vanadium | 15 | | 6.1 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:52 |
| Zinc | 340 | | 2.5 | 0.74 | mg/Kg-dry | 1 | 10/19/09 16:52 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477085 **Project Supervisor:** Anthony Crescenzi

ewd 12/1/09

# Life Science Laboratories, Inc.

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-038A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-13-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:05 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 18.4 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6024 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 11000 | | 12 | 4.9 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Antimony | ~~ND~~ | UJ | 7.4 | 0.37 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Arsenic | 3.5 | | 1.2 | 0.49 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Barium | 27 | | 12 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Beryllium | 0.40 | J | 1.2 | 0.025 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Cadmium | 0.26 | J | 1.2 | 0.12 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Calcium | 1100 | | 120 | 4.9 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Chromium | 13 | | 1.2 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Cobalt | 9.8 | | 6.1 | 0.49 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Copper | 11 | | 1.2 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Iron | 28000 | | 6.1 | 1.2 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Lead | 11 | | 1.2 | 0.49 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Magnesium | 6100 | | 120 | 7.4 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Manganese | 330 | | 6.1 | 0.12 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Nickel | 21 | | 6.1 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Potassium | 740 | | 610 | 25 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Selenium | ND | | 1.2 | 0.31 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Silver | ND | | 1.2 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Sodium | 58 | J | 120 | 4.9 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Thallium | ND | | 2.5 | 0.61 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Vanadium | 12 | | 6.1 | 0.25 | mg/Kg-dry | 1 | 10/19/09 16:56 |
| Zinc | 68 | | 2.5 | 0.74 | mg/Kg-dry | 1 | 10/19/09 16:56 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477086 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-039A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-14-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:15 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 21.5 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6025 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 9100 | | 13 | 5.1 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Antimony | ~~ND~~ UJ | | 7.6 | 0.38 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Arsenic | 3.1 | | 1.3 | 0.51 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Barium | 21 | | 13 | 0.25 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Beryllium | 0.32 | J | 1.3 | 0.025 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Cadmium | 0.25 | J | 1.3 | 0.13 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Calcium | 1700 | | 130 | 5.1 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Chromium | 15 | | 1.3 | 0.25 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Cobalt | 7.5 | | 6.4 | 0.51 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Copper | 19 | | 1.3 | 0.25 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Iron | 24000 | | 6.4 | 1.3 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Lead | 42 | | 1.3 | 0.51 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Magnesium | 4800 | | 130 | 7.6 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Manganese | 250 | | 6.4 | 0.13 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Nickel | 16 | | 6.4 | 0.25 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Potassium | 640 | | 640 | 25 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Selenium | ND | | 1.3 | 0.32 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Silver | ND | | 1.3 | 0.25 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Sodium | 50 | J | 130 | 5.1 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Thallium | ND | | 2.5 | 0.64 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Vanadium | 11 | | 6.4 | 0.25 | mg/Kg-dry | 1 | 10/19/09 17:01 |
| Zinc | 100 | | 2.5 | 0.76 | mg/Kg-dry | 1 | 10/19/09 17:01 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477087 **Project Supervisor:** Anthony Crescenzi



KW 12/1/09

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# Life Science Laboratories, Inc.

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-040A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-14-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 13.9 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6026 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 12000 | | 12 | 4.6 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Antimony | ~~ND~~ UJ | | 7.0 | 0.35 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Arsenic | 3.3 | | 1.2 | 0.46 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Barium | 25 | | 12 | 0.23 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Beryllium | 0.41 | J | 1.2 | 0.023 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Cadmium | 0.20 | J | 1.2 | 0.12 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Calcium | 1300 | | 120 | 4.6 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Chromium | 17 | | 1.2 | 0.23 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Cobalt | 10 | | 5.8 | 0.46 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Copper | 18 | | 1.2 | 0.23 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Iron | 30000 | | 5.8 | 1.2 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Lead | 12 | | 1.2 | 0.46 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Magnesium | 7100 | | 120 | 7.0 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Manganese | 290 | | 5.8 | 0.12 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Nickel | 23 | | 5.8 | 0.23 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Potassium | 680 | | 580 | 23 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Selenium | ND | | 1.2 | 0.29 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Silver | ND | | 1.2 | 0.23 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Sodium | 44 | J | 120 | 4.6 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Thallium | ND | | 2.3 | 0.58 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Vanadium | 15 | | 5.8 | 0.23 | mg/Kg-dry | 1 | 10/19/09 17:05 |
| Zinc | 78 | | 2.3 | 0.70 | mg/Kg-dry | 1 | 10/19/09 17:05 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477088 **Project Supervisor:** Anthony Crescenzi

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MW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-042A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | *WC-15-SED-A* |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/15/09 0:00 |
| **ColumnID:** | | **%Moisture:** 22.5 | **BatchNo:** 10140/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-6027 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 9100 | | 13 | 5.2 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Antimony | 1.9 | J | 7.7 | 0.39 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Arsenic | 13 | | 1.3 | 0.52 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Barium | 38 | | 13 | 0.26 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Beryllium | 0.39 | J | 1.3 | 0.026 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Cadmium | 2.0 | | 1.3 | 0.13 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Calcium | 3800 | | 130 | 5.2 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Chromium | 170 | | 1.3 | 0.26 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Cobalt | 13 | | 6.5 | 0.52 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Copper | 240 | | 1.3 | 0.26 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Iron | 46000 | | 6.5 | 1.3 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Lead | 510 | | 1.3 | 0.52 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Magnesium | 4400 | | 130 | 7.7 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Manganese | 420 | | 6.5 | 0.13 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Nickel | 24 | | 6.5 | 0.26 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Potassium | 640 | J | 650 | 26 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Selenium | 0.94 | J | 1.3 | 0.32 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Silver | ND | | 1.3 | 0.26 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Sodium | 62 | J | 130 | 5.2 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Thallium | ND | | 2.6 | 0.65 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Vanadium | 13 | | 6.5 | 0.26 | mg/Kg-dry | 1 | 10/19/09 17:10 |
| Zinc | 410 | | 2.6 | 0.77 | mg/Kg-dry | 1 | 10/19/09 17:10 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 477089 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-043A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-15-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/16/09 0:00 |
| **ColumnID:** | | **%Moisture:** 35.3 | **BatchNo:** 10148/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5924 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 15000 | | 15 | 6.2 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Antimony | 2.3 | J | 9.3 | 0.46 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Arsenic | 10 | | 1.5 | 0.62 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Barium | 93 | | 15 | 0.31 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Beryllium | 0.64 | J | 1.5 | 0.031 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Cadmium | 1.7 | | 1.5 | 0.15 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Calcium | 11000 | | 150 | 6.2 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Chromium | 41 | | 1.5 | 0.31 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Cobalt | 9.4 | | 7.7 | 0.62 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Copper | 310 | | 1.5 | 0.31 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Iron | 30000 | | 7.7 | 1.5 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Lead | 620 | | 1.5 | 0.62 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Magnesium | 4500 | | 150 | 9.3 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Manganese | 340 | | 7.7 | 0.15 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Nickel | 21 | | 7.7 | 0.31 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Potassium | 2000 | | 770 | 31 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Selenium | 1.2 | J | 1.5 | 0.39 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Silver | ND | | 1.5 | 0.31 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Sodium | 1700 | | 150 | 6.2 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Thallium | ND | | 3.1 | 0.77 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Vanadium | 22 | | 7.7 | 0.31 | mg/Kg-dry | 1 | 10/19/09 10:38 |
| Zinc | 500 | | 3.1 | 0.93 | mg/Kg-dry | 1 | 10/19/09 10:38 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 476986 **Project Supervisor:** Anthony Crescenzi

NW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-045A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-A (Dup)*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/16/09 0:00 |
| **ColumnID:** | | **%Moisture:** 73.1 | **BatchNo:** 10148/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5925 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 15000 | | 37 | 15 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Antimony | ND | | 22 | 1.1 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Arsenic | 9.4 | | 3.7 | 1.5 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Barium | 88 | | 37 | 0.74 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Beryllium | 0.66 | J | 3.7 | 0.074 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Cadmium | 1.4 | J | 3.7 | 0.37 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Calcium | 7100 | | 370 | 15 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Chromium | 99 | | 3.7 | 0.74 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Cobalt | 15 | J | 19 | 1.5 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Copper | 67 | | 3.7 | 0.74 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Iron | 29000 | | 19 | 3.7 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Lead | 96 | | 3.7 | 1.5 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Magnesium | 7100 | | 370 | 22 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Manganese | 550 | | 19 | 0.37 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Nickel | 32 | | 19 | 0.74 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Potassium | 1500 | J | 1900 | 74 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Selenium | 1.1 | J | 3.7 | 0.93 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Silver | ND | | 3.7 | 0.74 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Sodium | 160 | J | 370 | 15 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Thallium | ND | | 7.4 | 1.9 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Vanadium | 24 | | 19 | 0.74 | mg/Kg-dry | 1 | 10/19/09 10:41 |
| Zinc | 240 | | 7.4 | 2.2 | mg/Kg-dry | 1 | 10/19/09 10:41 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 476987 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-046A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-A (Dup)*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/16/09 0:00 |
| **ColumnID:** | | **%Moisture:** 68.4 | **BatchNo:** 10148/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5926 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 13000 | | 32 | 13 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Antimony | ND | | 19 | 0.95 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Arsenic | 6.0 | | 3.2 | 1.3 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Barium | 67 | | 32 | 0.63 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Beryllium | 0.54 | J | 3.2 | 0.063 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Cadmium | 3.4 | | 3.2 | 0.32 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Calcium | 6300 | | 320 | 13 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Chromium | 60 | | 3.2 | 0.63 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Cobalt | 15 | J | 16 | 1.3 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Copper | 72 | | 3.2 | 0.63 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Iron | 24000 | | 16 | 3.2 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Lead | 100 | | 3.2 | 1.3 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Magnesium | 6400 | | 320 | 19 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Manganese | 420 | | 16 | 0.32 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Nickel | 34 | | 16 | 0.63 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Potassium | 1200 | J | 1600 | 63 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Selenium | ND | | 3.2 | 0.79 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Silver | ND | | 3.2 | 0.63 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Sodium | 140 | J | 320 | 13 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Thallium | ND | | 6.3 | 1.6 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Vanadium | 23 | | 16 | 0.63 | mg/Kg-dry | 1 | 10/19/09 10:45 |
| Zinc | 400 | | 6.3 | 1.9 | mg/Kg-dry | 1 | 10/19/09 10:45 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 476988 **Project Supervisor:** Anthony Crescenzi

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-047A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-A (Dup)*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | ICAP 61E | **Sample Size:** 0.5 g | **PrepDate:** 10/16/09 0:00 |
| **ColumnID:** | | **%Moisture:** 74.1 | **BatchNo:** 10148/R18571 |
| **Revision:** | 10/20/09 16:46 | **TestCode:** 6010S | **FileID:** 1-SAMP-5927 |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TOTAL METALS BY ICP** | | | | | **SW6010B** | | **(SW3050B)** |
| Aluminum | 15000 | | 39 | 15 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Antimony | ND | | 23 | 1.2 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Arsenic | 5.1 | | 3.9 | 1.5 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Barium | 77 | | 39 | 0.77 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Beryllium | 0.59 | J | 3.9 | 0.077 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Cadmium | 3.5 | J | 3.9 | 0.39 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Calcium | 6300 | | 390 | 15 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Chromium | 180 | | 3.9 | 0.77 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Cobalt | 12 | J | 19 | 1.5 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Copper | 130 | | 3.9 | 0.77 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Iron | 26000 | | 19 | 3.9 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Lead | 210 | | 3.9 | 1.5 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Magnesium | 6300 | | 390 | 23 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Manganese | 360 | | 19 | 0.39 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Nickel | 35 | | 19 | 0.77 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Potassium | 1200 | J | 1900 | 77 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Selenium | ND | | 3.9 | 0.97 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Silver | ND | | 3.9 | 0.77 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Sodium | 180 | J | 390 | 15 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Thallium | ND | | 7.7 | 1.9 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Vanadium | 19 | J | 19 | 0.77 | mg/Kg-dry | 1 | 10/19/09 10:48 |
| Zinc | 410 | | 7.7 | 2.3 | mg/Kg-dry | 1 | 10/19/09 10:48 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 12:49 476989 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-001A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-1-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 12:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/20/09 0:00 |
| **ColumnID:** | | **%Moisture:** 45.7 | **BatchNo:** 10163/R18570 |
| **Revision:** | 10/21/09 11:34 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | | 0.92 | 0.33 | mg/Kg-dry | 1 | 10/20/09 11:40 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 476939 **Project Supervisor:** Anthony Crescenzi

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MW 12/1/09

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# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-002A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-1-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 12:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/20/09 0:00 |
| **ColumnID:** | | **%Moisture:** 50.5 | **BatchNo:** 10163/R18570 |
| **Revision:** | 10/21/09 11:34 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | | 1.0 | 0.36 | mg/Kg-dry | 1 | 10/20/09 11:40 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 476942 **Project Supervisor:** Anthony Crescenzi

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NW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-003A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-1-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 12:40 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/20/09 0:00 |
| **ColumnID:** | | **%Moisture:** 50.6 | **BatchNo:** 10163/R18570 |
| **Revision:** | 10/21/09 11:34 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | | 1.0 | 0.36 | mg/Kg-dry | 1 | 10/20/09 11:40 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 476943 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

5

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-005A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/20/09 0:00 |
| **ColumnID:** | | **%Moisture:** 72.9 | **BatchNo:** 10163/R18570 |
| **Revision:** | 10/21/09 11:34 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | | 1.8 | 0.66 | mg/Kg-dry | 1 | 10/20/09 11:40 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 476944 **Project Supervisor:** Anthony Crescenzi



AW 12/1/09

6

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-006A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/20/09 0:00 |
| **ColumnID:** | | **%Moisture:** 51.9 | **BatchNo:** 10163/R18570 |
| **Revision:** | 10/21/09 11:34 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | | 1.0 | 0.37 | mg/Kg-dry | 1 | 10/20/09 11:40 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 476945 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

7

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-007A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 54.4 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 1.1 | 0.39 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477691 **Project Supervisor:** Anthony Crescenzi

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MW 12/1/09

8

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-008A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 69.1 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | U J | 1.6 | 0.58 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477692 **Project Supervisor:** Anthony Crescenzi

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MW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-009A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:50 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 51.9 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ~~ND~~ | UJ | 1.0 | 0.37 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477693 **Project Supervisor:** Anthony Crescenzi



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10

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-010A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 49.1 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | | ~~ND~~ UJ | 0.98 | 0.35 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477694 **Project Supervisor:** Anthony Crescenzi

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(LW) 12/1/09

12

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-012A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-4-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:10 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 22.1 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | | ~~ND~~ UJ | 0.64 | 0.23 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477695 **Project Supervisor:** Anthony Crescenzi



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13

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-013A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-4-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:15 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 35.2 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.77 | 0.28 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477696 **Project Supervisor:** Anthony Crescenzi



RW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-014A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-4-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 28.1 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.70 | 0.25 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477699 **Project Supervisor:** Anthony Crescenzi



LW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-015A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 37.8 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | U J | 0.80 | 0.29 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477700 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

16

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-016A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 42.6 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.87 | 0.31 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477703 **Project Supervisor:** Anthony Crescenzi



LW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-017A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 53.5 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | | ~~ND~~ UJ | 1.1 | 0.39 | mg/Kg-dry | 1 | 10/22/09 14:30 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477704 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

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# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-018A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 74.2 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 1.9 | 0.70 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477705 **Project Supervisor:** Anthony Crescenzi



NW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-019A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:50 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 66.2 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 1.5 | 0.53 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477706 **Project Supervisor:** Anthony Crescenzi



LW 12.1.09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-020A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 57.9 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ~~ND~~ | UJ | 1.2 | 0.43 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477707 **Project Supervisor:** Anthony Crescenzi



LW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-021A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 76.2 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | U J | 2.1 | 0.76 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477708 **Project Supervisor:** Anthony Crescenzi



WW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-022A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 73.9 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | 2.9 | J | 1.9 | 0.69 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477709 **Project Supervisor:** Anthony Crescenzi

AW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-023A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 59.5 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 1.2 | 0.44 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477710 **Project Supervisor:** Anthony Crescenzi



gcw 12/1/09

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-025A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 50.1 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 1.0 | 0.36 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477720 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-026A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:00 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 39.5 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.83 | 0.30 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477711 **Project Supervisor:** Anthony Crescenzi



WW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-027A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:05 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 39.1 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | U J | 0.82 | 0.30 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477712 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-028A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 68.7 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 1.6 | 0.58 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477715 **Project Supervisor:** Anthony Crescenzi



NW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-029A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/21/09 0:00 |
| **ColumnID:** | | **%Moisture:** 54.6 | **BatchNo:** 10174/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | U J | 1.1 | 0.40 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477716 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-030A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 52.3 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | 9.0 | J | 1.0 | 0.38 | mg/Kg-dry | 1 | 10/22/09 14:30 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477723 **Project Supervisor:** Anthony Crescenzi



CWS 12/1/09

# Life Science Laboratories, Inc.

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-031A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-10-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:00 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 44.7 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.90 | 0.33 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477724 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-032A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-10-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:05 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 13.1 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | | ~~ND~~ UJ | 0.58 | 0.21 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477727 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

33

# Life Science Laboratories, Inc.

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-033A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-11-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 15.7 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ~~ND~~ | UJ | 0.59 | 0.21 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477728 **Project Supervisor:** Anthony Crescenzi



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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-034A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-11-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 44.7 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.90 | 0.33 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477729 **Project Supervisor:** Anthony Crescenzi

150

LW 12/1/09

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-035A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-12-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:40 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 34.0 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.76 | 0.27 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477730 **Project Supervisor:** Anthony Crescenzi

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LW 12/1/09

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-036A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-12-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 23.5 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.65 | 0.24 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477731 **Project Supervisor:** Anthony Crescenzi



MeJ 12/1/09

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# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-037A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-13-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:00 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 18.4 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | | ~~ND~~ UJ | 0.61 | 0.22 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477732 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-038A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-13-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:05 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 18.4 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | U J | 0.61 | 0.22 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477733 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-039A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-14-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:15 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 21.5 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.64 | 0.23 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477734 **Project Supervisor:** Anthony Crescenzi



LW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-040A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-14-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 13.9 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.58 | 0.21 | mg/Kg-dry | 1 | 10/22/09 14:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477735 **Project Supervisor:** Anthony Crescenzi



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# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-042A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-15-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 22.5 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.65 | 0.23 | mg/Kg-dry | 1 | 10/22/09 14:31 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477736 **Project Supervisor:** Anthony Crescenzi



LW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-043A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-15-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 35.3 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | UJ | 0.77 | 0.28 | mg/Kg-dry | 1 | 10/22/09 14:31 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477739 **Project Supervisor:** Anthony Crescenzi

RW 12/1/09

45

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-045A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-A (Dup)*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 73.1 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | U J | 1.9 | 0.67 | mg/Kg-dry | 1 | 10/22/09 14:31 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477740 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

46

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-046A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-A (Dup)*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 68.4 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | 16 | UJ | 1.6 | 0.57 | mg/Kg-dry | 1 | 10/22/09 14:31 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477741 **Project Supervisor:** Anthony Crescenzi



LW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-047A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-A (Dup)*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | AA3 | **Sample Size:** 1 g | **PrepDate:** 10/22/09 0:00 |
| **ColumnID:** | | **%Moisture:** 74.1 | **BatchNo:** 10181/R18595 |
| **Revision:** | 10/27/09 13:56 | **TestCode:** CN9012S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **CYANIDE, TOTAL** | | | | | **SW9012A** | | **(SW9012)** |
| Cyanide, Total | ND | U J | 1.9 | 0.69 | mg/Kg-dry | 1 | 10/22/09 14:31 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/27/09 14:35 477742 **Project Supervisor:** Anthony Crescenzi



WS 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-001A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-1-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 12:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 45.7 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.040 | J | 0.18 | 0.015 | mg/Kg-dry | 1 | 10/19/09 14:54 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476639 **Project Supervisor:** Anthony Crescenzi

LEW 12/1/09

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# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-002A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-1-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 12:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 50.5 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.036 | J | 0.20 | 0.017 | mg/Kg-dry | 1 | 10/19/09 15:00 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476642 **Project Supervisor:** Anthony Crescenzi

NW 12/1/09

3

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-003A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-1-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 12:40 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 50.6 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.049 | J | 0.20 | 0.017 | mg/Kg-dry | 1 | 10/19/09 15:02 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476643 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

5

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-005A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 72.9 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 2.6 | | 0.37 | 0.031 | mg/Kg-dry | 1 | 10/19/09 15:05 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476644 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

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# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-006A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 51.9 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.12 | J | 0.21 | 0.017 | mg/Kg-dry | 1 | 10/19/09 15:07 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476645 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

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# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-007A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 54.4 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.039 | J | 0.22 | 0.018 | mg/Kg-dry | 1 | 10/19/09 15:09 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476646 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-008A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 69.1 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 1.5 | | 0.32 | 0.027 | mg/Kg-dry | 1 | 10/19/09 15:11 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476647 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

9

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-009A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:50 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 51.9 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 16 | E | 0.21 | 0.017 | mg/Kg-dry | 1 | 10/19/09 15:18 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476650 **Project Supervisor:** Anthony Crescenzi

hw 12/1/09

9DL

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-009ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:50 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 51.9 | **BatchNo:** 10155/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 56 | | 4.2 | 0.35 | mg/Kg-dry | 20 | 10/20/09 11:10 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477171 **Project Supervisor:** Anthony Crescenzi

JW 12/1/09

10

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-010A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 49.1 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 2.3 | | 0.20 | 0.016 | mg/Kg-dry | 1 | 10/19/09 15:20 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476651 **Project Supervisor:** Anthony Crescenzi

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MW 12/1/09

12

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-012A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-4-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:10 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 22.1 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.066 | J | 0.13 | 0.011 | mg/Kg-dry | 1 | 10/19/09 15:22 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476652 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-013A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-4-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:15 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 35.2 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.016 | J | 0.15 | 0.013 | mg/Kg-dry | 1 | 10/19/09 15:24 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476653 **Project Supervisor:** Anthony Crescenzi

LW 12.1.09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-014A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-4-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 28.1 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | ND | | 0.14 | 0.012 | mg/Kg-dry | 1 | 10/19/09 15:31 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476656 **Project Supervisor:** Anthony Crescenzi

tcw 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-015A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | *WC-5-SED-A* |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 37.8 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 1.6 | | 0.16 | 0.013 | mg/Kg-dry | 1 | 10/19/09 15:33 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476657 **Project Supervisor:** Anthony Crescenzi



lw 12/1/09

16

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-016A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 42.6 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 5.3 | E | 0.17 | 0.015 | mg/Kg-dry | 1 | 10/19/09 15:35 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476658 **Project Supervisor:** Anthony Crescenzi

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NW 12/1/09

16DL

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-016ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 42.6 | **BatchNo:** 10155/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 6.8 | | 1.7 | 0.15 | mg/Kg-dry | 10 | 10/20/09 11:12 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477172 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-017A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 53.5 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 16 | E | 0.22 | 0.018 | mg/Kg-dry | 1 | 10/19/09 15:37 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476659 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

1ADL

# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-017ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-5-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 53.5 | **BatchNo:** 10155/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 47 | | 4.3 | 0.36 | mg/Kg-dry | 20 | 10/20/09 11:15 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477173 **Project Supervisor:** Anthony Crescenzi

AW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-018A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 74.2 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 4.8 | | 0.39 | 0.032 | mg/Kg-dry | 1 | 10/19/09 15:44 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476662 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-019A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:50 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 66.2 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 13 | E | 0.30 | 0.025 | mg/Kg-dry | 1 | 10/19/09 15:46 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476663 **Project Supervisor:** Anthony Crescenzi

NW 12/1/09

19DL

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-019ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:50 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 66.2 | **BatchNo:** 10155/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 20 | | 3.0 | 0.25 | mg/Kg-dry | 10 | 10/20/09 11:17 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477174 **Project Supervisor:** Anthony Crescenzi

88

NW 12/1/09

20

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-020A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 57.9 | **BatchNo:** 10155/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 9.1 | E | 0.24 | 0.020 | mg/Kg-dry | 1 | 10/19/09 15:48 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476664 **Project Supervisor:** Anthony Crescenzi

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HW 12/1/09

20DL

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-020ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | *WC-6-SED-C* |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 57.9 | **BatchNo:** 10155/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 13 | | 2.4 | 0.20 | mg/Kg-dry | 10 | 10/20/09 11:19 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477175 **Project Supervisor:** Anthony Crescenzi

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-021A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 76.2 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 6.9 | | 0.42 | 0.035 | mg/Kg-dry | 1 | 10/19/09 16:17 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476667 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-022A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 73.9 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 25 | E | 0.38 | 0.032 | mg/Kg-dry | 1 | 10/19/09 16:19 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476668 **Project Supervisor:** Anthony Crescenzi

RW 12/1/09

22DI

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-022ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 73.9 | **BatchNo:** 10156/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 52 | | 7.7 | 0.64 | mg/Kg-dry | 20 | 10/20/09 11:30 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477180 **Project Supervisor:** Anthony Crescenzi

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-023A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-7-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 59.5 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.15 | J | 0.25 | 0.021 | mg/Kg-dry | 1 | 10/19/09 16:21 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476669 **Project Supervisor:** Anthony Crescenzi

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# Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-025A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 50.1 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 8.4 | E | 0.20 | 0.017 | mg/Kg-dry | 1 | 10/19/09 16:23 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476670 **Project Supervisor:** Anthony Crescenzi

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25DL

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-025ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 15:55 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 50.1 | **BatchNo:** 10156/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 12 | | 2.0 | 0.17 | mg/Kg-dry | 10 | 10/20/09 11:32 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477181 **Project Supervisor:** Anthony Crescenzi

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-026A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:00 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 39.5 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 1.9 | | 0.17 | 0.014 | mg/Kg-dry | 1 | 10/19/09 16:34 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476675 **Project Supervisor:** Anthony Crescenzi

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-027A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-8-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:05 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 39.1 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.11 | J | 0.16 | 0.014 | mg/Kg-dry | 1 | 10/19/09 16:36 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476676 **Project Supervisor:** Anthony Crescenzi

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-028A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 68.7 | **BatchNo:** 10156/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 2.5 | | 0.32 | 0.027 | mg/Kg-dry | 1 | 10/20/09 11:45 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477187 **Project Supervisor:** Anthony Crescenzi

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-029A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 54.6 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 5.3 | E | 0.22 | 0.018 | mg/Kg-dry | 1 | 10/19/09 16:40 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476678 **Project Supervisor:** Anthony Crescenzi

AW 12/1/09

29DL

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-029ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 54.6 | **BatchNo:** 10156/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 6.2 | | 2.2 | 0.18 | mg/Kg-dry | 10 | 10/20/09 11:38 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477184 **Project Supervisor:** Anthony Crescenzi



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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-030A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 52.3 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 17 | E | 0.21 | 0.018 | mg/Kg-dry | 1 | 10/19/09 16:43 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476679 **Project Supervisor:** Anthony Crescenzi

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30DL

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-030ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-9-SED-C*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 16:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 52.3 | **BatchNo:** 10156/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 81 | | 10 | 0.88 | mg/Kg-dry | 50 | 10/20/09 12:19 |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477192 **Project Supervisor:** Anthony Crescenzi

103

AW 12/1/09

# Life Science Laboratories, Inc.

# Analytical Results

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East Syracuse, NY 13057 (315) 437-0200

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-031A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-10-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:00 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 44.7 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.13 | J | 0.18 | 0.015 | mg/Kg-dry | 1 | 10/19/09 16:45 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476680 **Project Supervisor:** Anthony Crescenzi

104

HW 12/1/09

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-032A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-10-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:05 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 13.1 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | ND | | 0.12 | 0.0096 | mg/Kg-dry | 1 | 10/19/09 16:47 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476681 **Project Supervisor:** Anthony Crescenzi

105

MW 12/1/09

**Life Science Laboratories, Inc.**
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East Syracuse, NY 13057 (315) 437-0200

# Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-033A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-11-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 15.7 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.50 | | 0.12 | 0.0099 | mg/Kg-dry | 1 | 10/19/09 16:49 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476682 **Project Supervisor:** Anthony Crescenzi

LW 12/1/09

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-034A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-11-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 44.7 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 2.6 | | 0.18 | 0.015 | mg/Kg-dry | 1 | 10/19/09 16:51 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476683 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

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East Syracuse, NY 13057 (315) 437-0200

# Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-035A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-12-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:40 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 34.0 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.018 | J | 0.15 | 0.013 | mg/Kg-dry | 1 | 10/19/09 16:58 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476686 **Project Supervisor:** Anthony Crescenzi

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-036A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-12-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 17:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 23.5 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.011 | J | 0.13 | 0.011 | mg/Kg-dry | 1 | 10/19/09 17:00 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476687 **Project Supervisor:** Anthony Crescenzi



RW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-037A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-13-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:00 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 18.4 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.057 | J | 0.12 | 0.010 | mg/Kg-dry | 1 | 10/19/09 17:02 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476688 **Project Supervisor:** Anthony Crescenzi

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-038A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-13-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:05 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 18.4 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | ND | | 0.12 | 0.010 | mg/Kg-dry | 1 | 10/19/09 17:04 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476689 **Project Supervisor:** Anthony Crescenzi

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LW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-039A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-14-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:15 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 21.5 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.22 | | 0.13 | 0.011 | mg/Kg-dry | 1 | 10/19/09 17:06 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476690 **Project Supervisor:** Anthony Crescenzi

MW 12/1/09

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East Syracuse, NY 13057 (315) 437-0200

# Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-040A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-14-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:20 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 13.9 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.012 | J | 0.12 | 0.0097 | mg/Kg-dry | 1 | 10/19/09 17:08 |

| **Qualifiers:** | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476691 **Project Supervisor:** Anthony Crescenzi

JW 12/1/09

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# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-042A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-15-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 22.5 | **BatchNo:** 10156/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 2.3 | E | 0.13 | 0.011 | mg/Kg-dry | 1 | 10/19/09 17:11 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476692 **Project Supervisor:** Anthony Crescenzi

114

NW 12/1/09

4201

# Life Science Laboratories, Inc.

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East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-042ADL** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-15-SED-A*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:30 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 22.5 | **BatchNo:** 10156/R18575 |
| **Revision:** | 10/21/09 10:00 | **TestCode:** HG7471S | **FileID:** 1-DL- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 2.4 | | 0.26 | 0.022 | mg/Kg-dry | 2 | 10/20/09 11:43 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 477186 **Project Supervisor:** Anthony Crescenzi

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AW 12/1/09

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East Syracuse, NY 13057 (315) 437-0200

# Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-043A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-15-SED-B*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 18:35 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 35.3 | **BatchNo:** 10157/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 0.68 | | 0.15 | 0.013 | mg/Kg-dry | 1 | 10/19/09 13:53 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476617 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

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## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-045A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-2-SED-A (Dup)*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:25 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 73.1 | **BatchNo:** 10157/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 3.0 | | 0.37 | 0.031 | mg/Kg-dry | 1 | 10/19/09 13:55 |

| | | | | |
|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476618 **Project Supervisor:** Anthony Crescenzi

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# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

## Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-046A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-3-SED-A (Dup)*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 13:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 68.4 | **BatchNo:** 10157/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 1.4 | | 0.32 | 0.026 | mg/Kg-dry | 1 | 10/19/09 13:57 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476619 **Project Supervisor:** Anthony Crescenzi

118

MW 12.1.09

**Life Science Laboratories, Inc.**
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# Analytical Results

StateCertNo: 10155

| | | | |
|---|---|---|---|
| **CLIENT:** | EA Engineering Science and Technology | **Lab ID:** | **0910044-047A** |
| **Project:** | DEC - Wappinger Creek | **Client Sample ID:** | ***WC-6-SED-A (Dup)*** |
| **W Order:** | 0910044 | **Collection Date:** | 10/12/09 14:45 |
| **Matrix:** | SEDIMENT | **Date Received:** | 10/13/09 10:07 |
| **Inst. ID:** | FIMS 100 | **Sample Size:** 0.3 g | **PrepDate:** 10/19/09 11:00 |
| **ColumnID:** | | **%Moisture:** 74.1 | **BatchNo:** 10157/R18567 |
| **Revision:** | 10/21/09 10:08 | **TestCode:** HG7471S | **FileID:** 1-SAMP- |
| **Col Type:** | | | |

| Analyte | Result | Qual | PQL | MDL | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **MERCURY** | | | | | **SW7471A** | | **(SW7471A)** |
| Mercury | 5.4 | | 0.39 | 0.032 | mg/Kg-dry | 1 | 10/19/09 13:59 |

| Qualifiers: | | | | |
|---|---|---|---|---|
| | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Value exceeds the instrument calibration range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below the PQL | ND | Not Detected at the Practical Quantitation Limit (PQL) |
| | P | Prim./Conf. column %D or RPD exceeds limit | S | Spike Recovery outside accepted recovery limits |

**Print Date:** 10/28/09 10:09 476620 **Project Supervisor:** Anthony Crescenzi



MW 12/1/09

**Work Order:** 0944003
**Project ID:** EAS-NE0901
**PM:** Amanda Fawley

BROOKS RAND LABS
MEANINGFUL METALS DATA

**Client PM:** Paul Muessig
**Client PO:** 7262.1

# Sample Results

| Sample | Analyte | Report Matrix | Fraction | Result | Qualifier | MDL | MRL | Unit | Batch | Sequence |
|---|---|---|---|---|---|---|---|---|---|---|
| ***WC-6-SED-A*** | | | | | | | | | | |
| 0944003-01 | %TS | Sediment | N/A | 28.68 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-01 | MeHg | Sediment | N/A | 1.19 | | 0.029 | 0.092 | ng/g dry | B091546 | 0900938 |
| ***WC-6-SED-B*** | | | | | | | | | | |
| 0944003-02 | %TS | Sediment | N/A | 36.97 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-02 | MeHg | Sediment | N/A | 2.31 | | 0.022 | 0.070 | ng/g dry | B091546 | 0900938 |
| ***WC-6-SED-C*** | | | | | | | | | | |
| 0944003-03 | %TS | Sediment | N/A | 42.52 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-03 | MeHg | Sediment | N/A | 0.333 | | 0.019 | 0.060 | ng/g dry | B091546 | 0900938 |
| ***WC-7-SED-A*** | | | | | | | | | | |
| 0944003-04 | %TS | Sediment | N/A | 28.36 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-04 | MeHg | Sediment | N/A | 1.55 | | 0.029 | 0.091 | ng/g dry | B091546 | 0900938 |
| ***WC-7-SED-B*** | | | | | | | | | | |
| 0944003-05 | %TS | Sediment | N/A | 23.02 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-05 | MeHg | Sediment | N/A | 1.29 | | 0.037 | 0.114 | ng/g dry | B091546 | 0900938 |
| ***WC-8-SED-A*** | | | | | | | | | | |
| 0944003-06 | %TS | Sediment | N/A | 54.26 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-06 | MeHg | Sediment | N/A | 2.25 | | 0.015 | 0.046 | ng/g dry | B091546 | 0900938 |
| ***WC-8-SED-C*** | | | | | | | | | | |
| 0944003-07 | %TS | Sediment | N/A | 68.74 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-07 | MeHg | Sediment | N/A | 0.058 | | 0.012 | 0.038 | ng/g dry | B091546 | 0900938 |
| ***WC-9-SED-A*** | | | | | | | | | | |
| 0944003-08 | %TS | Sediment | N/A | 34.11 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-08 | MeHg | Sediment | N/A | 0.471 | | 0.025 | 0.078 | ng/g dry | B091546 | 0900938 |
| ***WC-9-SED-B*** | | | | | | | | | | |
| 0944003-09 | %TS | Sediment | N/A | 45.32 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-09 | MeHg | Sediment | N/A | 0.719 | | 0.018 | 0.056 | ng/g dry | B091546 | 0900938 |

NW 12/1/09


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**Work Order:** 0944003
**Project ID:** EAS-NE0901
**PM:** Amanda Fawley

BROOKS RAND LABS
MEANINGFUL METALS DATA

**Client PM:** Paul Muessig
**Client PO:** 7262.1

# Sample Results

| Sample | Analyte | Report Matrix | Fraction | Result | Qualifier | MDL | MRL | Unit | Batch | Sequence |
|---|---|---|---|---|---|---|---|---|---|---|
| ***WC-9-SED-C*** | | | | | | | | | | |
| 0944003-10 | %TS | Sediment | N/A | 52.02 | | 0.10 | 0.33 | % | B091547 | N/A |
| 0944003-10 | MeHg | Sediment | N/A | 1.63 | | 0.016 | 0.049 | ng/g dry | B091546 | 0900938 |

nw
12/1/09



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# REFERENCE 7

FINAL REPORT

# Three Star Anodizing Site
# Wappingers Falls, New York
# Remedial Investigation
# NYSDEC Site 314058

New York State Department of
Environmental Conservation
Albany, New York

October 2007

# FINAL REPORT

Three Star Anodizing Site
Wappingers Falls, New York
Site Remedial Investigation
NYSDEC Site 314058

***New York State***
***Department of Environmental Conservation***
***Albany, New York***

Douglas M. Crawford, P.E.
Vice President

October 2007

O'BRIEN & GERE ENGINEERS, INC.

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A. Lagoon grain size and bulk density analysis

# Executive Summary

A Remedial Investigation (RI) of the Three Star Anodizing Site (Three Star Site, Site #314058) was completed by O'Brien & Gere Engineers, Inc. (O'Brien & Gere) on behalf of the New York State Department of Environmental Conservation (NYSDEC). The "Site RI/FS" identified historic operations on the Three Star Site that is located on the south portion of the Market Street Industrial Park on McKinley Street in the Village of Wappingers Falls. During the original site development activities approximately 9 to 11 ft of material that included coal cinders were used to fill the Three Star Site. The area occupied by the Market Street Industrial Park has been the site of industrial/commercial operations since the 1830s.

The Three Star Site was originally developed as a cloth dye manufacturing facility called the Dutchess Bleachery. During the operation of the Dutchess Bleachery, the facility also manufactured ammunition, leather products, and felt hats. Other activities included plastic mold injection. A portion of the Three Star Site was used for the operation of a manufactured gas plant (MGP) over the period of the 1830s to approximately 1913. The Three Star Anodizing Company also operated a metal plating facility at the Three Star Site from the late 1950s to 1995. During operation of the Dutchess Bleachery, hydropower was used at the facility. An inactive raceway borders the property to the south (former raceway) and drains from east (upper raceway) to west (lower raceway) toward a former industrial lagoon (Three Star lagoon). The Three Star lagoon then drains north toward Wappingers Creek, bordering the Three Star Site to the north and west.

Current uses of the Three Star Site include a warehouse and an area used for storage of tractor-trailers. A fire in May 2004 destroyed three of the buildings at the Three Star Site. The area affected by the fire contains ruins of three buildings and debris associated with the fire. Twenty-three former metal plating vats that were contained in one of the buildings are exposed to the environment. Five buildings presently occupy the Three Star Site.

For the *Site RI*, the Three Star Site was conceptually subdivided into two areas, the *Main Site* and *MGP Site* which are separated by the Three Star lagoon. The Main Site is located on the east portion of the Three Star Site and contains buildings formerly associated with industrial activities and includes the Three Star lagoon. The MGP Site is located on the west portion of the Three Star Site and contains the ruins of gas holders that were associated with the MGP operations and undeveloped areas that include miscellaneous debris and fill. Wappingers Creek is located adjacent to the Three Star Site to the north and west. The potential impacts of the Three Star Site to Wappingers Creek were evaluated separately from the Three Star Site in the *Creek RI Report* (O'Brien & Gere 2007b). Contaminant sources, potential migration pathways, potential exposure pathways identified on the Three Star Site are summarized below.

### Contaminant Sources and Extent

The results of the Site RI indicated that concentrations of VOCs, PAHs, and inorganics detected in site media do not suggest wide-spread contamination that would potentially impact the surrounding community. However, the Site RI identified five focused source areas associated with specific features of the Main Site and consisting of the lower raceway, the Three Star lagoon, media in the vicinity of a drywell and former drum storage area, and exposed soil along the creek bank. A Supplemental Remedial Investigation (SRI) of the vats on the Main Site also identified the exposed former metal plating vats (the vats) as a newly exposed potential source. The results of the SRI are

reported separately in the *SRI Report* (O'Brien & Gere 2007c). These five primary sources identified at the Three Star Site are discussed below. Four other comparatively minor sources that were identified are also summarized subsequently.

- The lower raceway is a source of mercury, naphthalene, and a wide range of other inorganics. The levels of mercury, naphthalene, and cyanide in ground water distinguish this source from other sources detected on the Three Star Site. Surface soil from this area also contains a wide range of inorganics at elevated levels including the highest concentrations of mercury and cyanide detected at the Three Star Site. Elevated concentrations of inorganics detected in surface and subsurface soil, and shallow and deep ground water suggest that this structure is a pathway for potential off-site migration. In addition, the surface soil concentrations may represent an exposure pathway for small animals.

- The Three Star lagoon has been impacted by an unknown chlorobenzene (CB) source. The presence of trichloroethene (TCE) in the surface water of the Three Star lagoon and the sediment at the confluence of the Three Star lagoon with Wappingers Creek provides evidence that off-site migration of chlorinated VOCs from site source(s) may be occurring. The sediment in the Three Star lagoon contains elevated levels of VOCs, PAHs, and metals.

- The dry well and former drum storage area located south of the Axton-Cross Building contains a source of chlorinated VOCs (tetrachloroethene (PCE), TCE, dichlorbenzene (DCB)) and xylene to ground water. The highest levels of VOCs detected in soil and ground water from the Three Star Site are associated with this area. The VOC plume likely extends under the Axton-Cross Building and may be a source of VOCs to indoor air in that building.

- The SRI (O'Brien & Gere 2007c) identified liquid and sludge in the vats as potential sources of zinc, chromium, copper, and other constituents to subsurface media. The detection of elevated levels of metals in ground water downgradient of the vats suggests that the vats have leaked. However, the elevated metals were generally associated with turbidity and particulate matter which may limit their potential for migration. Although metals may be concentrated in soil under the vats, soil under the vats was not sampled due to complicated access. Phthalates were also associated with vat liquids and sludge. Other inorganics, total phenol, and acetone were detected in vat liquids at lower concentrations relative to the primary constituents cited above (O'Brien & Gere 2007c).

- The area of the MGP Site bordering the creek contains benzene, PAHs, and separate phase globules that suggest the presence of MGP wastes. In addition, the detection inorganics and chlorinated VOCs in that area suggest that the MGP wastes may be mixed with industrial residues.

The four other comparatively minor sources identified at the Three Star Site are summarized below.

- Fill material is a source of PAHs and inorganics, mostly at levels within one order of magnitude of background. The fill material is widespread and extends to approximately 10 ft below grade. Soil samples collected at the MGP Site generally contained higher levels of PAHs compared to concentrations detected at the Main Site suggesting contribution of byproducts from the MGP.

- TCA was detected in ground water in the vicinity of Buildings 15 and 16. The source of the TCA, however, was not identified.

- As would be expected, the surface soil at the MGP Site contained PAH levels that distinguish it from other portions of the Three Star Site. In addition, the surface soil at the MGP Site also contains inorganics.

- The soil adjacent to the west side of the Axton-Cross Building contained elevated levels of nickel in surface soil and lead in subsurface soil relative to other areas of the Three Star Site. PCE was also detected in shallow soil above levels detected elsewhere on the Three Star Site. Drain holes on that side of the Axton-Cross Building are a potential contaminant pathway from the interior of the building.

Other sporadic detections of constituents in soil at levels above screening values for commercial uses were also detected at the Three Star Site. The detection of PCBs and pesticides in soil and pesticides in lagoon sediment did not identify a source of PCBs or pesticides specific to the Three Star Site.

**Potential Migration Pathways**

Sources of VOCs were identified in shallow ground water beneath the Main Site, as discussed above. There are several areas where chemical signatures in the ground water suggest that sources are present. However, the concentrations detected in the soil did not identify multiple source areas. Inorganics were also detected in shallow ground water within the former raceway and deep ground water under the Main Site. Although the source of these constituents may be concentrated in the lower raceway or another unidentified source, the mechanism for vertical migration of inorganics to deep ground water has not been established. Furthermore, transport of inorganics to deep ground water may not be currently active.

The presence of elevated concentrations of inorganics in deep ground water adjacent to the creek suggests that the creek channel may provide a migration pathway with the potential for ground water to migrate downgradient within the sediment of Wappingers Creek. The volume of ground water seepage to the creek may be small in comparison to creek and river flows reducing the ability to observe these interactions.

Erosion of site soil could occur along the unprotected banks that could contribute to the migration of PAHs and inorganics to the creek. The stone block retaining wall located upstream of the west bridge located on the Three Star Site protects that portion of the Three Star Site from scouring along the creek bank. Adjacent to the Axton-Cross Building and the MGP Site, the exposed soil may be subject to erosion.

**Potential Exposure Pathways**

Future uses of the site are expected to be consistent with its current use, which is commercial. Current potential human exposure pathways are primarily associated with the inhalation of indoor air by workers inside the Axton-Cross Building due to the VOC plume located in the vicinity of it and indoor air of other buildings on the Three Star Site. Additional pathways include potential human contact with surface soil and fugitive dust at the Three Star Site, and surface water and sediment of the Three Star lagoon. The size of the exposed soil area and uses of the Three Star Site limit the potential contact with surface soil on the Main Site. Surface water and sediment of the Three Star lagoon are potential exposure routes for trespassers, site workers, or recreational visitors. Exposure to subsurface materials is a potential pathway for construction workers. Due to the availability of a public water supply, the village prohibits the use of ground water from private wells for potable

water. Therefore, contact to ground water will be limited. Other potential uses of the Three Star Site are recreational uses primarily associated with the proximity to the creek, and future residential uses, if they were permitted. Exposure to surface soil is a pathway for both of these potential receptors. Potential exposures for residences would also include breathing indoor air.

The Three Star Site contains limited ecological habitat. Most of the Main Site is occupied by buildings, ruins of buildings, and paved parking areas that represent poor quality ecological habitat. However, wildlife that may be present on the Main Site may be exposed to metals, PAHs, and VOCs that were detected in surface soil above ecological screening values. The Three Star lagoon provides limited aquatic habitat on the Three Star Site. Aquatic receptors that visit the Three Star lagoon may be exposed to metals, PAHs, and chlorobenzene concentrations that were detected in surface water or sediment above ecological screening values. The MGP Site consists primarily of vegetated areas with grasses, trees, and shrubs that may be suitable habitat for wildlife. Wildlife that may be present on the MGP Site may be exposed to PAHs and metals concentrations that were detected above ecological screening values in surface soil.

# 1. Introduction

## 1.1. Site Background

On behalf of the New York State Department of Environmental Conservation (NYSDEC), O'Brien & Gere Engineers, Inc. performed a Remedial Investigation (RI) to investigate and evaluate potential environmental contamination of the Three Star Anodizing Site (Three Star Site) located in Wappingers Falls, New York (Figure 1-1). The Three Star Site is listed as a Class 2 site on NYSDEC's Registry of Inactive Hazardous Waste Disposal Sites (Site #314058). This report presents the results of the RI. The Feasibility Study (FS) is presented as a separate report (O'Brien & Gere 2007a).

The Three Star Site consists of an 8.5-acre industrial facility on the south bank of the upper tidal reach of Wappingers Creek (Figure 1-2). Several buildings, paved parking areas, and access roadways are present on the site. The Three Star Site is located on the 100-year flood plain along an oxbow of the tidal creek. The tidal creek discharges to the Hudson River approximately 1.5 miles downstream, and it is subjected to tidal influences of the river (NYSDEC 2000). A RI of Wappingers Creek (Creek RI) associated with the RI of the Three Star Site was reported separately (O'Brien & Gere 2007b).

During storm events, runoff from the Three Star Site to the tidal creek occurs via a former raceway that drains from east (upper raceway) to west (lower raceway) toward a lagoon on the southeast portion of the site (Three Star lagoon). The Three Star lagoon then drains to the tidal creek (Figures 1-2 and 1-3). In the past, industrial discharges from the facility to both the former raceway and the tidal creek reportedly occurred. The Three Star lagoon also formerly received stormwater runoff from the village via a pipe. However, in 2005 the pipe was observed to primarily discharge to ground surface along the southeast portion of the site through a break in the pipe. The general direction of drainage from this portion of the Three Star Site is toward the west. Surface drainage could eventually make its way to the former raceway and Three Star lagoon.

Historical information for the site was obtained from a number of sources:

- Aerial photographs of the site were obtained from the Dutchess County Soil and Water Conservation District for the years 1935, 1946, 1967, 1980, and 1995 (DCSWCD 2000).
- A historic account of activities at the site was provided in *The Birth & Growth of an Old Village, Wappinger Falls 1707-1977* (Popper 1991).
- Memoranda obtained from files of Dutchess County Department of Health provided maps that identified tenants of the site in 1967 and 1971. The memoranda also provided a brief account of activities at the site at that time.
- Sanborn Maps of the site also provided some information on past uses of the site.
- A previous Phase I investigation completed in the 1980s provided screening level data of the site (EA 1986).

The RI/FS Work Plan for the site provided a review of these data sources (O'Brien & Gere 2001).

The Three Star Site has been the location of industrial activities for over 150 years. Primary past uses of the site included dye operations, manufactured gas plant (MGP) operations, and metal plating (EA 1986; O'Brien & Gere 2001). A number of other smaller scale industrial activities also took place at the site. Dye operations, known as the Dutchess Bleachery, operated at the site between 1832 and 1955 (Section 1.1.1). The Dutchess Bleachery and Wappinger Water, Gas, and Electric Companies operated a coal fired MGP that included activities on the west portion of the subject site from the late 1800s to approximately 1913 (Section 1.1.2). Three Star and later Watson Metals Products Corporation operated a metal plating facility at the site from 1958 to approximately 1995 (Section 1.1.3). This report hereafter refers to Three Star as consisting of both of these operations. Information pertaining to the other commercial operations, including those conducted since the Three Star operations closed, is presented separately (Section 1.1.4).

According to information obtained from Dutchess County Department of Health memoranda (DCDH 1967, 1971), several buildings at the Three Star Site had discharges that led to the tidal creek in the past. Site buildings at the Three Star Site that were tested by Dutchess County Department of Health had floor drains that discharged directly to the tidal creek. Most of the buildings had sanitary facilities that also discharged directly to the tidal creek. In 1971, a survey conducted by Dutchess County Department of Health indicated that the Axton-Cross (bulk chemical sales) building at the site had floor drains that discharged to a lagoon adjacent to the building (DCDH 1971).

Rinse water from plating tanks in the Three Star facility was reportedly discharged to the back of the plant and subsequently overflowed to the former raceway and lagoon. Paint stripping caustics were discharged to the floor drains of the plant and to the ground behind the facility. In that area, the ground slopes toward the southeast, in the direction of the former raceway and Three Star lagoon. Page Print Systems, which occupied one of the buildings at the east end of the site (EA 1986), also reportedly discharged via a pipe, rinse water from photographic development sinks to the ground adjacent to the building (DCDH 1971). From the account of building design and industrial activities in the 1970s, it is assumed that previous operations at the site also discharged industrial wastes to the ground, former raceway/Three Star lagoon, and/or the tidal creek. The locations of the pipes are not known.

In the immediate area around the Three Star Site, Olah Associates occupied a building on the north side of the tidal creek and reportedly performed plating and stripping operations and discharged rinse water from plating tanks directly to the tidal creek. In 1967, Hanover Print Works was also located on the north side of the tidal creek and reportedly discharged approximately three quarts of paint per day to a lagoon (north lagoon) located next to the building (DCDH 1967).

### 1.1.1. Dutchess Bleachery, 1832 to 1958

Dutchess Print Works, also known as the Dutchess Bleachery, operated under several ownerships. The Dutchess Bleachery was the first calico print works in America. The plant was originally located on the north bank of the tidal creek and later occupied land that was reportedly filled in on the south side of the tidal creek. By the late 1800s, buildings on the north side of the tidal creek were utilized for manufacturing acids and chemicals associated with the dye operations and the remainder of the operations were performed in buildings located on the south bank (Popper 1991).

Operations consisted of dyeing and finishing of rough cotton cloth from mills in New England and the south. Cloth was bleached and dyed at the Bleachery and wastewater was reportedly discharged into a raceway that emptied into the tidal creek (EA 1986). Mercuric chloride and arsenic pentoxide may have been used to dye cloth at the facility (NYSDEC 2000). Aniline dye was also made at the facility during World War I (Popper 1991).

For powering the facility, the Bleachery used several operations. For a period of time, coal fired steam boilers were used for powering equipment to process cloth (Popper 1991). From the late 1800s to approximately 1913, the MGP also burned coal to produce gas to operate boilers for the facility and the nearby community (Section 1.1.2). After operation of the MGP ceased, boilers were operated by coal until approximately the 1940s when a switch to fuel oil was made (Popper 1991). Several fuel oil tanks were located at the Bleachery (Popper 1991). From historic aerial photographs, it appears that three tanks were located on the north bank of the tidal creek and one tank may have been present as early as 1935 (O'Brien & Gere 2001), suggesting earlier use than the historical account by Popper (1991). Later, a hydroelectric facility was constructed and operated on the north bank of the tidal creek at the upstream portion of the site.

### 1.1.2. Manufactured Gas Plant Operations, Circa 1875 to 1913

The main portion of the MGP reportedly operated on the south bank of the tidal creek at the subject site (Popper 1991). The brick remains of two former gas holders are visible on the west portion of the site (Figure 1-2). The approximate locations of coal sheds and boiler house were identified on a map of the site dated approximately 1867 (DCHS 2000). According to the map, the coal shed was located in the vicinity of Building 16 and the Boiler House was located in the vicinity of former Building 11 (Figure 1-2).

During operation of the MGP, coal was reportedly barged up the tidal creek from the D&H Canal, and stored in large coal sheds located on the north and south banks of the tidal creek as early as the 1870s (EA 1986, Popper 1991, DCHS 2000). NYSDEC files indicate that approximately 16 acres, beyond the boundary of the Three Star Site, were filled with coal cinders (NYSDEC 2000). Most of these areas are either paved or developed. In a historical account of the area, Popper (1991) indicated that coal cinders were used to fill behind the retaining wall built on the south bank of the tidal creek at the site and an area downstream in the vicinity of Creek Road. Historic maps indicate topographic changes have occurred in those areas as well as the southwest portion of the former Bleachery property on the north bank.

### 1.1.3. Metal Plating Operations, 1958 to 1995

The Three Star facility (including Watson Metals Products Corporation) anodized aluminum from 1958 to when the facility closed, around 1995. Beginning in 1972, the facility also reconditioned electronic equipment that involved a water rinse of gold components (NYSDEC 2000). Operations also included paint stripping using caustics (DCDH 1971). Three Star plating processes included the use of mild non-etching alkali cleaners, a proprietary mix of sodium dichromate or chromic acid, sulfuric acid with the addition of soda ash to adjust the pH to 5 or 6, and a dying process which required ferric ammonium oxide and synthetic dyes. The paint stripping operation reportedly used chlorinated solvent with fluoride, caustic soda, and kerosene.

The waste from Three Star was reportedly discharged to the lagoon (DCDH 1967). Prior to the development of the lagoon in 1962, it is presumed that the waste was discharged to the former raceway. The sanitary facilities in the Three Star buildings failed a dye test performed in 1971. At

that time, wastewater was found to discharge via floor drains to the lagoon and the tidal creek. Rinse water from plating tanks reportedly discharged to the back of the plant, which subsequently drained into the former raceway and the Three Star lagoon (DCDH 1971).

A Phase I site investigation was completed in the mid-1980s to evaluate these issues (EA 1986). The Phase I investigation found that the waste stream from the Three Star operations at the site contained sulfuric and phosphoric acids, caustic dyes, soaps, and various trace metals including copper, nickel, chromium, aluminum, and zinc. Processes also included rinsing of gold components. In 1975, the facility was required to obtain a State Pollution Discharge Elimination System (SPDES) permit to continue discharging via the former raceway. SPDES permitted discharges occurred from 1975 to 1980. From the mid-1950s to 1980, waste was reportedly discharged to the tidal creek at a rate of 20,000 to 60,000 gallons per day (EA 1986).

The Dutchess County Department of Health documented wastewater discharge from Three Star to the former raceway and subsequently to the tidal creek as early as 1967. The practice of discharging a diluted waste stream directly to the tidal creek reportedly continued for many years. After the SPDES permit was issued, NYSDEC documented that Three Star occasionally exceeded SPDES effluent limitations for nickel and copper in 1977 and 1979. Analyses of Three Star effluent, provided by the New York State Department of Health (NYSDOH) Division of Laboratories and Research, indicated that metal concentrations were occasionally high with respect to the United States Environmental Protection Agency (USEPA) surface water criteria.

Subsequently in 1979, NYSDEC issued a consent order that required Three Star to address SPDES excursions. It is not known how wastewater was handled after that time. However, it appears that the materials were managed on-site since the facility is not connected to the village sewerage system (Kolb 2003).

From November 1978 to the summer of 1983, trailers stored on the Three Star Site contained powdered raw product in 55-gal drums. The powdered product contained in the 55-gal drums included aluminum, oxide, nickel, and cadmium. Reportedly, these materials were from Marathon Battery, formerly of Cold Spring, New York. In 1983, the trailers were removed under supervision of NYSDEC and the Dutchess County Department of Health (NYSDEC 2000). In the 1986 Phase I Investigation, it was reported that a pipe discharged to a puddle near the south corner of the plating facility, behind Building 17. The standing water in the puddle was sampled and found to contain metals and solvents (EA 1986).

An inspection of the facility by USEPA in 1993 indicated that it was not in compliance with applicable metal finishing pretreatment standards. The discharge of zinc from the facility was 4.1 mg/l compared to a discharge limit of 2.6 mg/l. A leaking PVC pipe that conveyed wastewater was also identified. The storage of metal waste sludge in concrete holding tanks at the facility was also noted in the report (USEPA 1993).

In May 2004, a fire at the Three Star Site destroyed Buildings 15,16, and 21. The destruction of the buildings exposed to the environment twenty-three former metal plating vats that were located in Building 16. An evaluation of the vats was completed as a Supplemental Remedial Investigation (SRI). Results of the SRI are reported separately (O'Brien & Gere 2007c).

### 1.1.4. Other Commercial Uses of the Site

Currently, the site is known as the Market Street Industrial Park. Realty corporations that lease space to the various tenants reportedly own the majority of the property. Several buildings are vacant or used as warehouse space.

Recent tenants of the Market Street Industrial Park consist of the following (O'Brien & Gere 2001):

- Riverview Transmission.
- Axton-Cross Company occupied the building located next to the lagoon in the 1960s. The company manufactured and distributed chemical products (Popper 1991).
- Fabricare Products occupied the building located next to the lagoon (Axton-Cross building) in the 1970s.
- Cresthill Industries, Inc.
- Lighting and Electronics, Inc.
- Sears mail order was located in one of the main buildings (Building 22) at the Three Star Site.
- Page Print Systems occupied a building next to the tidal creek, at the east end of the Three Star Site.
- Tupperware.

The main current tenant of the site is a floor tile distributor located in the former Axton-Cross Building. Other tenants include a wood shop in the small building next to the old bridge and tractor trailer parking; both located in the Building 12 Area. In 2002, an automobile was being restored near Building 17. Other uses of the site include storage in the buildings (NYSDEC 2003).

### 1.1.5. Nearby Properties and Potential Impacts to Subject Site and Wappingers Creek

The portion of the Market Street Industrial Park located on the north bank (north parcel) is approximately 5 acres and features old factory buildings that are currently occupied by commercial tenants. The parcel also contains a large storage tank, an abandoned smoke stack, a recently constructed personal storage building, and paved parking areas (NYSDEC 2000). Previous operations on the north bank included Dutchess Bleachery, Hanover Print Works, Olah Associates (metal plating), Kemp & Beatley, and IBM. The Dutchess County Department of Health records indicate that Hanover Print Works was located on the north bank of the tidal creek in a building on the west portion of that site. As previously cited, the facility reportedly discharged approximately three quarts of paint per day to the north lagoon that drains from the north parcel to the tidal creek (Section 1.1.5). A realty corporation reportedly owns the property. According to NYSDEC spill files, which were reviewed in 2001, two spills were reported nearby:

- In 1999, a citizen logged a complaint to report that a 5,000-gal oil tank may be buried on the Three Star Site. The citizen complained of oil observed in the creek (O'Brien & Gere 2001).

- An active leaking underground storage tank (UST) for gasoline was located within one mile of the subject property. It is unknown if this spill has affected the subject site (O'Brien & Gere 2001).

These off-site releases of contaminants to the environment represent possible sources of constituents to the subject site and the creek.

## 1.2. Physical Features of the Site

The Three Star Site consists of two areas defined for the RI/FS as the Main Site and the former manufactured gas plant (MGP Site), as shown in Figure 1-3. The Main Site occupies the east portion of the Three Star Site where the buildings that housed the industrial operations were located. The MGP Site is located on the west portion of the Three Star Site and contains two former gas holders where MGP operations occurred. The lagoon is located along the west part of the Main Site between the Main Site and the MGP Site. The physical features of the Three Star lagoon are discussed further in Section 1.2.2.

The Three Star Site is located within an oxbow of the tidal creek below Wappingers Falls (Figure 1-1). The tidal creek borders the site to the north and flows toward the west to its confluence with the Hudson River located approximately 1.5 miles downstream of the site. The former raceway and residences border the site to the south. A steep embankment is located next to the former raceway (Figure 1-2). According to village records, the facility is not connected to the village sewage system (Kolb 2003). In a 1967 aerial photograph (DCSWCD 2000), what appears to be drainage ditches from buildings were observed due north of the lagoon and raceway.

Rock retaining walls located along the tidal creek bordering the site are approximately 10 feet (ft) high (Popper 1991). Based on historic information, the Three Star Site contains fill material from MGP activities that was placed behind the retaining walls (Section 1.1). During site excavation in the 1960s for construction of the building formerly occupied by Axton-Cross, coal wastes up to 9 ft deep were reported (EA 1986). The brick remains of two former gas holders are visible on the MGP Site (Figure 1-2). The approximate locations of a coal shed and boiler house were identified on a map of the site dated approximately 1867 (DCHS 2000). According to the map, the coal shed was located in the vicinity of Building 16 and the Boiler House was located in the vicinity of former Building 11 (Figure 1-2). Coal wastes were reportedly used to fill 16 acres of land in the area, including the Three Star Site (EA 1986).

### 1.2.1. Geology and Hydrogeology

Regional reports indicated that, except for a small area, glacial outwash/alluvial sand and gravel deposits that are present along both sides of the tidal creek directly underlie the Three Star Site. These deposits average about 2,000 ft in width adjacent to, and south of the Three Star Site, and increase to more than 6,000 ft in width northeast of the site. The area of exception is located generally beneath the tidal creek in the west portion of the Three Star Site where exposed bedrock and/or less than 3 ft of glacial till overlying bedrock are present.

Approximately 3,000 ft north-northeast of the site, a similar sand and gravel deposit is reportedly 108 ft thick at the Village of Wappingers Falls well field (Well DU-760) located approximately 3,000 ft

north-northeast of the site, near Route 9D (Figure 1-1)[1]. This sand and gravel sediment is bounded to the east by deposits consisting of at least 3 ft of glacial till overlying bedrock, and to the west across the tidal creek by deposits consisting of less than 3 ft of glacial till and/or exposed bedrock (NYSDEC 2000).

A thrust sheet of bedrock that predominantly comprises autochthonous graywacke and shale of the Ordovician Age Austin Glen Formation underlies the unconsolidated sand and gravel sediment. Just west of the Three Star Site, bedrock consists of limestone and dolostone of the Cambro-Ordovician Age Wappinger Group (NYSDEC 2000).

Based upon the available information, the glacial/alluvial sediment aquifer on either side of the tidal creek is designated as the aquifer of concern with regard to the Three Star Site. The only wells reportedly completed in the glacial/alluvial sediment portion of the aquifer of concern are those of the Wappingers Falls well field located northeast of the Three Star Site (Figure 1-1). In general, under natural conditions, the ground water in this aquifer beneath the Three Star Site will discharge to the tidal creek, which flows southwest to the Hudson River. The ground water table is approximately equal to the level of the tidal creek. A graywacke/shale bedrock aquifer located on either side of the tidal creek is not expected to be an aquifer of concern regarding the Three Star Site.

North and east of the Three Star Site, the Village of Wappingers Falls developed the bedrock aquifer with wells for public water supply (Figure 1-1). This portion of the aquifer of concern is bounded to the east and south by a thrust fault, and to the west where the bedrock type changes from graywacke/shale to limestone/dolomite west of the tidal creek. Information from wells in the area indicate the ground water table in the bedrock aquifer ranges from 14 ft below grade at Well DU-369 to 40 ft below grade at Well DU-343 (EA 1986).

### 1.2.2. Three Star Lagoon

The former raceway located on the Three Star Site was reportedly constructed in the early 1900s by Dutchess Bleachery to discharge facility wastes (EA 1986). Three Star also reportedly discharged wastewater to the former raceway during its operations at the site (EA 1986). The Three Star lagoon located on the property is reportedly unlined and covers approximately 0.5 acres of the site. Village storm water formerly drained to the Three Star lagoon via a pipe located along the former raceway bordering the site to the south (Section 1.1.3). The Three Star lagoon reportedly also received industrial wastes during operation of Three Star (Section 1.1.3). Prior to that, when the raceway was operational, it may also have received waste from site industrial activities. Other industrial wastes may have also drained in the direction of the former raceway and the Three Star lagoon.

## 1.3. Environmental Chemistry

The properties of the chemicals and physical attributes of the Three Star Site contribute to the fate and transport of the chemicals once exposed to the environment (Table 1-1). Chemicals used at the site included volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals and cyanide. Constituents associated with coal and MGPs are primarily SVOCs consisting of PAHs. However, additional constituents may consist of benzene (VOCs), phenolic compounds (SVOCs), and inorganics, in particular cyanide.

[1] According to the Village of Wappingers Falls, construction of wells for use of ground water as a potable water supply is prohibited because a public water supply is available. There are no known wells in the vicinity of the Three Star Site.

### 1.3.1. Volatile Organic Compounds

Tetrachlroethene (PCE), trichloroethene (TCE), trichloroethane (TCA), dichlorobenzene (DCB), and chlorobenzene (CB) are chlorinated VOCs that are commonly used in industry as solvents or degreasing agents. When PCE, TCE, and TCA are released to the environment they may degrade over time resulting in the formation of related compounds that are referred to as daughter compounds. PCE may degrade to TCE, which in turn may degrade to DCE and finally vinyl chloride. Likewise, TCA may degrade to dichloroethane (DCA), and DCB may degrade to CB. Although some of these compounds may be used individually as solvents, they are commonly related as degradation byproducts. Benzene, toluene, ethylbenzene, and xylene (BTEX) are compounds that are often associated because they are components of hydrocarbon combustion sources, but these compounds may also be used as industrial solvents independently. In summary, ethenes, ethanes, chlorobenzenes, and BTEX are four unrelated types of VOCs or classes of compounds representing different sources when present in the environment.

### 1.3.2. Semivolatile Organic Compounds

Semivolatile organic compounds (SVOCs) detected at the Three Star Site consist of PAHs, chlorobenzenes, and phenols, as discussed below

*Polycyclic Aromatic Hydrocarbons*

PAHs are common environmental constituents, generally associated with incomplete combustion processes. Typically, PAHs exist as mixtures with up to sixteen individual compounds measured by standard analytical methods. The molecular structure of individual PAH compounds vary in size from two to seven attached benzene rings that exhibit a wide range of chemical properties. Similarly, PAH mixtures have a wide range of properties reflecting the composition of individual compounds contained in the specific mixture. Chemical and physical processes involved in weathering of organic compounds in the environment may sequester PAHs within a soil or sediment matrix by mechanisms that are poorly understood (Alexander 2000; Luthy *et al.* 1997; Hatzinger and Alexander 1995).

Sources of PAHs consist of both natural and anthropogenic (originating from human activities) origins. Natural sources include fires from sources such as volcanoes, forests, and prairies. Anthropogenic sources exceed natural sources and include emissions from combustion of fossil fuels (Menzie *et al.* 1992, Van Metre *et al.* 2000). Residential wood combustion accounts for greater than 30% of the anthropogenic emission in North America (USEPA 1994). Use of asphalt materials is also a source of PAHs in the environment (Van Metre *et al.* 2000). Specific to the Three Star Site, past MGP operations are a potential source of materials containing PAHs that exceed background levels.

Urban sprawl and specifically the associated increased use of motor vehicles has been implicated as a source of increased PAH concentrations in aquatic sediment over the past 40 years (Van Metre *et al.* 2000). Sources of PAHs related to automobiles include tire wear, crankcase oil, roadway wear, and car soot and exhaust (Van Metre *et al.* 2000). Total PAH concentrations reported in surface sediment sampled from 10 reservoirs and lakes in metropolitan areas of the US had median and mean concentrations of 31 and 46 mg/kg, respectively, and ranged from 3 to 224 mg/kg (Van Metre *et al.* 2000). For urban soils, typical background concentrations of total PAHs reportedly range from 1 to 3 mg/kg, with higher concentrations of 8 to 36 mg/kg attributed to road dust (Menzie *et al.* 1992). Concentrations of individual PAHs in urban sediment attributed to sources of combustion reported to range from 10 μg/kg to 10 mg/kg (Gustafsson *et al.* 1997).

*Chlorobenzenes*
Industrial and commercial uses of chlorobenzenes include use as an intermediate in the manufacture of other organic chemicals, dyestuffs and insecticides; as a solvent for adhesives, drugs, rubber, paints, and dry-cleaning; and miscellaneous uses that include an agent for swelling fibers in textile processing. Other uses of CB have also included the production of phenol, DDT, and aniline; and the use as a tar and grease remover in cleaning and degreasing operations. In the environment, CB may be subjected to biodegradation with 2- and 4-clorobiphenyl as byproducts (USEPA 1995). Under anaerobic conditions DCB can degrade to CB (Ramanand *et. al*. 1993).

*Phenolic Compounds*
Phenol is mainly man-made, however, it is also found naturally in animal waste and vegetative organic material. The largest use of phenol is to make plastics (phenolic resins), but is also used to make caprolactam (nylon 6 and other man-made fibers) and bisphenol (used to make epoxy and other resins) (ATSDR 1999). Phenolic compounds are also used in industry as antioxidants, chemical intermediates, slimicides, disinfectants, tanning agents, photographic developers, and additives to lubricants and gasoline. They are widely used in the industries of photography, petroleum, paint, explosives, rubber, plastics, pharmaceuticals and agriculture. The manufacture of phenolic resins, bisphenol a, and caprolactam are three major uses of phenols in industry (ATSDR 1999, International Labour Organization 1998).

### 1.3.3. Inorganics
Most metals and cyanide are ubiquitous in the environment, but are used for a variety of purposes (Table 1-1). As elements, metals do not degrade. Environmental conditions such as pH, oxidation-reduction (redox) potential, organic carbon content, and particulate interactions affect the fate and toxicity of inorganics in the environment (Yin and Allen 2000). Valence state affects mobility, bioavailability, and toxicity of metals. Each inorganic constituent has a unique chemistry that is a factor in its fate and transport. Total metals or total cyanide concentrations may not be indicative of toxicity. Some specific examples are cited below:

- Chromium in the environment is generally present as trivalent chromium that is much less toxic than hexavalent chromium, a less common form of chromium in the environment. Hexavalent chromium is rapidly reduced to trivalent chromium in the presence of oxygen.
- Mercury is present in the environment in elemental, and inorganic and organic bound forms. Methyl mercury (a form of organically bound mercury) is the most toxic form (USEPA 2000).
- Cyanide in the environment is measured as total and amenable cyanide. The amenable cyanide fraction represents the biologically available cyanide.

## 1.4. Conceptual Site Model

A conceptual model of the Three Star Site identifies potential sources and migration pathways that were evaluated during the RI (Figure 1-4).

For over 150 years, the Three Star Site has been the location of a number of industrial activities that may have impacted the site. Surface soil adjacent to buildings may have been impacted by industrial waste that was discharged to floor drains inside the buildings (Section 1.1.3) or pipes directed to the former raceway or the tidal creek (Section 1.2.2). Discharges of wastes to surface soils could result in migration of contaminants to subsurface soils and ground water, and seepage of ground water to the tidal creek. The sanitary system for the buildings also allowed seepage to the tidal creek. During the period of 1958 to 1980 Three Star reportedly discharged wastes from industrial processes to surface

soil of the Three Star Site and allowed them to drain to the former raceway, the Three Star lagoon, and the tidal creek (NUS 1986a,b, 1988). It is not known what disposal practices were used after that. However, previous reports of the facility being connected to the village sanitary sewer system (NUS 1986a,b, 1988) could not be corroborated with the village records (Kolb 2003).

Although previous waste disposal activities at the Three Star Site were not documented, it is likely that industrial wastes from operations at the Three Star Site for the period from the 1830s to the start of the Three Star operations in 1958 were handled in a similar manner. In addition to industrial discharges from industrial operations in buildings at the site, coal cinder wastes from the use of coal fired boilers at the site were reportedly used to fill portions of the Three Star Site and may have been used to fill off-site areas. Due to past disposal practices, site contaminants were investigated in soil, ground water, surface water and sediment. As discussed in the SRI Report (O'Brien & Gere 2007c), exposure of the vats to the environment after the fire of 2004 was evaluated as a potential source of metal plating wastes to subsurface media.

From review of site topography, industrial wastes discharged from on-site buildings to surface soil would primarily drain to the south and west toward the former raceway and Three Star lagoon and then to the tidal creek (Figures 1-2 and 1-3). However, redistribution of constituents may have occurred in surface soil and the lagoon sediment due to the past flooding because the site is within 100-year flood plain. Historic records indicate that the site has been flooded at least three times since 1900. Flooding can mobilize contaminants from the site or deposit contaminants originating elsewhere. Once in Wappingers Creek, constituents may have migrated to the Hudson River, located approximately 1.5 miles downstream.

## 1.5. Current and Future Uses of the Site

Current uses of the Three Star Site consist of warehouse operations in the former Axton-Cross Building and parking areas for tractor trailers. The destruction of Buildings 15, 16 and 21 in the fire of May 14, 2004 and the associated debris remaining on the Three Star Site limits the potential uses of the Three Star Site. Debris from the fire remains on the Three Star Site. The former MGP site is currently not used and remains undeveloped with trees and other vegetation.

It is anticipated that in the future, the Main site may be redeveloped for commercial uses. The MGP site could also be developed in the future. At this time, there are no restrictions in place that would restrict the type of development that could take place.

## 1.6. Remedial Investigation Objectives

Contamination of surface and subsurface soil, and ground water of the Three Star Site, and surface water and sediment of the Three Star lagoon were investigated for the Site RI. The objectives of this Site RI are presented below:

- Evaluate current site conditions and evaluate potential migration pathways.
- Evaluate the potential for site impacts to fish and wildlife.
- Evaluate potential pathways for human exposure to site constituents.

- Evaluate the ground water below the site for potential contamination, including evaluation of the vertical and horizontal extent.

- Evaluate local background soil concentrations of SVOCs and inorganics to support evaluation of the soil data for the Three Star Site.

- Evaluate the potential for surface soil contamination at the Three Star Site due to past disposal practices and site flooding.

- Evaluate potential subsurface soil contamination at the Three Star Site.

- Evaluate the Three Star lagoon for potential surface water and sediment contamination. Evaluation of the Three Star lagoon included development of sediment volume estimates and measurement of water levels for potential tidal effects. In addition, the connection of the lagoon with the shallow aquifer was evaluated.

The investigation of the Three Star Site was completed according to State Superfund guidance and the RI/FS work plan and addendum (O'Brien & Gere 2001, 2002).

## 1.7. Approach

The activities completed for the Site RI focused on three general areas consisting of the Off-Site Areas and two areas within the Three Star Site referred to as the Main Site and the MGP Site.

*Off-Site Areas*
The Off-Site Areas were selected to represent background locations where samples of surface soil were collected and analyzed for comparison with soil data collected from the Three Star Site. In addition, three samples of soil were collected from one residence to evaluate surface soil on that property. That residence may contain soil that reportedly may have originated as fill material from the Three Star Site.

*Main Site*
The Main Site consists of the buildings associated with past uses as the Bleachery, metal plating operations, and other industrial activities; it also includes the former Axton-Cross Building and the Three Star lagoon. Due to the size of the Main Site, six broadly defined sub-areas were identified to focus the investigation (Figure 1-3):

- Former Axton-Cross Building
- Buildings 21/22 Area
- Buildings 15/16/17 Area
- Former raceway
- Building 12 Area
- Three Star lagoon.

The identification of these areas of the Main Site aided the understanding of potential sources of contaminants and helped to focus the discussions of site data.

*MGP Site*
The MGP Site consists of the ruins of gas holders and the adjacent land. The MGP Site included an area with debris consisting of metal cans, pieces of concrete, an old truck, and other miscellaneous materials. Most of this area is heavily vegetated with trees and grasses.

Investigation of the Three Star Site was completed using a phased approach to collect samples and data for evaluation. The purpose of the first phase was to identify constituents at the Three Star Site that may be present in ground water, surface soil, surface water and sediment. Results of the first phase were used to focus the number of analytical parameters required in subsequent work aimed to evaluate horizontal and vertical extent of impacts.

Several environmental media were sampled during the Site RI. Soil samples were collected from the surface as well as from the subsurface during completion of soil borings and excavation of test pits. Shallow and deep wells were installed and ground water samples were collected on the Main Site and MGP Site. Ground water sampling locations on the Main Site were selected to evaluate the direction of flow across the site. Investigation of the Three Star lagoon consisted of sediment probing, and surface water and sediment sampling.

Samples collected for the Site RI were analyzed for VOCs and SVOCs, of the Target Compound List (TCL) including tentatively identifiable compounds or TICs, and Target Analyte List (TAL) inorganics. Additional analyses consisted of the following:

- Samples collected during the first phase of the RI were analyzed for TCL pesticides and polychlorinated biphenyls (PCBs). Results of these analyses did not identify the Three Star Site as a source of these constituents (Sections 5.1 and 6.1).

- Soil and sediment samples included analysis of hexavalent chromium and total organic carbon (TOC). Amenable cyanide (considered to be the biological available factor of cyanide) was also analyzed in soil and sediment samples where total cyanide was detected.

- Surface and ground water field analyses included pH, conductivity, temperature, turbidity, dissolved oxygen, and salinity. Ground water field analyses also included oxidation-reduction potential (ORP). Laboratory analyses of surface water and ground water samples included hardness and total suspended solids. Laboratory analyses of surface water also included dissolved organic carbon (DOC) and alkalinity.

- One sample of sediment from the Three Star lagoon was extracted using the toxicity characteristic leaching procedure (TCLP) and analyzed. Grain size distribution was also sampled and analyzed.

O'Brien & Gere Laboratories in Syracuse, New York analyzed the samples, except for samples collected for analysis of hexavalent chromium, TOC, and sediment physical parameters. Hexavalent chromium and TOC samples were analyzed by Columbia Analytical Services in Rochester, New York (Phase I RI) or Ecology & Environment, Inc. in Lancaster, New York (Phase I/II RI). Physical parameters in sediment were analyzed by PW Laboratories, Inc. in Syracuse, New York.

# 2. Methods

The Site RI was conducted in two phases that were completed in 2001 and 2002. Phase I of the Site RI was completed according to the Work Plan (O'Brien & Gere 2001) from April to July 2001. Phase II of the Site RI was completed according to the Work Plan Addendum (O'Brien & Gere 2002) from November to December 2002. Prior to sampling each location, the sampling equipment were decontaminated according to the work plan (O'Brien & Gere 2001).

Details of investigations of surface soil, subsurface soil, and ground water are presented in separate sections below (Sections 2.1 through 2.3, respectively). In addition, the surface water and sediment samples collected to investigate the Three Star lagoon are presented (Section 2.4). The sample quantities analyzed for the investigation of Off-Site Areas, the Main Site, and the MGP Site are presented in Table 2-1. Descriptions of site features and associated samples are presented for the Off-Site Investigation, and investigations of the Main Site and MGP Site in Tables 2-2, 2-3, and 2-4, respectively.

Guidance followed for completion of risk assessment activities is summarized in Section 2.5. Data interpretation methods are also discussed in Section 2.6.

## 2.1. Surface and Shallow Soil Sampling

### 2.1.1. Sample Locations

The locations were selected to evaluate potential issues associated with observed industrial features (Table 2-3). Surface soil samples were collected from the 0- to 2-inch depth interval. Shallow soil samples were collected from some of the locations, generally from the 0- to 2-ft depth interval. However, samples collected for the subsurface soil investigation (Section 2.1.2) from within 2.5 ft of the ground surface were also included in the evaluation of shallow soil.

Surface and shallow soil sampling was completed on July 11, 2001 and December 5 through 9, 2002. Surface soil and shallow samples were collected at locations identified on Figure 2-1. Surface and shallow soil samples collected off-site consisted of nine background locations, and two locations at Off-Site Location 1 (Figure 2-1, Table 2-2). On the Main Site, fifteen samples were collected (Figure 2-1, Table 2-3):

- Four samples were collected in the vicinity of the former Axton-Cross Building (SS-9 through SS-12).
- Two samples were collected in the Building 21/22 Area (SS-7 and SS-8).
- Three samples were collected in the former raceway (SS-1, SS-5, and SS-18).
- Three samples were collected in the Building 15/16/17 Area (SS-3, SS-4, and SS-6).
- Three samples were collected in the Building 12 Area (SS-15 through SS-17).

On the MGP Site, eleven surface and shallow soil samples were collected at various locations around the site, including two test pits (Figure 2-1 and Table 2-4).

### 2.1.2. Sample Processing and Analysis

At each surface soil sampling location, composite soil samples were collected at one or two depth intervals using a stainless steel hand auger or sampling trowel. In vegetated areas, the vegetation and humus were removed prior to sample collection. Each location included sampling of the 0- to 2-inch interval. At locations where two depth intervals were collected, the second sample consisted of the 0- to 24-inch depth interval. At locations where refusal was encountered at depths less than 24 inches below grade, the sampling location was moved slightly to try to improve sample recovery. When refusal was encountered repeatedly, the sampling interval was composited accordingly. Sample observations were documented in field logs (Appendix A).

Surface soil samples were analyzed for TCL SVOCs, TAL inorganics, and TOC. In addition, samples collected during the Phase I RI were analyzed for TCL VOCs, pesticides, and PCBs. VOC and SVOC analyses included the identification of tentatively identifiable compounds (TICs). Inorganic analyses included hexavalent chromium. Total cyanide analyses were completed with an expedited turnaround to provide for analysis of amenable cyanide, if total concentrations were detected.

## 2.2. Subsurface Soil Investigation

### 2.2.1. Sample Locations

The investigation of subsurface soil at the site was completed from April 24 to May 3, 2001, November 18 through 22, 2001 and December 2 through 11, 2002. Subsurface soil sample locations for the Main Site and MGP Site are described in Tables 2-3 and 2-4, respectively. The locations of subsurface soil samples are identified on Figure 2-2.

On the Main Site, eighteen soil borings were completed and four test pits were excavated (Figure 2-2, Table 2-3):

- Four soil borings were completed to evaluate the Axton-Cross Building Area including what appear to be floor drain holes (1 boring), the drywell south of the building (2 borings), and an underground storage tank (UST, 1 boring).
- Three borings were completed to evaluate the above ground storage tanks (ASTs) in the Building 21/22 Area.
- Three borings were completed to evaluate the former raceway.
- Four borings were completed to evaluate the area around Buildings 15/16/17.
- Four borings were completed in the Building 12 Area, including one located near a UST.

The soil borings completed on the Main Site also included two deep borings. Four test pits were located along the area adjacent to the tidal creek. Two of the test pits were located in the former Axton-Cross Building Area and the other two were located in the Building 12 Area (Figure 2-2).

On the MGP Site, eight soil borings were completed and six test pits were excavated (Figure 2-2, Table 2-4). Soil borings included one deep boring. Shallow soil borings SB-3-01 and SB-4-01 were completed in the center of the former gas holders located in the MGP Site (Figure 2-2). Although drilling at the SB-2 location was supposed to result in the completion of a monitoring well, shallow bedrock prevented the construction of this well. The soil borings included one deep boring at BMW-1.

### 2.2.2. Sample Processing and Analysis

The soil borings were completed using conventional hollow stem auger drilling methods according to the work plan (O'Brien & Gere 2001). The shallow borings were completed to depths of approximately 10 to 30 ft. The deep borings were completed to the top of bedrock (approximately 50 to 65 ft). Soil samples were collected continuously to the base of each boring. On average, test pits were excavated to a maximum depth of approximately 11 to 12 ft below grade. Descriptions of soil sample texture, composition, color, consistency, moisture content and recovery were recorded on the field logs (Appendix A).

Field screening of soil samples for the presence of VOCs was completed with a photoionization detector (PID). Soil samples from each depth interval collected during the completion of soil borings were placed into field screening containers with an air headspace. The results of headspace analyzed with the PID were used to assist selecting samples for laboratory analysis. Generally, two to three soil samples were selected as depth composites from each soil boring for laboratory analysis. Soil samples from some of the test pits were also submitted for laboratory analysis based on stratigraphy, evidence of possible contamination, and degree of saturation.

Subsurface soil analyses consisted of TCL VOCs and SVOCs (including TICs), and TAL inorganics (Table 2-1). Total cyanide was analyzed with a one-week turn around time. If total cyanide was detected, amenable cyanide was also analyzed. A subset of samples (Phase I RI) also included analysis of TCL PCBs and pesticides (Table 2-1).

O'Brien & Gere Laboratories in Syracuse, New York analyzed the soil samples, except for samples collected for analysis of hexavalent chromium and TOC. Those samples were analyzed by Columbia Analytical Services in Rochester, New York (Phase I RI) or Ecology & Environment, Inc. in Lancaster, New York (Phase I/II RI).

## 2.3. Ground Water Investigation

Soil borings completed at sample locations designated "MW-" were converted to monitoring wells to investigate the ground water. Wells were generally constructed of 2-inch diameter PVC well screen and riser casing. The screened interval of the shallow wells typically consisted of 15-ft screens set to straddle the water table. For the deep wells (designated "BMW-"), 5-ft screen lengths were used. Well construction details are included as Appendix B. Wells were developed prior to sampling.

### 2.3.1. Main Site Well Construction and Development

Ground water monitoring wells MW-1, MW-6, MW-7, and MW-8 were constructed in 2001 and developed on May 7 and 8, 2001. Wells MW-9, MW-10, MW-11, MW-12, MW-13, BMW-2, and BMW-3 were constructed in 2002 and developed on December 6 through 11, 2002. Well development consisted of removing a minimum of ten well volumes of water from the wells. During monitoring well development fine grained sediment was removed from each of the monitoring wells. Turbidity levels typically exceeded the scale of the turbidity field meter (>1000 NTUs) during the start of well development, but improved as well development progressed. The turbidity levels in monitoring wells MW-6, MW-9, BMW-2 and BMW-3 were outside the scale of the turbidity meter during the entire well development process. Monitoring well development logs are included in Appendix B.

During well development, ground water was observed as summarized below.

- A sheen was noticed during the development of monitoring wells MW-6 and MW-7, and a noticeable "sweet" odor was observed when developing MW-6.
- Development water from MW-11 appeared black and had a minor "oily odor."
- A slight fuel oil odor was also noted during the development of MW-10.
- A heavy sheen and strong "oil like" odor was observed during the development of MW-9 in the Axton Cross building area.

PID levels in MW-9, MW-10 and MW-11 wellheads were below detection limits. However, cold temperatures and high winds most likely affected field measurements. PID levels measured at all other monitoring wells were less than the detection limits.

### 2.3.2. MGP Site Well Construction and Well Development

Shallow ground water monitoring wells MW-2, MW-3, MW-4, and MW-5 were installed in 2001 and developed on May 8 and 9, 2001. The bedrock ground water monitoring well BMW-1 was installed in 2002 and developed on December 7, 2002. Generally, well development consisted of removing a minimum of ten well volumes of water from the wells. However, due to limited recharge, two well volumes of water (2.4 gallons) were removed from MW-3. In wells MW-2, MW-3, MW-5 and BMW-1, the turbidity levels measured during well development exceeded the scale of the turbidity meter (> 1000 NTUs) due to the fine grained composition of the native soil (high fraction of fine sand and silt). After well development, turbidity levels in those wells were visually observed to be much lower, but still remained outside detection limits (>999 NTU).

During well development, ground water was observed and PID readings of wellhead air were obtained. A mothball (naphthalene) odor was noticeable during the development and ground water sampling at wells MW-4 and MW-5 located on the MGP Site. Development and purge water removed from MW-4 and MW-5 was black in color, contained a petroleum sheen, and contained a strong mothball odor. Well development and purge water removed from MW-4 and MW-5 was containerized on-site in a labeled 55-gallon drum. PID air monitoring performed in the wellhead prior to and following well development had readings ranging from 1.0 to 5.0 ppm in wells MW-4 and MW-5. In the BMW-1, MW-2 and MW-3 wellheads, the PID readings were less than the detection limit.

### 2.3.3. Ground Water Sampling

Two sets of ground water samples were collected during the Site RI. The first event was completed on May 16, 2001 and consisted of sampling of monitoring wells MW-1 through MW-8. The second ground water sampling event was completed on December 8 through 11, 2002. For that sampling event, monitoring wells MW-1 through MW-8 were sampled again along with monitoring wells MW-9 through MW-13 and BMW-1 through BMW-3 that were constructed in 2002. The monitoring wells produced sufficient quantities of ground water for sampling with only nominal drawdown, except for MW-3, which was bailed dry during both ground water sampling events.

### 2.3.4. Sample Processing and Analysis

For both ground water sampling events completed for the Site RI, ground water samples were analyzed for field and laboratory parameters as discussed below.

Field parameters were measured during collection of ground water samples using a Horiba® U-10 water quality meter for pH, conductivity, dissolved oxygen, salinity, temperature, and turbidity. A Hanna® 9025 meter was used to measure the ORP. Field parameters were collected at the beginning of monitoring well purging, during the removal of each well volume, and prior to laboratory sample collection using bailers. Field instrumentation operating procedures were provided in the operations manual for the instrument. Field parameters, water level data, and general field observations were recorded on ground water sampling and ground water monitoring well purging field data sheets.

O'Brien & Gere Laboratories in Syracuse, New York performed the laboratory analyses. For both sampling events completed for the Site RI, TCL VOCs (including TICs). The ground water sampling completed in 2001 (Phase I RI) included analysis of TCL SVOCs (including TICs), pesticides and PCBs and TAL inorganics.

## 2.4. Investigation of the Three Star Lagoon

The investigation of the lagoon was completed on May 9, 2001 and November 11 through 13, 2002. Sediment locations and depths encountered during the investigation of the lagoon are presented in Appendix C.

### 2.4.1. Surface Water Investigation

Surface water samples were collected from the approximate center of the lagoon on November 11, 2002 using a Kemmerer® sampler. The water samples were collected from three separate water depths to represent upper, middle, and lower portions of the water column of the lagoon. Field analyses consisted of water temperature, conductivity, turbidity, salinity, pH, and dissolved oxygen.

For laboratory analyses, a single water column sample was collected as a depth composite sample from the center of the lagoon. For that sample, aliquots collected from the surface, middle, and lower portions of the water column were combined into a single sample for laboratory analysis. O'Brien & Gere Laboratories in Syracuse, New York analyzed the water column sample. Laboratory analyses consisted of TCL VOCs and SVOCs (including TICs), TAL inorganics, TSS, dissolved organic carbon (DOC), hardness, and alkalinity (Table 2-1). The sample collected for DOC analysis was filtered in the field using a 0.45 micron glass fiber filter and then analyzed for TOC.

A staff gauge was installed in the lagoon to evaluate potential water level variations due to ground water infiltration and creek tides. Water levels were obtained from December 7 through 10, 2002.

### 2.4.2. Sediment Investigation

Prior to sediment sampling, sediment probing was completed to evaluate depths of sediment in the lagoon. Reconnaissance of lagoon sediment depths was performed to identify suitable sampling locations and obtain a preliminary estimate of the volume of sediment present in the lagoon. The bottom of the lagoon was probed with a 20-ft calibrated pipe at twenty-four locations, spaced at approximately 25-ft intervals. Depths of sediment in the lagoon that were penetrated with the pipe are presented in Appendix C.

Seven sediment cores were collected from the lagoon:

In 2001 (Phase I RI), one sediment core was collected and sectioned into three depth intervals, each approximately 1.5 ft in length. The upper and bottom portions of the core were analyzed for TCL

VOCs and SVOCs (including TICs), pesticides, PCBs, and TAL metals (Table 2-1). The middle section of the sediment core was extracted using the Target Compound Leaching Procedure (TCLP) and then analyzed for TCL VOCs, SVOCs, pesticides/PCBs and TAL inorganics.

In 2002 (Phase II RI), six additional sediment cores were collected from along the longitudinal center of the lagoon. Each of the six sediment cores was sectioned into three depth intervals to represent the upper, middle, and lower depths of the sediment profile for a total of eighteen sample aliquots. According to the work plan, the aliquots representing the same depth intervals (upper, middle, or lower) from three locations were combined to form depth composite samples. Two sets of depth composite samples were formed in this manner. That is, six samples were collected for laboratory analysis consisting of two composite samples from each of the depth intervals.

O'Brien & Gere Laboratories in Syracuse, New York analyzed the sediment samples for TCL VOCs and SVOCs, and TAL inorganics. The TCL VOC and SVOC analyses also included identification of TICs. In addition, hexavalent chromium and TOC were analyzed by Columbia Analytical Services in Rochester, New York (Phase I RI) or Ecology & Environment, Inc. in Lancaster, New York (Phase I/II RI). Two samples were analyzed for physical parameters consisting of particle size distribution and bulk density. PW Laboratories, Inc. in Syracuse, New York completed the physical parameter analyses. The sediment samples collected during 2001 (Phase I RI) were also analyzed for TCL pesticides and PCBs by O'Brien & Gere Laboratories.

## 2.5. Exposure Assessment

Exposure assessment activities completed for the Site RI consisted of two evaluations:

- To evaluate potential exposures to humans, a qualitative exposure pathway analysis was completed according NYSDEC DER-10 guidance (NYSDEC 2002) in USEPA Risk Assessment Guidance for Superfund (RAGS) D format (USEPA 2002).
- To evaluate potential ecological impacts, A Fish and Wildlife Impact Analysis (FWIA) was completed according to NYSDEC (1994a) guidance. The FWIA was completed through Step II C, Toxic Effects Analysis (NYSDEC 1994a).

## 2.6. Data Interpretation

Data interpretation completed for the RI consisted of a data quality review (Section 2.6.1) and comparison of data to screening values (Section 2.6.2). Analytical data are provided in laboratory reports (O'Brien & Gere Laboratories 2001a-m, 2002a-k; Columbia Analytical Service, Inc. 2001a-e; Ecology & Environment, Inc. 2001a-c, 202a-f, 2003a-d).

### 2.6.1. Data Quality Review

Review of the data quality indicated that the RI data are acceptable for the intended uses. Laboratory data quality was evaluated according to New York State requirements for data usability summary reports (DUSR). The data quality review resulted in some of the data being qualified as estimates (J). Consistent with data validation guidance, the qualification of data as estimated does not affect the end uses of the data. Results of the DUSR were incorporated into data summary tables. Copies of the DUSRs completed for the Phase I RI and Phase II RI were presented separately (Potak 2001, 2003a-e).

From review of the DUSRs completed for this RI, the data quality is acceptable for intended uses. Minor laboratory problems resulted in some data being qualified. Data qualified as estimates (J) are acceptable for intended uses. The data quality issues identified are summarized below:

- Acetone and methylene chloride were laboratory contaminants detected in some of the VOC blank samples. Acetone was detected in both Phase I and Phase II RI samples. Methylene chloride was detected in samples collected during the Phase II RI (Potak 2001, 2003). The presence of laboratory contaminants complicates the interpretation of these compounds.

- Evaluation of hexavalent chromium concentrations is complicated by matrix interferences. For several samples, the recoveries of matrix spike/matrix spike duplicates for hexavalent chromium were lower than expected. However, results of laboratory control spikes indicated that the laboratory analytical performance was within acceptable ranges providing evidence that the soil matrices were responsible for these anomalies. The laboratory noted that low matrix spike/matrix spike duplicate recoveries may be due to reduction of hexavalent chromium in the soil matrix. If such rapid reduction occurs in in-situ sediment, this suggests that hexavalent chromium would be absent. Nonetheless, these interferences result in some uncertainty associated with the interpretation of undetected hexavalent chromium in affected samples. Total chromium data provide additional data to evaluate the potential levels of hexavalent chromium in the soil. It is not unusual for evaluation of soil and sediment matrices to be complicated by such factors.

A complete review of data quality is provided in the DUSRs (Potak 2001, 2003a-e).

### 2.6.2. Interpretation of Analytical Data

Site data were compared to screening values according to provisions of the work plan and addendum (O'Brien & Gere 2001, 2002). Interpretation of data trends was aided by generalization of analytical testing results:

- Interpretation of VOC data included calculation of total VOC and total BTEX concentrations and the identification of principle components. The presence of BTEX compounds can be associated with hydrocarbon sources. Chlorinated VOCs are another class of VOCs that may be indicative of industrial solvents. An understanding of the environmental chemistry of VOCs (Section 1.3.1) was applied to further evaluate potential sources.

- Interpretation of SVOC data included calculation of total SVOC concentration. SVOCs that are commonly associated with combustion occur as mixtures of PAHs consisting of sixteen analytical compounds (Table 2-5). Total PAH concentrations were also calculated to support the evaluation of the concentrations of PAHs in site media.

- Evaluation of inorganic data focused on inorganics that are not common geologic elements. Common geologic elements (consisting of aluminum, beryllium, calcium, iron, manganese, magnesium, potassium, and sodium) occur naturally in wide concentration ranges, and other inorganics are more suitable for evaluation of potential site impacts. As such, the common geological elements were not evaluated beyond tabulation of results. The other inorganics consist of arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver (elements with usage controlled by the Resource Conservation and Recovery Act (RCRA)), and antimony, cobalt, copper, nickel, thallium, vanadium, and zinc. The nature and extent of cyanide was also

included. An understanding of the environmental chemistry of inorganic constituents (Section 1.3.3) was applied to further evaluate potential sources.

Concentrations of SVOCs, in particular PAHs, and inorganics are ubiquitous in the environment, and comparison of site data with background data (off-site) can be used to evaluate potential incremental concentrations due to past site activities. Statistical evaluation of background data was completed to identify maximum background concentrations for reference (NYSDEC 2002). This statistical evaluation is documented in Appendix D.

### 2.6.3. Media-Specific Screening Values

The RI data were compared to screening values according to media-specific data quality objectives outlined in the Quality Assurance Project Plan (QAPP) (O'Brien & Gere 2001):

- Surface water and ground water data were evaluated using ambient water quality standards and guidance provided in the *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Division of Water Technical and Operational Guidance Series 1.1.1* (NYSDEC 1998). For ground water, Class GA screening values were applied as benchmarks for ground water quality although ground water use for this purpose is prohibited by the Village of Wappingers Falls. For surface water, Class C screening values were applied consistent with the water quality designation of Wappingers Creek. These evaluations were intended to represent conservative screening values, although they may not represent the intended uses for these waters on the Three Star Site.

- Soil data were compared to soil clean-up guidance provided in the *Part 375-6 Remedial Program Soil Cleanup Objectives* (NYSDEC 2006). Screening values for unrestricted uses and commercial uses were applied in the evaluation of the soil data. Local background concentrations of soil samples collected in the village of Wappingers Falls were also used as reference values to support the evaluation of potential incremental concentrations on the Three Star Site that may be related to site activities. New York State provides soil cleanup goals, referred to as Part 375 screening values in this report, for both organic compounds and inorganics (NYSDEC 2006).

- Sediment was compared to screening guidance provided in the *Technical Guidance for Screening Contaminated Sediments* (NYSDEC 1999). For organic compounds in sediment, a screening concentration was developed using sample TOC concentration to adjust each constituent concentration according to the sediment guidance. This approach assumes that equilibrium partitioning occurs in sediment. Elevated concentrations of TOC above 12 percent detected in certain samples were evaluated using the NYS screening values based 12% TOC. Concentrations of inorganics in sediment were compared to reference values for typical background concentrations, as provided in the screening guidance.

Results of these interpretive efforts are reported in subsequent sections of this report. Additional screening values were used to evaluate data for the FWIA component of the RI (Appendix E). For the FWIA, ecological screening values were obtained from Friday (1998) and additional screening values for surface soil were obtained from NYSDEC (1994b).

### 2.6.4. Source Identification Approach

Initially, ground water data was used to identify overall spatial patterns of constituents and select areas for in-depth evaluation of site soil. These data provide further detail to support the evaluation

of potential source areas that may be contributing to the ground water conditions that were observed. Source identification was aided by an interpretation of possible relationships between organic compounds and their fate in the environment (Section 1.3). Evaluation of the vertical extent of constituents in soils and ground water flow direction were used to support the inferences of source migration pathways drawn from the data.

# 3. Site Drainage, Geology and Hydrogeology

## 3.1. Site Drainage

The overall topography the Three Star Site is level with a typical elevation of approximately 7 to 8 ft above mean sea level (msl). The Three Star Site generally drains toward the west and north in the direction of the tidal creek (Figure 3-1). In portions of the Three Star Site the elevation ranges from approximately 4 to 16 ft above msl. The elevation was lower behind the Main Site Buildings 15,16, and 17 where an elevation of approximately 3.5 above msl was obtained (MW-7). The former raceway, which forms the south and west boundaries of the Main Site, drains toward the west. The former raceway contains elevations ranging from approximately 16 ft above msl at the east end (MW-13) to approximately 7 ft above msl toward the west end (MW-11). Based on elevations, stormwater runoff would tend to pool behind Buildings 15, 16, and 17 because the elevation of the former raceway and other portions of the Three Star Site are higher in comparison. In other areas of the Main Site, the drainage is generally toward the Three Star lagoon. The east portion of the Three Star Site near the tidal creek, with an elevation of approximately 10 ft above msl (MW-8), drains toward the former Axton-Cross Building where elevations are lower, between 6 and 7 ft above msl. The surface water elevation of the Three Star lagoon was not obtained, but based on observations, the elevation is presumed to be approximately equivalent to the elevation of the tidal creek or slightly higher.

The elevation of the MGP Site is approximately 9 to 14 ft above msl, with a typical elevation of approximately 11 ft. Therefore, the elevation of the MGP Site is approximately 3 to 4 ft higher than the Main Site. The area of highest elevation on the MGP Site is located at the south border of the site (SS-MGP-5). The area around the former gas holders contained elevations of 13 ft above msl. The northeast portion of MGP Site, with an elevation of approximately 9 ft above msl (SS-MGP-7), drains toward the tidal creek to the north. The remainder of the MGP Site drains toward the northwest.

The tidal creek is located to the north of the Main Site and to the northwest of the MGP Site. The elevation of the water surface in the tidal creek is approximately at msl, with water depths in the tidal creek varying by approximately 4 ft over the tidal cycle. Maximum water depths in the tidal creek are approximately 10 ft in the vicinity of the Three Star Site.

Off-site areas are generally higher in elevation compared to the Three Star Site. On the opposite shore of the tidal creek to the north is another portion of the Market Street Industrial Park and a steep embankment that is not developed. The embankment on the north shore of the tidal creek has elevations over 140 ft above msl. The village borders the Main Site to the south on top of an embankment approximately 40 ft to 70 ft above msl.

## 3.2. Geology

Subsurface material encountered at the site consisted of fill material, naturally deposited alluvium, glacial till, and bedrock. The fill material was of variable thickness and commonly consisted of reworked native material with variable amounts of cinders, concrete, and brick fragments. In portions of the site, the fill material was underlain by a layer of thin, dark, gray/black organic clay matter. Native alluvium consisted of various mixtures of silt, sand and gravel. A thin layer of till was found above bedrock in several locations. Bedrock observed at the Three Star Site consisted of shale and shaley limestone. Bedrock depths were variable across the Three Star Site. Soil boring logs are

provided in Appendix A. Two geologic cross-sections were constructed from the boring logs. The locations of the cross-sections are identified on Figure 3-2. An east-west trending cross-section is included as Figure 3-3. A north-south trending cross-section is included as Figure 3-4.

On the Main Site, fill that was sampled consisted predominantly of silt, sand and gravel with various amounts of cinders, slag, coke and brick fragments. Fill thickness varied from 4 ft at MW-1 near the southwest margin of the Main Site to 14 ft in BMW-3 to the northeast. The fill material in the northeast portion of the site is composed predominantly of brick fragments. The fill in the former raceway is very similar to the other fill on the site and ranges from 5 ft in BMW-2 to 18 ft in MW-13.

A dense organic clay was noted to be present within the upper 5 ft of the native material on the south and west portions of the Main Site. The organic clay layer ranged from 0.4 ft thick at the MW-1 location to 2.1 ft at the MW-6 location. The organic clay unit was absent in MW-8, MW-10, SB-9, SB-16 and MW-13 located along the north and east portions of the site. The organic clay layer was not observed on the MGP Site.

The fill material present on portions of the MGP Site consisted predominantly of cinders with occasional brick and concrete fragments, and scrap metal. Little to no fill material was encountered near the middle of the MGP Site in test pits TP-1, TP-2, and TP-3 and borings MW-2, MW-3 and SB-2. Fill material was encountered in test pits TP-5 and TP-11, and in borings MW-4, MW-5 and BMW-1. This material typically extended from grade to a depth of approximately 10 to 12 ft below grade. Fill related to the former gas-holders was also encountered in soil borings SB-3-01 and SB-4-01.

The native alluvium on the Three Star Site consists of various amounts of silt, sand and gravel. The composition of the alluvium was highly variable, but could be split into three generalized layers.

- A 5 to 10 ft thick layer of brownish fine to coarse-grained sand with little gravel was present on the majority of the site, except along the northeastern portion of the Main Site. On the MGP Site, this layer is at the surface in the areas where no fill is present.

- The aforementioned layer grades downward into a coarser layer of grayish medium to coarse-grained sand and gravel. This 10 to 20 ft thick layer is present on the Main Site but is absent from the majority of the MGP Site due to the elevated bedrock surface (discussed below). The layer is however, present on the northwestern part of the MGP Site adjacent to the tidal creek (MW-4, MW-5 and BMW-1) where the top of bedrock is lower.

- The above layer grades into a finer grained layer of brown/gray fine to medium grained sand and silt with little fine gravel. This layer, approximately 15 to 30 ft thick, appears to be somewhat finer along the eastern side of the Main Site.

Depth to bedrock across the Three Star Site ranged from approximately 66 ft below grade on the Main Site to approximately 1 ft below grade on the MGP Site as shown in a contour map of bedrock elevation data collected from the Three Star Site (Figure 3-5). The map was completed based on the soil borings and test pits that encountered bedrock. There were limited borings advanced to bedrock, particularly on the Main Site. Observations at several of the locations indicate that the bedrock was overlain by reworked glacial till and/or weathered bedrock. On the Main Site, 2 inches and 1.3 ft of till was encountered in deep borings BMW-3 and BMW-2, respectively. In BMW-3, the thin layer of

till was above approximately 9 ft of weathered bedrock. On the MGP Site, 1.5 ft of till was encountered only in MW-3 above approximately 2 ft of weathered bedrock.

From the limited bedrock elevation data collected from the Main Site, it appears that bedrock elevations are deepest along the east portion of the site, up to approximately 66 ft below grade, and they become shallower toward the west, at approximately 20 ft below grade. Finely laminated limey shale bedrock was encountered on the Main Site in borings from BMW-2 and BMW-3 at depths of 66.25 and 52.5 ft below ground surface, respectively. Bedrock elevations of the west portion of the Main Site are inferred from data collected from the MGP Site.

On the MGP Site, bedrock elevations ranged from 1 ft below grade (TP-2) to 49 ft below grade (BMW-1, Figure 3-5). Bedrock was encountered in test pits TP-2, TP-3, and TP-4 at depths of approximately 1, 8, and 2 ft below grade, respectively. Bedrock was also encountered in soil borings SB-2 (8 ft), SB-3-01 (27 ft), SB-4-01 (9 ft) and deep monitoring well BMW-1 (49 ft). Shallow bedrock encountered in TP-4 dipped to the north towards BMW-1. Although bedrock was initially encountered at a depth of less than 1 foot below grade in TP-2, the test pit was extended to the southeast and the bedrock surface was found to dip downward to the southeast. These observations, as presented in both cross-section maps (Figures 3-3 and 3-4) and the top of bedrock contour map (Figure 3-5), suggest that a bedrock ridge or knob, trending northeast to southwest, is present in the central area of the MGP Site. From the ridge, bedrock appears to dip away steeply northwest towards the tidal creek and to the southeast towards the Main Site.

## 3.3. Hydrogeology

The Three Star Site is located inside an oxbow of the tidal creek that borders the site to the north and west. In addition much of the Three Star Site is located on filled-in areas of the creek. Other surface water features on the site include the Three Star lagoon located between the Main Site and the MGP Site. This lagoon was at one time connected to the former raceway located along the south border of the Main Site. The raceway is now filled in. Village storm water formerly drained to the Three Star lagoon via a pipe located along the former raceway (Section 1.1). In April 2005, storm water was observed discharging to the ground surface through a break in the pipe and draining toward the low area behind former Buildings 15 and 16 (Section 1.1).

The majority of the runoff on the Three Star Site flows to the tidal creek or the Three Star lagoon, or collects in several low areas associated with the former raceway and near MW-7 (Figures 2-2 and 3-1). Due to the proximity of the Three Star Site to the tidal creek there is likely interaction between surface water and ground water on the Three Star Site.

Ground water occurs within the fill and alluvium at depths ranging from 3 to 14 ft across the site. Thirteen monitoring wells were constructed screening the ground water table to evaluate shallow ground water. Three deep monitoring wells were constructed on top of bedrock in order to evaluate the deep ground water on the site. Site hydrogeology related to tidal influences, shallow ground water, and deep ground water are discussed in separate subsections below.

### 3.3.1. Tidal Influences

Wappingers Creek discharges to the Hudson River approximately 1.5 miles downstream and is subject to the tidal influences of the river. The tidal cycle in the Hudson is approximately 6 hours between high and low tides. Fluctuations in the tide influence ground water levels beneath the site.

Although a complete tidal monitoring program was not performed, water levels (lagoon, tidal creek and ground water) were collected twice in 2002. The water levels obtained represent a period of high tide on the afternoon of December 7th and low tide on the morning of December 9th. These data are presented on Table 3-1. Elevation measurements were collected within 1 hour of each other and provide a snapshot of ground water flow beneath the site. Recorded tidal changes in the Hudson River of approximately 3 ft (www.HarborTides.com) corresponded to measured changes in Wappingers Creek of approximately 4 ft.

The results of the tidal monitoring are as follows:

- Lagoon levels did not fluctuate significantly between high and low tide measurements.

- The elevations of shallow ground water fluctuated with tidal changes in the creek. Fluctuations measured in the shallow monitoring wells ranged between 0.18 to 3.39 ft, with wells in close proximity to the tidal creek (MW-4, MW-5 and MW-8) showing the greatest change in elevations.

- The elevations of deep ground water also fluctuated with the tides. In wells located near the tidal creek (BMW-1 and BMW-3), fluctuations of 3.02 and 3.45 ft were measured. In contrast, ground water levels in BMW-2, located in the former raceway, fluctuated 1.45 ft. Unlike the other deep monitoring wells, levels in BMW-2 were higher when the tidal creek levels were lower. This is most likely a temporal effect due to lag caused by difference in material and distance from the tidal creek.

Further evaluations of tidal influences on ground water flow are included in the discussion of shallow and deep ground water below.

### 3.3.2. Shallow Ground Water

Tidal changes in Wappingers Creek clearly affect shallow ground water levels on the site (Section 3.3.1) suggesting that there is a connection between the two media (Table 3-1). Wells located adjacent to the tidal creek (MW-4, MW-5 and MW-8) are more readily influenced by the fluctuating water levels in the tidal creek. This results in localized and temporary variations in flow direction of shallow ground water.

Two shallow ground water flow maps representing high tide on December 7, 2002 and low tide on December 9, 2002 were developed based on water levels collected on those dates, and are presented on Figures 3-6 and 3-7, respectively. In both figures, ground water flow is generally towards the tidal creek. However, there is a component of flow towards the former raceway. On the MGP Site, a shallow bedrock ridge that trends approximately northeast to southwest will likely influence the flow of shallow ground water. The bedrock ridge likely results in influencing a large component of shallow ground water flow toward the northeast and southwest, parallel to the ridge.

Ground water in shallow wells adjacent to the Three Star lagoon fluctuated 1 to 2 ft between high and low tide measurements while the levels of surface water in the Three Star lagoon only fluctuated 0.05 ft during that time period (Tables 3-1 and 3-2). This suggests that the Three Star lagoon may only have a limited hydraulic connection to the shallow ground water and the tidal creek. The Three Star lagoon is more likely a surface water feature where surface runoff and storm water collects.

Shallow ground water likely interacts with the deep ground water on the site. A downward hydraulic gradient is exhibited at each of the deep wells. This gradient is also likely affected by fluctuating water levels in the tidal creek.

### 3.3.3. Deep Ground Water

Much like the shallow ground water, tidal changes in the creek discussed above clearly affect deep ground water levels on the site (Table 3.1). This suggests a connection between the tidal creek and deep ground water on the site. There were only three deep monitoring points, and as discussed above, well BMW-2, unlike the other two wells, actually showed lower water levels when the tidal creek levels were higher. The variations in well BMW-2, located further from the tidal creek than the other deep monitoring wells, created distinctly different flow patterns based on the high and low tide measurements.

Two deep ground water flow maps (presented as Figures 3-8 and 3-9) represent high tide on December 7, 2002 and low tide on December 9, 2002, respectively. The maps were based on water levels measured during those periods. Ground water flow direction during the high tide period (Figure 3-8), is generally south, but appeared to reverse during the measurements collected during the low tide (Figure 3-9). This suggests that the variation in flow direction is temporal and likely a function of lag created by differences in the influence of the creek's tidal fluctuations on the surrounding ground water. Further evaluation of deep ground water flow characteristics is not possible due to the limited data points.

# 4. Off-Site Soil Investigation Results

## 4.1. Overview

Off-site soil samples were collected from background locations in the village of Wappingers Falls (Section 4.2) and at Off-Site Location 1 (Section 4.3) located adjacent to the tidal creek (Figure 2-1). The samples collected in the village provide local background data for comparison with soil data collected at Off-Site Location 1, the Main Site, and the MGP Site. The local background data are used to evaluate potential incremental concentrations in site soil that may be related to site activities. The samples collected at Off-Site Location 1 were intended to evaluate residential soil that reportedly contains fill material that may have originated from the site.

Results of laboratory analyses are presented in tables that include comparison of detected concentrations of SVOCs and inorganics to Part 375 screening values for unrestricted uses. Complete results for off-site sample analyses are presented in Appendix F.

## 4.2. Background

Ten background locations were sampled to provide reference data to support the evaluation of the Three Star Site.

Samples of background soil contained inorganics above Part 375 screening values for unrestricted uses whereas SVOC concentrations were below Part 375 screening values for unrestricted uses (Tables 4-1 and 4-2, respectively). The occurrence of inorganics included occasional detections of arsenic, cadmium, and lead above Part 375 screening values for residential and restricted residential uses. These inorganics exceeded the Part 375 screening values for restricted residential uses at 3, 1, and 2 locations, respectively, of the 10 locations sampled. The detection of inorganics above Part 375 screening values for unrestricted was more frequent and included copper, mercury, and zinc, in addition to the inorganics cited above. Ubiquitous levels of lead, mercury, and zinc were generally above Part 375 screening values for unrestricted uses.

The soil that was investigated generally did not contain unusual visual appearance or odors, except in the sample collected from Temple Park at location SS-BK2 (Figure 2-1). At that location, odors and a PID level of 1 ppm were observed. The presence of odors and detected PID readings in the soil samples collected at background location SS-BK2 were not quantified from SVOC analyses, suggesting the presence of other constituents that were not analyzed. Possibly VOCs are present in that soil. During the investigation, a resident at 106 Market Street noted that a spill of oil may have occurred nearby. Therefore, VOCs from that spill represent a source unrelated to the Three Star Site which may impact the soil at that location.

In general, local background soil concentrations of SVOCs and inorganics were within ranges expected in an urban environment, although levels of some inorganics were above Part 375 screening values for unrestricted or residential uses (Appendix G). The SVOCs detected in the soil were primarily made up of PAHs at concentrations below Part 375 screening values for unrestricted uses.

## 4.3. Off-Site Location 1

Soil samples were also collected from two locations at Off-Site Location 1 to evaluate the soil for evidence of potentially contaminated fill material on this property.

Similar to results of background soil samples, inorganics were detected above Part 375 screening values for unrestricted uses and SVOCs were below Part 375 screening values for unrestricted uses (Tables 4-1 and 4-2). The detection of inorganics included cadmium and mercury at concentrations above background levels and Part 375 screening values for restricted residential uses. The detection of copper exceeded Part 375 screening values for unrestricted uses, ranging from 61 to 204 mg/Kg, with three of the four samples also exceeding the maximum background level of 79 mg/Kg. The maximum concentration of zinc also exceeded background levels. Otherwise, the levels of inorganics were similar to background, with ubiquitous levels of lead, mercury, and zinc above Part 375 screening values for unrestricted uses and lead occasionally exceeding Part 375 screening values for residential uses. Therefore, the soil data indicate that Off-Site Location 1 may be impacted by heavy metals.

SVOC TICs were also reported in laboratory reports.

# 5. Main Site – Investigation Results

## 5.1. Overview

The features of the Main Site and the sample locations are identified on the site map (Figure 2-1). Individual areas within the Main Site were evaluated as previously described in Section 1.6. Results of the investigation of the Main Site are presented in the four sections listed below:

- Surface soil and shallow soil data are presented in Section 5.2.
- Subsurface soil data are presented in Section 5.3.
- Ground water data are presented in Section 5.4.
- Three Star lagoon data are presented in Section 5.5.

The presentation of analytical results for each of the media is based on comparison to NYSDEC screening values. Each of the data results sections (Sections 5.2 through 5.5) presents the analytical results analyses for VOCs, SVOCs, inorganics, and associated supplementary parameters. In Section 5.6, the results of qualitative human health and ecological exposure assessments are presented. A discussion of the data is provided in Section 5.7.

Pesticides and PCBs were also analyzed in a subset of samples of ground water, soil, and lagoon sediment (Appendix F). The concentrations of these compounds in soil were generally below screening values, except for the detection of DDT and related compounds (DDE and DDD), and one detection of PCBs (Aroclor 1260) above the screening values for unrestricted uses (Table 5-1, Appendix F). The PCBs were detected at 0.2 mg/Kg in one surface soil collected from the lower raceway (SS-01). The detection of pesticides and PCBs in soil was below the Part 375 screening values for commercial uses. PCB/pesticides were not detected in ground water (Appendix F). Results were similar for the MGP Site (Section 6.1). The detection of these constituents in soil did not suggest that the Three Star Site was a source for these compounds and subsequent evaluation was focused on site related constituents.

## 5.2. Surface and Shallow Soil

Surface soil samples were collected to represent the 0- to 2-inch interval and, at some of the locations, shallow soil samples were also collected, generally from the 0- to 2-ft interval. Analytical data for surface soil are provided in Tables 5-2 through 5-4. Detected concentrations of VOCs, SVOCs, and inorganics in surface soil are compared to Part 375 screening values in Figure 5-1. TOC and percent solids data are presented in each of the tables summarizing the other constituents analyzed. TOC levels in surface and shallow soil ranged from non-detectable to 12 percent. Solids ranged from 47 to 96 percent. A brief summary of the constituents detected in surface soil is provided below.

Samples from most of the sixteen locations on the Main Site contained constituents in surface soil above Part 375 screening values for unrestricted uses consisting primarily of inorganics and occasional detections of PAHs and VOCs (Figure 5-1). In addition, localized areas contained constituents above Part 375 screening values for commercial uses as summarized below:

- The lower raceway (SS-01) contained the some of the highest levels of inorganics detected. Chromium, copper lead, nickel, and cyanide were detected at 6,260; 2,140; 1,100; 603; and 94 mg/Kg, respectively.
- Adjacent to Buildings 16 and 17, constituents were detected above Part 375 screening values for commercial uses at MW-1, SS-06, and MW-07. At MW-1, PAHs consisting of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene were detected at 15, 12, 18, and 1.4 mg/Kg. At SS-06 (surface) and MW-07 (0 to 0.5 ft), copper was detected at 611 and 483 mg/Kg, respectively. At SS-06 (surface), cadmium was also detected at 36 mg/Kg.
- In the drywell area south of the Axton-Cross Building (SS-10, 1 to 1.2 ft), mercury was detected at 31 mg/Kg.
- Behind the Axton-Cross Building near the suspected drain holes (SS-11, surface), nickel was detected at 2,310 mg/Kg.
- In shallow soil, concentrations of cadmium and PAHs were detected at concentrations slightly above Part 375 screening values for commercial uses adjacent to Building 16 (SS-04) and adjacent to Building 12 (SS-17), respectively.

Visual inspection of the soil in the field revealed that the shallow soil generally consisted of coarse to fine sand with various amounts of medium to fine gravel, silt, and fill material including brick, cinder, and glass fragments. Observations of staining or odors were observed at three of the locations. A slight petroleum odor was observed in surface soil samples that were collected in the vicinity of ASTs adjacent to Buildings 21 and 22 (SS-07 and SS-08), and the sample located near the UST in the Building 12 Area (SS-17). The ground surface and a concrete retaining wall were stained with petroleum in the vicinity of one of the ASTs (SS-08). Shallow soil at the remaining surface soil sampling locations did not exhibit visual evidence of contamination or odors.

Additional details of the analytical data for surface soil are provided below:

Volatile Organic Compounds

In general, total VOC concentrations ranged from less than 0.01 to 0.5 mg/Kg in surface and shallow soil (Table 5-2) and were below Part 375 screening values for unrestricted uses. However, the total VOC concentration in shallow soil samples collected from behind the Axton-Cross Building (SS-11, 0 to 2 ft) and adjacent to Building 17 (MW-1, 0.5 to 2.5 ft) were exceptions, with PCE and TCE detected slightly above Part 375 screening values for unrestricted uses (Figure 5-1).

Samples collected from the other areas (Building 21/22, former raceway, and Building 12) of the Main Site were below Part 375 screening values. VOC TICs were also identified in laboratory reports.

Semivolatile Organic Compounds

SVOCs detected in surface soil generally consisted of primarily PAHs at levels below Part 375 screening values with a few exceptions (Table 5-3). Total PAH concentrations in surface soils were typically within background levels and ranged from 0.5 to approximately 7 mg/Kg. However, in addition to the PAHs detected adjacent to Building 17 (MW-1), as noted above, PAHs were also detected a concentrations similar to Part 375 screening values for commercial uses adjacent to Building 12 (SS-17) where 1.3 mg/Kg of benzo(a)pyrene was detected (Table 5-4). PAHs were also detected above Part 375 screening values for unrestricted uses behind Building 16 (MW-7) and in the drywell area adjacent to the Axton-Cross Building (SS-10). SVOC TICs were also identified in laboratory reports likely attributable to cinders and ashes observed in the fill.

Inorganics
In addition to the specific areas with concentrations of inorganics detected above Part 375 screening values for commercial uses, the detection of inorganics above Part 375 screening values for unrestricted uses was widespread (Table 5-5, Figure 5-1). Eight inorganics consisting of cadmium, chromium, copper, lead, mercury, nickel, zinc, and cyanide were detected above Part 375 screening values for unrestricted uses. Antimony was detected above background and reference values.

## 5.3. Subsurface Soil

Subsurface soil investigations consisting of soil borings/wells and test pit excavations are discussed in separate sections below (Sections 5.3.1 and 5.3.2, respectively). Analytical results for subsurface soil are presented in Section 5.3.3. Deep monitoring wells BMW-2 and BMW-3 were completed on the Main Site to the top of bedrock.

### 5.3.1. Borings and Wells

During drilling for monitoring wells and soil borings on the Main Site, soil samples were visually logged and screened in the field using a handheld PID. Observations obtained during soil boring activities are presented in Table 5-6. In general, PID measurements indicative of VOCs in soil were above background from each area of the Three Star site, except the Building 12 Area (Table 5-6). Other observations are listed below:

- The highest concentration was detected in the vicinity of the Axton-Cross Building where readings up to 1,200 ppm (MW-9), a heavy sheen, and BTEX odors were observed.
- In the former raceway, black stained soils with coal tar odors were observed in the west portion of the former raceway (MW-11, and BMW-2). Observations of soil from those borings included brick and asphalt fragments (MW-11), tarry silt and clay (BMW-2, 6 ft bgs). Soil with a slight "ammonia" odor was observed in the upper raceway (MW-13).
- A moderate petroleum odor was observed in the loading dock of Building 21 near ASTs (MW-10).

Deeper soil encountered in the former raceway (BMW-2) and adjacent to the tidal creek (BMW-3) showed no signs of contamination.

### 5.3.2. Test Pits

The four shallow test pits completed in the Main Site (Test Pits TP-7, TP-8, TP-9, and TP-10 on Figure 2-2) helped characterize the spatial distribution of fill material and the general overburden characteristics. As illustrated on Figure 2-2, the four test pits were completed along the north side of the facility (south side of the tidal creek).

Test pits TP-7 and TP-8 were completed near the former Axton-Cross building. In particular, TP-7 was located in a grassy area approximately 20 ft east-northeast of an UST identified adjacent to the northeast corner of the Axton-Cross building. Fill material, overlain by a thin layer of topsoil, was encountered in both TP-7 and TP-8 from grade to a depth of approximately 6.5 to 7.0 ft below grade.

Shallow test pits TP-9 and TP-10 were completed in paved areas of the site and encountered considerable amounts of fill material from grade to approximately 5 and 10 ft below grade, respectively. The fill material contained an abundance of brick and concrete fragments. Both TP-9

and TP-10 were bordered to one side by brick walls that may be ruins of buildings that were formerly located there. Saturated conditions were not reached in TP-9, but were encountered in TP-10 at a depth of approximately 10.5 ft below grade. Saturated soil and ground water encountered in TP-10 was black. A sheen and a petroleum odor were also noted. Field screening using a hand held PID did not detect VOCs in the air headspace above soil samples collected from test pits completed in the Main Site.

A total of six composite soil samples collected from test pits completed in the Main Site were submitted for laboratory analysis. Samples for laboratory analysis were selected based on test pit stratigraphy, evidence of possible contamination, and degree of saturation.

### 5.3.3. Analytical Results

Subsurface soil data are presented in Tables 5-7 through 5-9. Detected concentrations of VOCs, SVOCs, and inorganics in subsurface soil above Part 375 screening values for unrestricted uses are presented in Figure 5-2. TOC concentrations in subsurface soil ranged from less than 0.1 to 25%. TOC data are presented in each of the tables summarizing the other constituents analyzed.

The occurrence of constituents in subsurface soil above Part 375 screening values for unrestricted uses was common, consisting primarily of inorganics with occasional detection of VOCs and PAHs. Inorganics were also detected at concentrations that were above Part 375 screening values for commercial uses primarily in the lower raceway and adjacent to the Axton-Cross Building, although across the Main Site arsenic was detected sporadically:

- The lower raceway (MW-11) contained arsenic, mercury, and PAHs above Part 375 screening values for commercial uses. Mercury was detected at 41 and 16 mg/Kg in the 16 to 18 ft and 20 to 22 ft depth intervals, respectively. Arsenic was detected in the 16 to 18 ft interval at 55 mg/Kg. Total PAHs were detected at 181 mg/Kg including benzo(a)pyrene at 1.7 mg/Kg, slightly above the Part 375 screening value for commercial uses.
- Adjacent to the Axton Cross Building (SB-3-02, 10 to 12 ft), arsenic, copper, lead and PAHs were detected above Part 375 screening values for commercial uses (Table 5-4). Arsenic, copper, and lead were detected at 17, 653 and 2,860 mg/Kg, respectively. Total PAHs were detected at 81 mg/Kg including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene above Part 375 screening values for commercial uses.
- In addition, arsenic was detected above Part 375 screening values for commercial uses at MW-8 (2 to 4 ft and 8 to 10 ft) and SB-16 (8 to 10 ft), TP-10 (4 to 6 ft and 7 to 9 ft), and BMW-2 (10 to 12 ft). At those locations, arsenic concentrations ranged from 27 to 52 mg/Kg.

In subsurface soil samples collected for the SRI, nickel and arsenic were detected at concentrations above Part 375 screening values for commercial uses between Buildings 16 and 15 (MW-15, 10 to 12 ft), at 1,510 and 20 mg/Kg, respectively (Figure 5-2). Further discussion of the SRI results is presented in the SRI Report (O'Brien & Gere 2007).

Additional details of the analytical data for subsurface soil are provided below:

**Volatile Organic Compounds**

Most of the VOC concentrations were below Part 375 screening values for unrestricted uses, with total VOCs generally less than 1.5 mg/Kg (Table 5-7). However, the detection of total VOCs at 280 mg/Kg in the drywell area of the Axton-Cross Building (MW-9, 10 to 12 ft) is noteworthy. At that location, the detected VOCs consisted primarily of PCE, TCE, and xylene at 140, 49, and 64 mg/Kg,

respectively. Elsewhere on the Main Site, acetone was the most common VOC detected above Part 375 screening values for unrestricted uses with concentrations ranging from 0.007 to 0.32 mg/Kg at three locations consisting of MW-6, MW-7, and MW-10. Other VOCs detected at concentrations slightly above Part 375 screening values for unrestricted uses consisted of vinyl chloride (MW-6, SB-16) and cDCE (SB-16).

**Semi-Volatile Organic Compounds**

The SVOCs in subsurface soil primarily consisted of PAHs with concentrations ranging from less than 0.1 to 6.2 mg/Kg, which is similar to background levels in surface soil (Table 5-8). The concentrations of PAHs were generally below Part 375 screening values for unrestricted uses, except as discussed above.

**Inorganics**

In addition to the specific areas with concentrations of inorganics detected above Part 375 screening values for commercial uses, the detection of inorganics in subsurface soil above Part 375 screening values for unrestricted uses was widespread (Table 5-9, Figure 5-2).

Similar to the surface soil results, eight inorganics consisting of cadmium, chromium, copper, lead, mercury, nickel, zinc, and cyanide were detected above Part 375 screening values for unrestricted uses. In addition, arsenic was also detected above Part 375 screening values for unrestricted uses. Mercury, chromium, and nickel were the most prevalent inorganics detected above Part 375 screening levels for unrestricted uses. Soil obtained within the saturated overburden layer below the ground water table from the upper raceway (MW-11, 16 to 18 ft) contained the highest concentrations detected in subsurface soil from the Main Site of antimony, arsenic, mercury, and zinc. The concentrations of these inorganics were 377, 55, 41, and 671 mg/Kg, respectively.

## 5.4. Ground Water

Field observations are summarized in Section 5.4.1. Analytical data are presented in Sections 5.4.2 through 5.4.4. Detected concentrations in ground water compared to TOGS screening values are presented in Tables 5-10 through 5-16. A summary of constituents detected above TOGS screening values is also presented (Figure 5-3). The analytical results for ground water include separate discussions of shallow and deep ground water data.

### 5.4.1. Field Observations

During ground water sampling on the Main Site, field observations including color and odor were noted. While purging each well, pH, temperature, conductivity, and turbidity were measured. Temperatures ranged from approximately 8 (December 2002) to approximately 12 (May 2001) degrees Celsius. Field measurements for pH ranged from 6.5 to 7.5 except at MW-12. At that location, the pH was approximately 12.5 and a distinct ammonia-like odor was noted in the soil, which may be the reason for the elevated pH. Conductivity measurements ranged from approximately 0.35 to 2.5 mS/cm with the highest readings detected in BMW-3 and MW-13. In the majority of the wells the turbidity of the ground water remained high during sampling due to the fine-grained material within the soil. Field measurements of DO, salinity, and ORP collected in May 2001 are reported on the field logs (Appendix B).

Field data collected from the monitoring wells is summarized below.

*Field Data Collected from Monitoring Wells*

| Monitoring well | Appearance | Odor | Turbidity (NTU) |
|---|---|---|---|
| MW-6 | sheen | sweet odor | >1000 |
| MW-7 | sheen | --- | --- |
| MW-9 | heavy sheen | strong "oil like" odor | >1000 |
| MW-10 | --- | slight fuel odor | --- |
| MW-11 | black | minor oily odor | --- |
| MW-12 | --- | --- | --- |
| MW-13 | --- | --- | --- |

Notes:
DL = detection limit; ppm = parts per million; --- = no data.

Field data for the investigation of ground water are provided in Appendix B.

### 5.4.2. Volatile Organic Compounds

Shallow and deep ground water contained VOCs at concentrations above screening values with total VOC concentrations generally ranging from 5 µg/L to 56 µg/L in shallow ground water (Table 5-10) and 5 to 90 µg/L in deep ground water (Table 5-11). However, concentrations of VOCs exceeded these ranges in the vicinity of the Axton-Cross Building and the Building 15/16/17 Area, as summarized below:

- Within the former drywell area south of the Axton-Cross Building (MW-9), the total VOCs were 20,609 µg/L and the primary compounds detected were chlorinated VOCs and BTEX at 10,800 and 8,400 µg/L, respectively. The chlorinated VOCs consisted of primarily PCE and TCE at 7,900, and 2,900 µg/L, respectively. The prominent BTEX compounds were xylene and ethylbenzene
- Next to Building 17 (MW-1), total VOCs were 157 µg/L consisting primarily of chlorinated VOCs.

VOCs were below screening values in shallow ground water collected from the upper raceway (MW-11) and next to the creek in the Building 12 Area (MW-8) (Table 5-10).

The VOC concentrations in deep ground water were variable (Table 5-11). In the former raceway (BMW-2), the total VOCs primarily consisted of BTEX compounds at concentrations below screening values. In deep ground water collected next to the creek (BMW-3), the total VOCs were 90 µg/L and the principle compounds detected were CB and benzene at 34 and 4 µg/L, respectively. In addition, deep ground water sampled on the MGP Site (BMW-1) contained total VOCs at 44 µg/L with chlorinated VOCs at 36 µg/L including cis-1,2-DCE as the principle compound at 26 µg/L. In addition, benzene was present in that well at approximately 3 µg/L (Section 6.4).

VOC TICs were also detected in ground water, as identified in the laboratory reports.

### 5.4.3. Semivolatile Organic Compounds

Shallow ground water beneath the Main Site contains SVOCs above water quality standards (Table 5-12), but deep ground water was within the standards (Table 5-13).

*Shallow Ground Water*

In general, total SVOCs in shallow ground water ranged from less than 5 µg/L to 12 µg/L (Table 5-12). However, two wells, one in the vicinity of the Axton-Cross Building (MW-9) and the other in the lower raceway (MW-11), contained total SVOCs over 150 µg/L. Semivolatile organic compounds were detected at concentrations above screening values in five of the wells:

- Axton-Cross Area. In the drywell area south of the Axton-Cross Building (MW-9), the total SVOCs were present in shallow ground at 192 µg/L with the principle compound detected as 1,2-dichlorobenzene (1,2-DCB) at 170 µg/L. Other compounds above screening values consisted of 1,4-DCB and 2,4-dimethylphenol at estimated concentrations of 13 µg/L and 6 µg/L, respectively.

- Former Raceway. In the upper raceway (MW-13) total phenol was detected in shallow ground water at 11 µg/L. In the lower raceway (MW-11), naphthalene was present at 160 µg/L compared to the screening value of 10 µg/L for this compound.

- Building 15/16/17 Area. Next to Building 17 (MW-1), the concentration of 1,2-DCB was 4 µg/L and exceeded the screening value of 3 µg/L in 2001. In 2002, phenol was also detected at 2 µg/L, a concentration twice the 1 µg/L ground water standard for that compound.

- Building 21/22 Area. In shallow ground water next to Building 21 (MW-6), SVOCs were below ground water standards in 2001. In 2002, total PAHs were detected at 12 µg/L. Concentrations of individual PAH compounds ranged from 1 to 3 µg/L. Three PAH compounds exceeded their respective guidance value of 0.002 µg/L.

TICs for SVOCs were identified in laboratory reports.

*Deep Ground Water*

Deep ground water beneath the former raceway (BMW-2) contained naphthalene at 9 µg/L (Table 5-13). Naphthalene was also present in deep ground water beneath the MGP Site (BMW-1) at 77 µg/L (Section 6.4) compared to the screening value of 10 µg/L. Other SVOCs were not present above screening values in deep ground water.

### 5.4.4. Inorganics

Inorganic concentrations are summarized in Tables 5-14 and 5-15. Concentrations that exceeded screening values are discussed below. Iron, manganese, and sodium in ground water above water quality standards often occurs naturally due to local geology. Therefore, the occurrence of these elements above ground water standards is not discussed further.

During ground water sampling events completed in 2001 and 2002 for the Site RI, inorganics detected in ground water were generally within water quality standards (Tables 5-14 and 5-15), except for specific areas that are summarized below.

- Axton-Cross Area. Inorganics in the Axton-Cross Area were within the water quality standards (Figure 5-3, Tables 5-14 and 5-15).

- Building 21/22 Area. Arsenic, chromium, and lead were above water quality standards in shallow ground water the loading dock area of Building 21 (MW-10) at concentrations of approximately 2, 3, and 10 times the standards, respectively (Figure 5-3, Tables 5-14 and 5-15).

- Former Raceway. Shallow ground water in each of the wells within the former raceway contained up to 13 metals and cyanide above water quality standards (Figure 5-3, Tables 5-14 and 5-15). The widest range of constituents and highest concentrations were detected in the shallow ground water under the upper raceway (MW-11) including concentrations of antimony, lead, and mercury at over 200 times the standards. The deeper ground water in this_area (BMW-2) contained seven inorganics above water quality standards including antimony and mercury concentrations over 25 times the standards.

- Building 15/l6/17 Area. Shallow ground water from between Buildings 15 and 16 (MW-12) contained antimony, arsenic, chromium, and lead concentrations approximately 1.2, 1.2, 1.4, and 3 times the standards, respectively (Figure 5-3, Tables 5-14 and 5-15).

- Building 12 Area. In deep ground water adjacent to the creek (BMW-3), ten inorganics were at concentrations above standards (Figure 5-3, Tables 5-14 and 5-15). Some of the highest concentrations of inorganics were detected, with arsenic, lead, and thallium at concentrations that were over 20 times the water quality standards.

In ground water sampling events completed in 2006 for the SRI, elevated concentrations of inorganics were detected in ground water in the vicinity of the vats (Figure 5-3). The SRI data is discussed further in the SRI Report (O'Brien & Gere 2007c).

Turbidity can influence the concentrations of inorganics detected in ground water. In ground water, higher levels of turbidity tend to be associated with elevated levels of suspended solids and inorganics.

## 5.5. Lagoon Investigation

Physical features of the lagoon were observed during field reconnaissance activities. The surface area of the lagoon was measured to be approximately 200 ft by 40 ft. A black sediment layer was identified along the mid-section of the Three Star lagoon ranging from approximately 4 to 11.5 ft thick (Figure 5-4) with a consistency like pudding. Water depth along the midsection of the Three Star lagoon ranged from approximately 4 to 7.5 ft. During field activities, inflow and outflow pathways were dry, suggesting the water observed in the Three Star lagoon may be accumulated from intermittent storm water sources. Ground water interaction may also contribute, although water level monitoring of the surface water of the Three Star lagoon indicated only minor fluctuations associated with tide cycling (Section 3.3.1). Field observations of the Three Star lagoon are presented in Appendix C. Tables presenting analytical results of VOC, SVOC, and inorganics analyses of surface

water and sediment samples collected from the Three Star lagoon are presented in Appendix F. Concentrations of constituents detected in surface water and sediment are discussed in separate sections below.

### 5.5.1. Surface Water

Surface water sampling was completed in the center of the lagoon.
Field and laboratory analytical data are summarized below. Field data were within expected ranges:

*Results of field analyses of surface water*

| Parameter | Units | Result |
|---|---|---|
| pH | | 6.9 |
| Conductivity | μsem/cm | 0.36 |
| Temperature | Deg C | 5.8 |
| Dissolved oxygen | mg/L | 7.4 |
| Salinity | mg/L | 0.1 |

Source: O'Brien & Gere Engineers, Inc.

Field logs present raw data collected for the surface water investigation of the lagoon (Appendix C).

Laboratory data for the analysis of surface water is discussed below. Surface water concentrations detected in the lagoon were compared to TOGS screening values for Class C waters (Section 2.6.2). The comparison of the surface water data from the lagoon to TOGS screening values intended for the protection of surface water bodies is a conservative approach and does not represent the anticipated uses of the Three Star lagoon.

The concentrations of inorganics detected in surface water of the Three Star lagoon were similar to background levels detected in Wappingers Creek. Aluminum, iron, and silver comprised the inorganics detected at concentrations above the TOGS screening values for surface water quality (Table 5-16). Aluminum and iron were only slightly above the TOGS screening values with aluminum and iron concentrations of 194 and 318 μg/L, respectively, compared to the TOGS screening values for propagation of fish of 100 and 300 μg/L, respectively (Table 5-16). Silver was detected at 1.6 μg/L. The concentration of total silver detected in the surface water of the Three Star lagoon exceeded the TOGS screening value of 0.1 μg/L for propagation of fish exposed to ionic silver. There is uncertainty in the application of the screening value for ionic silver, which is a component of silver concentrations measured analytically as total silver. The concentrations of aluminum, iron, and silver detected in the surface water of the Three Star lagoon were below the maximum background levels detected in Wappingers Lake during a storm event (O'Brien & Gere 2007).

Other constituents were within TOGS screening values or within levels indicative of acceptable water quality:

- Concentrations of VOCs in the surface water of the lagoon were not detected above TOGS screening values (Table 5-16). TCE, at 0.6 μg/L, was the only VOC detected in surface water; this level of TCE is below the TOGS screening value of 5 μg/L for human consumption of surface water.

- SVOCs were not detected in the surface water of the lagoon (Table 5-16).

- Dissolved organic carbon and total suspended solids concentrations were <4.4 and <5.0 mg/L, respectively. Hardness and total alkalinity concentrations were 140 and 110 mg/L, respectively.

### 5.5.2. Sediment

Detected concentrations in lagoon sediment compared to sediment screening values are presented in Tables 5-17 through 5-19. Comparison of lagoon sediment data to ecological screening values for protection of fish may not be appropriate as the Three Star lagoon does not provide an environment suitable for this use because of its frequent hydraulic isolation from the tidal creek. However, the comparison does provide a benchmark to judge the potential impacts of sediment migration from the Three Star lagoon, should it occur.

Sediment data were evaluated using NYS screening approach with total concentrations of organic compounds adjusted for TOC (Section 2.6.3). TOC data are presented with the summaries of the detected concentrations in sediment (Tables 5-17 through 5-19). Tables presenting sediment data from the lagoon are provided in Appendix F. A brief summary of the detected concentrations in sediment of the lagoon is provided below:

Volatile Organic Compounds

The total VOC concentrations ranged from 0.9 to 273 mg/Kg. Total BTEX concentrations ranged from 0.2 to 143 mg/Kg (Table 5-17). Chlorinated VOCs ranged from 0.5 to 130 mg/Kg. CB, ethylbenzene, xylene, methylene chloride, acetone, and cDCE were detected above the NYSDEC screening values for sediment.

The primary VOCs present consist of xylene and CB with concentrations identified up to 140 and 130 mg/Kg, respectively (Table 5-17). Samples LG-4L (3 to 6 ft interval) and LG-7M (2 to 3 ft interval) contained the highest VOC concentrations, with total VOC concentrations of 240 and 270 mg/Kg, respectively. At LG-7L (3 to 3.5 ft interval), in the northern end of the lagoon, the highest number of VOCs was detected; but the total VOC concentration at that location, 0.9 mg/Kg, was among the lowest detected in the sediment of the Three Star lagoon. VOC TICs were also detected in lagoon sediment, as identified in laboratory reports.

Semivolatile Organic Compounds

The total SVOC and total PAH concentrations ranged from 36 to 227 mg/Kg, and 3 to 88 mg/Kg, respectively (Table 5-18). The maximum concentrations for both total SVOCs and total PAHs were detected at location LG03UP. The primary SVOC detected consists of 1,4-DCB which was detected in each of the seven samples collected above the NYSDEC screening value for sediment. Location LG-4U (0 to 3 ft interval) contained the maximum 1,4-DCB concentration of 51 mg/Kg. Location LG-7L (3 to 3.5 ft interval) contained the largest number of SVOCs detected in excess of sediment screening values. At that location, total SVOC and total PAH concentrations of 71 and 65 mg/Kg, respectively were detected. Several individual PAHs exceeded sediment screening values (Table 5-18). BEHP was also detected above its sediment screening value in four of the seven sediment sampled collected from the Three Star lagoon. Other SVOCs detected above sediment less frequently than the SVOCs discussed above consisted of 1,2-DCB, 1,3-DCB, 2-4-dimethylphenol, and phenol. SVOC TICs were also detected in lagoon sediment, as identified in laboratory reports.

Inorganics

Inorganic concentrations above the severe effect level (SEL) screening value for sediment (Table 5-19) consisted of cadmium, chromium, copper, iron, lead, mercury, nickel, silver, and zinc. Cyanide

was also detected above the screening value of Eisler (1991). The maximum concentrations of these constituents compared to the respective screening values are summarized below:

*Maximum concentrations of inorganics compared to screening values .for sediment (mg/Kg).*

| ***Inorganic Analyte*** | ***Screening Value*** | ***Max. Conc*** |
|---|---|---|
| Cadmium | 9.0 S | 122 |
| Chromium | 110 S | 26,300 |
| Copper | 110 S | 10,600 |
| Iron | 4% | 4.6% |
| Lead | 110 S | 9,650 |
| Mercury | 1.3 S | 54 |
| Nickel | 50 S | 3,890 |
| Silver | 2.2 | 2.9 |
| Zinc | 270 S | 3,710 |
| Cyanide | 0.1 E | 69 |

References:
S = Severe effect level (Long & Morgan 1990; Persuad 1992)
E = Eisler (1991)

Source: O'Brien & Gere Engineers, Inc.

Pesticides/PCBs
Pesticides were detected in one of two samples analyzed for pesticides/PCBs. The levels of DDT, Endosulfan II, Heptachlor epoxide, and chlordane were above sediment screening values (Table 5-20). PCBs were not detected in either of the two samples (Appendix F).

TCLP
Results of TCLP analysis of a lagoon sediment sample LG03 MID (1.5 to 3.0 ft interval, Table 5-21) did not identify concentrations above those that would characterize the sediment as hazardous waste as defined by 6 NYCRR Part 371 and 40 CFR Part 261.

Particle Size Distribution and Bulk Density
The sediment collected from the Three Star lagoon consists of primarily sand making up approximately 50 to 60% of the sediment by weight (Appendix C). The upper layer of sediment also contained silt and gravel consisting of approximately 40% and 10% of the sediment, respectively. The lower layer of sediment contained roughly equal portions of silt and gravel. The dry and wet bulk densities in upper sediment were approximately 20% and 70%, respectively (Appendix C).

## 5.6. Exposure Assessment

Risk assessment activities completed for the RI consisted of an Exposure Pathway Analysis describing potential human contact with site media (Section 5.6.1, Appendix H) and a Fish and Wildlife Impact Analysis describing potential wildlife contact with site media (Section 5.6.2, Appendix E).

### 5.6.1. Exposure Pathway Analysis

A qualitative exposure pathway analysis was performed to evaluate the potential for human contact with site constituents (Appendix H). Surface soil contact and inhalation of ambient and indoor air are the most likely exposure routes.

For the most part, contact with surface soils or inhalation of ambient air is expected to be similar to background levels which represent a low level risk. Most of the Main Site is occupied by buildings, ruins of buildings, or covered by pavement or gravel parking areas preventing contact with surface soil. In general, the concentrations of constituents in surface soil were similar to local background levels, except in specific areas of the site. Those specific areas, such as the former raceway, represent areas of higher potential for exposures, if they are accessed. The debris left from the fire of May 2004 may increase the potential exposure to contaminated surface materials.

The highest potential for exposure to site constituents present in subsurface media is through inhalation of indoor air that contains VOCs. VOCs can be pulled into buildings by the buildings ventilation system. Long-term exposures to VOCs in indoor air may be a health concern for workers or possible future residents of buildings on the site. The Three Star Site is downgradient from other areas of the village and is therefore not expected to affect off-site properties. Interior surfaces of existing buildings may also contain industrial residuals, if they have not been properly cleaned. Cleaning of interior surfaces can reduce that potential pathway. Subsurface excavations can provide a pathway for construction/utility workers to contact site constituents. Protective measures (*e.g.* protective clothing and gloves) can be used to reduce potential contact of these workers.

The primary pathways for potential exposure to site constituents in the Three Star lagoon and the tidal creek are from ingestion of or dermal contact with sediment. Sediment of the lagoon and the tidal creek contain elevated levels of PAHs and inorganics. Surface water was similar to background levels detected in Wappingers Lake, upstream of the Three Star Site.

### 5.6.2. Fish and Wildlife Impact Analysis

The FWIA was completed through Step IIC which is a screening level ecological risk assessment (Appendix E). The screening level risk assessment evaluates potential exposure to surface soil, and lagoon sediment and surface water using ecological screening values. Ecological screening considers representative wildlife species that may be present compared to conservative screening values. Representative wildlife species considered in the ecological assessment consisted of the American robin and the short tailed shrew to evaluate soil contact and the great blue heron and the mink to evaluate contact with the lagoon. The results of the ecological screening indicate that inorganics represent the most common constituent of potential ecological concern (COPEC) among the representative wildlife species (Appendix E). PAHs and PCBs (Aroclor 1260) were also indicated as COPEC, however the occurrence of those constituents on the Main Site is limited (Appendix E). For the most part, the Main Site consists of buildings and paved parking areas and represents poor quality habitat that is not expected to be particularly attractive to wildlife.

## 5.7. Discussion

The discussion provided below focuses on the isolation and characterization of the source areas at the site. Initially, ground water data was used to identify overall spatial patterns of constituents and locate areas for in-depth evaluation of site soil and lagoon sediment data. These data provide further

detail to support the evaluation of potential source areas that may be contributing to the ground water conditions that were observed. Source identification was aided by an interpretation of possible relationships between organic compounds and their fate in the environment. Evaluation of the vertical extent of constituents in soils and ground water flow direction were used to support the inferences of source migration pathways drawn from the data.

The data suggests that there are at least four different classes of organic compounds in site subsurface media consisting of PCE, TCA, DCB and BTEX. These four unrelated compounds or classes of compounds that were identified as constituents in ground water and site soils represent different sources (Section 1.3.1). The discussion of potential source areas that follows focuses the evaluation of VOC sources by interpreting spatial trends of parent compounds as compound groups.

In general, the analytical data suggest that the drywell and former drum storage area south of the Axton-Cross Building is the primary source for organic compounds and that the former raceway appears to be the primary source area for inorganics. In addition, several other relatively minor sources of organic compounds were also detected on the Three Star Site. The Axton-Cross Area and former raceway are discussed below as the primary source areas. Following their discussion, the other VOC sources detected at the Three Star Site are discussed.

Axton-Cross Area

The data indicates that potential sources consist of the dry well and former drum storage area located south of the building, and the suspected drain holes on the west side of the building. Specifically, VOCs associated with PCE, DCB, and BTEX were found to be present in both the ground water and the soil in the vicinity of the dry well. Elevated concentrations of chromium, copper and mercury were present in shallow soil in this area as well. The vertical extent of the impacts appear to be limited to a maximum of between 12 and 16 ft below grade as the sample of soil collected from the 16 to 18 ft interval did not contain concentrations that were significantly elevated.

Although ground water samples were not collected from the west side of the building in the vicinity of suspected drain holes, soil data indicate the presence of elevated concentrations of chlorinated VOCs (predominantly PCE) within the shallow soil in this area as well as nickel, chromium, copper and mercury. Lead was also found to be elevated at depth (10 to 12 ft) within the soil on this side of the building. The proximity of this area to the lagoon suggests the potential for migration of these constituents via surface runoff and ground water to this surface water body.

Former Raceway

In general, VOCs were not detected at significant concentrations within the ground water and soil within the raceway, with the exception of naphthalene. Naphthalene was detected at 160 µg/L in shallow ground water at MW-11 located in the upper raceway. Several PAHs and naphthalene were detected in the soil from this area as well. Naphthalene was not detected in significant concentrations in ground water in other areas of the Main Site, which suggests that there may have been some discharge of these materials to the former raceway.

Inorganics were detected to be at significant concentrations in the shallow and deep ground water beneath the former raceway. A total of 13 metals and cyanide were analyzed for during the program. Each of these constituents were identified at concentrations above the water quality standard in the shallow ground water at well MW-11 and nine were detected in ground water at MW-13 located on the upper raceway. In addition, seven of these constituents were identified in the deep ground water. This suggests that there was discharge of inorganics to the subsurface soil.

In soil samples analyzed from the deep soil boring located in the former raceway (BMW-2) concentrations of inorganics were not significantly elevated at depths of 22 ft and below that were sampled. However, surface soil sample SS-1 collected from the lower raceway contained a number of elevated concentrations of inorganics, particularly cadmium, chromium, copper, lead, mercury, nickel and zinc. Subsurface soils collected between 4 and 22 ft (MW-11 and BMW-2) also contained elevated levels of inorganics. These data indicate that inorganics were discharged to the raceway area. It is not clear, however, whether the material was discharged in soluble form or if a layer of sludge or other material is present within the former raceway that continues to be a source to ground water.

It should be noted that the deep ground water from well BMW-3 located along the creek to the northeast of BMW-2 also contained elevated concentrations of arsenic, chromium, copper, lead, nickel and thallium. It is not clear from the data whether the presence of these constituents are directly related to those detected beneath the former raceway, or, as discussed in the SRI Report (O'Brien & Gere 20007c), the vats. However, metals were not detected in any significant concentration in shallow groundwater in other areas of the Main Site. Therefore, another potential source has not been identified. The mechanism for the vertical migration of inorganics to the deep ground water is not known and it may not be currently active.

Building 15/16/17 Area.

The SRI (O'Brien & Gere 2007) identified the vats as a potential source of metals (primarily zinc, copper, and chromium) and phthalates as contaminants associated with vat liquids and sludge. The detection of elevated levels of metals in ground water downgradient of the vats after the vats were exposed to the environment following the fire of 2004 suggests that the vats have leaked. However, the elevated metals were generally associated with turbidity and particulate matter which may limit their potential for migration. Although metals may be concentrated in soil under the vats, soil under the vats was not sampled due to complicated access. Other inorganics, total phenol, and acetone were detected in vat liquids at lower concentrations relative to the primary constituents cited above (O'Brien & Gere 2007).

In addition, the Building 15/16/17 Area may contain two sources of VOCs in ground water that appear to be approximately one to two orders of magnitude lower in concentration compared to the source identified in the Axton-Cross Area. One source appears to be located in front of Building 17 where relatively low concentrations of PCE and related compounds were detected. The VOC with the highest concentrations in ground water from this location was TCE. The soil at this location also contained TCE at 1.6 mg/Kg. This suggests that a source of material may be present in the area, although the ground water data does not suggest that it is concentrated.

The other potential VOC source in this area (which contained PCE, TCE, and TCA) was detected in shallow ground water located between Buildings 15 and 16. In soils, the highest concentrations of TCA and DCA were found in surface and shallow soil up to depths of 6 ft. The TCA and DCA concentrations were not observed to be substantial in other areas of the site suggesting the presence of a separate source in this area. The concentrations detected in soil did not provide evidence of a concentrated source area. Past discharge of facility wastes to surface soils reportedly occurred in this area.

For both of these locations in the Building 15/16/17 Area, the waste management practices of the facility are not known and in addition to surface discharges, concentrated source areas such as a drywell may be present that may have impacted ground water.

Other Areas of the Three Star Site

In the Building 12 Area, no constituents were identified at concentrations that would be suggestive of a separate source of contaminants in this area of the site.

In the Building 21/22 Area. VOCs were detected in the ground water of wells in front of Buildings 21 and 22 at concentrations that were relatively low compared to those detected in other areas of the Three Star Site. This suggests that a concentrated source is not present in the immediate area of these wells. Xylene was the only elevated constituent (40 μg/L) detected in MW-10 located at the loading dock on the northwest corner of Building 21. This presence of this compound differs from patterns of occurrence detected in the ground water elsewhere on site and therefore, the data suggest that there may have been a source of xylene such as the AST located in the loading dock, although the source does not appear to be significant.

# 6. MGP Site Investigation Results

## 6.1. Overview

A description of physical features observed on the MGP Site and the associated samples collected for the RI are presented in Table 2-4. The locations of samples collected from the MGP Site are identified on the site maps (Figures 2-1 and 2-2). The primary features of the MGP Site that were observed during field activities are summarized below, along with the associated sample locations shown in parentheses:

- Soil was evaluated in the vicinity of two former MGP gas holders located on the site (SB-3-01 and SB-4-01).
- Soil was evaluated in the vicinity of debris and fill material observed between the gas holders and the tidal creek (TP-3, TP-4, SS-MGP3, and SS-MGP4).
- Soil and ground water were evaluated in a filled area adjacent to the tidal creek (MW-4, MW-5, and BMW-1), north of the former gas holders.
- Soil and ground water were evaluated in the area between the gas holders and the lagoon (TP-1, TP-2, and MW-3).
- During subsurface soil investigation, a 2-inch diameter pipe was observed between the former MGP gas holder (near SB-3-01) and the lagoon.

The Three Star lagoon and its drainage channel to the tidal creek border the MGP Site to the east, and the tidal creek borders the MGP Site to the north and west. Residential properties border the MGP Site to the south.

Results of the investigation of the MGP Site are presented in three sections:

- Surface and shallow soil data are presented in Section 6.2.
- Subsurface soil data are presented in Section 6.3.
- Ground water data are presented in Section 6.4.

The discussions of results of analyses for VOCs, SVOCs, inorganics and supplemental parameters for each of the media presented in Sections 6.2 through 6.4 are based on comparison to screening values, as discussed previously in Section 2.6. Screening level exposure assessments completed for the MGP Site are summarized in Section 6.5. A discussion of site data of the RI for the MGP Site is provided in Section 6.6.

In addition to the analyses cited above, pesticides and PCBs were analyzed in a subset of ground water and soil samples (Table 5-4). DDT was detected above Part 375 screening values for unrestricted uses (SS-13 and SS-14), up to 0.02 mg/Kg, in both surface soil samples that were analyzed. The concentrations of other pesticides and PCBs in soil were generally below screening values with occasional detections of pesticides (other DDT compounds, Dieldrin, and Endrin) and one detection of PCBs (Aroclor 1260) above the screening values for unrestricted uses (Table 5-4). The PCBs were detected at 0.2 mg/Kg in surface soil collected from the area adjacent to the creek (SS-13). The detection of pesticides and PCBs in soil was below the Part 375 screening values for commercial uses. Neither pesticides nor PCBs were detected in ground water samples collected from

the MGP Site (Appendix F). The occurrence of these constituents was similar to that of the Main Site (Section 5.1) and did not suggest that the Three Star Site was a source for these compounds. Subsequent evaluation was focused on constituents that were identified to be related to the MGP Site.

## 6.2. Surface and Shallow Soil

Nine surface soil locations were sampled from the MGP Site (Figure 2-1). At each location, soil from the 0- to 2-ft interval below grade was observed and geological descriptions were recorded in field logs (Appendix A). Samples SS-13 and SS-14 were collected from the 0- to 2-inch interval near monitoring wells MW-4 and MW-5 where visual contamination was identified in subsurface soil (Section 6.3). The surface soil samples with the prefix "SS-MGP-" were collected from the 0- to 2-inch and 0- to 24-inch depth intervals. Shallow soil samples were also collected from two test pits TP-4 (0.5- to 2.5- foot interval) and TP-12 (0- to 2-foot interval). The shallow soil generally consisted of brown, coarse to fine sand, with variable amounts of medium to fine gravel and silt, and trace amounts of brick and cinder fragments.

In general, analytical data indicated that PAHs were the primary constituents detected in surface soil and inorganics were also detected. The PAH concentrations were frequently above Part 375 screening values for commercial uses. Inorganics were detected at concentrations generally below Part 375 screening values for commercial uses, although concentrations were frequently above Part 375 screening values for unrestricted uses. The highest concentrations of both PAHs and inorganics were located adjacent to the creek.

The discussion of surface soil data includes results of shallow soil sampling in the test pits. In addition, test pit results are presented in Section 6.3.2. As noted above, results of analyses for pesticides and PCBs that were screened out as site constituents are presented in Appendix F. The detections of VOCs, PAHs and inorganics are discussed further below.

Volatile Organic Compounds

Trace levels of VOCs detected in surface soil samples, consisting of benzene, PCE, toluene, methylene chloride, were below Part 375 screening values and were screened out from further evaluation (Appendix F).

Semivolatile Organic Compounds

The SVOCs detected in surface soil above Part 375 screening values consisted of PAHs (Figure 5-1, Table 6-1). The detections of PAHs included five compounds above Part 375 screening values for commercial uses:

| *PAH Compound* | *Range (mg/Kg)* |
|---|---|
| Benzo(a)anthracene | 0.060 J - 79 |
| Benzo(a)pyrene | 0.056 J - 87 |
| Benzo(b)fluoranthene | 0.19 J – 100 |
| Dibenzo(a,h)anthracene | 0.069 J - 18 |
| Indeno(1,2,3-cd)pyrene | 0.049 J - 53 |

SVOC TICs were also detected as identified in laboratory reports.

Inorganics

Inorganics were present above Part 375 screening values for unrestricted uses in each of the areas sampled from the MGP Site (Table 6-2, Figure 5-1). However, the highest concentrations were generally located along the west portion of the site (SS-MGP-1 and SS-MGP-2) and adjacent to the tidal creek (SS-13, SS-14, and SS-MGP-7). Samples from two locations contained inorganics above Part 375 screening values for commercial uses (Figure 5-1):

- At SS-MGP1, lead was detected at 1160 mg/Kg in surface soil and arsenic was detected at 37 mg/Kg in shallow soil (0 to 2 ft).

- At SS-14, copper was detected at 441 mg/Kg in surface soil.

## 6.3. Subsurface Soil

### 6.31. Soil Borings and Wells

During the installation of monitoring wells and soil borings on the MGP Site, soil samples were visually inspected, logged, and screened in the field using a handheld PID (Appendix A). Details of the soil encountered are presented in Table 6-3. To summarize the observations, odors characteristic of naphthalene were present in the soil borings completed on the MGP Site, except in those located between the gas holders and the lagoon (MW-2 and MW-3). Soil encountered in that area did not exhibit evidence of fill material or contamination.

The soil borings that exhibited naphthalene odor were completed in the former gas holders and the filled area adjacent to the tidal creek. Headspace screening of soil from each of the borings advanced in these areas resulted in PID readings above background. The bottom of the gas holders (SB-3-01 and SB-4-01) were encountered at approximate depths of 6.5 ft and 9.2 ft below grade based on the appearance of native material at those levels. Gas holders typically had concrete bottoms or used the top of the water table as the base to retain the gas. It appears that these gas holders were constructed using the latter approach. No coal tar sludge was observed at the apparent bottoms of the gas holders although PID readings up to 27 ppm were obtained from SB-4-01 in the 8 to 10 ft depth interval. The borings adjacent to the tidal creek (MW-4 and BMW-1) contained globules of free product in subsurface soil. PID readings up to 108 ppm were detected in soil from MW-4 in the 14 to 16 ft interval. The subsurface materials in that area (MW-4) consisted of soil with bricks and glass observed at approximately 8 ft bgs suggesting that soil in the area was filled.

### 6.3.2. Test Pits

A total of eight shallow test pits were completed in the MGP Site (Figure 2-2). Four of the test pits, identified as TP-1, TP-2, TP-3, and TP-4 were completed in the general vicinity of the former gas holders. The remaining four test pits, TP-5, TP-6, TP-11, and TP-12 were completed northwest of the gas holders to characterize the spatial distribution of fill material in this area. Test pits TP-11 and TP-12 were completed in an area where several empty five-gallon drums are exposed at the ground surface.

In general, test pits completed in the MGP Site did not demonstrate evidence of contamination. No atypical odors were noted and no measurable readings were by the PID. Soil samples were selected for laboratory analysis based field observation in the head space, on the overburden stratigraphy encountered at each test pit location, and the degree of saturation. A total of nine soil samples were collected and submitted for laboratory analysis from test pits completed in the MGP Site. In addition, one sample of cinders was collected for analysis from test pit TP-04.

### 6.3.3. Subsurface Soil Analytical Data

Subsurface soil data for the MGP Site are provided in Tables 6-4 through 6-6. Data for the deep soil boring on the MGP Site (BMW-1) are presented in Tables 5-7c, 5-8c, and 5-9c. Detected concentrations in subsurface soil above Part 375 screening values for unrestricted uses are presented in Figure 5-2. TOC concentrations in MGP Site subsurface soil ranged from less than 0.1 to 11%. TOC data are presented in each of the tables summarizing the other constituents analyzed.

In six of thirteen locations sampled, constituents were below Part 375 screening values for unrestricted uses, except the detection of zinc in TP-02 at a concentration similar to the Part 375 screening value. In soil collected from another six locations sampled, PAHs were detected above Part 375 screening values for commercial uses. In general, the highest levels and widest range of contaminants in subsurface soil were detected in five locations sampled from two areas:

- In the south gas holder (SB-04-01, 6 to 8 ft deep), the analytical results included PAHs and lead detected at concentrations above Part 375 screening values for commercial uses. In that depth interval, the concentration of total PAHs and lead were 2,261 and 1,750 mg/Kg, respectively.
- In the area adjacent to the creek (MW-4, MW-5, BMW-1, TP-05), PAHs were detected at concentrations above Part 375 screening values for commercial uses, with concentrations of total PAHs up to 1,448 mg/Kg detected (MW-5, 2 to 4 ft). In addition, mercury, arsenic, and cadmium were detected at MW-4 (14 to 16 ft) above Part 375 screening values for commercial uses, at 249, 39, and 18 mg/Kg, respectively. The detection of mercury at MW-4 included 6.7 and 16 mg/Kg detected above (12 to 14 ft) and below (18 to 20 ft) that depth interval, respectively. In addition, at MW-5 (12 to 14 ft), mercury was also detected at 3.7 mg/Kg, above the Part 375 screening value for commercial uses

As expected, PAHs were associated with fill containing cinders. In a sample of the cinders (TP-04, cinders), total PAHs were detected at 1,670 mg/Kg and PAHs exceeded Part 375 screening values for commercial uses.

Additional details of the analytical results for subsurface soil are provided below. Most of constituents detected above Part 375 screening values were associated with the features discussed above.

<u>Volatile Organic Compounds</u>

VOCs were not detected above Part 375 screening values for unrestricted uses, except in soil collected from the south gas holder and the area adjacent to the creek (Figure 5-2, Table 6-4):

- In the south gas holder (SB-4-01, 10 to 12 ft), benzene, xylene, and acetone were detected at 0.16, 0.37, and 0.11 mg/Kg, respectively.
- Adjacent to the creek (BMW-1, MW-4), benzene was detected at concentrations up to 0.27 mg/Kg (BMW-1, 28 to 30 ft). In addition, xylene was detected at 3.1 mg/Kg (BMW-1, 28 to 30 ft) and acetone was detected at 0.094 mg/Kg (MW-5, 14 to 16 ft). VOCs were below Part 375 screening values for unrestricted uses in a deep sample of soil collected from the 38 to 40 ft interval at BMW-1.

VOC TICs were also detected, as identified in laboratory reports.

Semivolatile Organic Compounds
As discussed above, detected SVOCs, primarily PAHs, were generally associated with the south gas holder and area adjacent to the creek, including concentrations detected above Part 375 screening values for commercial uses. In addition, phenol and dibenzofuran were also associated with the south gas holder and area adjacent to the creek, with concentrations detected above Part 375 screening values for unrestricted uses (Figure 5-2, Table 6-5):

- In the south former gas holder (SB-4-01), DBF up to 15 mg/Kg (6 to 8 ft) and phenol up to 0.9 mg/Kg ((10 to 12 ft) were detected.
- Adjacent to the creek, DBF up to 54 mg/Kg (MW-4, 14 to 16 ft) was detected. The PAHs detected in that sample included the maximum concentration of naphthalene, 290 mg/Kg, detected on the MGP Site.

SVOC TICs were also detected, as identified in laboratory reports.

Inorganics
Inorganics were generally associated with the south gas holder and the area adjacent to the creek where the highest concentrations and widest range of inorganics were detected on the MGP Site (Figure 5-2 and Table 6-6). In addition to the detection of mercury, arsenic, cadmium, and lead above Part 375 screening values for commercial uses discussed above, these metals and chromium, copper, nickel, and zinc were detected above Part 375 screening values for unrestricted uses. Antimony was also detected above its reference value.

Non-Aqueous Phase Liquid
Non-Aqueous Phase Liquid (NAPL) was observed in the deep boring adjacent to the tidal creek (BMW-1) at depths of 26 to 36 ft.

## 6.4. Ground Water

Tables presenting ground water data are provided in Appendix F. Detected concentrations in shallow ground water compared to TOGS screening values are presented in Tables 6-7 through 6-9. Detected concentrations in deep ground water at BMW-1 compared to TOGS screening values are presented in Tables 5-11, 5-13, and 5-15. Concentrations detected in ground water above TOGS screening values are presented in Figure 5-3. A brief summary of the detected concentrations in ground water is provided below.

### 6.4.1. Field Observations

During ground water sampling on the MGP Site, field observations including color and odor were noted. While purging each well, pH, temperature, conductivity and turbidity were measured. Temperatures ranged from approximately 8 (December 2002) to approximately 12 degrees (May 2001) Celsius. Field measurements for pH ranged from 7 to 7.5. Conductivity measurements ranged from approximately 0.5 to 0.75 mS/cm with the highest readings in BMW-1. In each of the wells the turbidity of the ground water remained high during sampling due to the fine-grained nature of the soil. Field measurements of DO, salinity, and ORP collected in May 2001 are reported on the field logs (Appendix B).

Purge water from MW-4 and MW-5 appeared grayish brown to black. During the first round of sampling, a sheen and a mothball (naphthalene) odor was noticeable. During the second round of

sampling no sheen or odor was noted. No noticeable odors or contamination were noted for the other wells on the MGP Site.

### 6.4.2. Volatile Organic Compound Data

Shallow ground water

Total VOC concentrations in shallow ground water ranged from 1 to 160 µg/L (Table 6-7). VOCs detected in ground water above TOGS screening values consisted of benzene, TCE, cis-1,2-DCE, and vinyl chloride (Table 6-7):

- Benzene was detected in shallow ground water adjacent to the tidal creek (MW-4), at up to 3 µg/L.
- TCE was detected in shallow ground water from the south portion of the site (MW-2) at up to 17 µg/L.
- Cis-1,2-DCE was detected in shallow water from the south portion of the site (MW-2) and adjacent to the lagoon (MW-3) at up to 110 and 16 u/L, respectively.
- Vinyl chloride was also detected in shallow ground water from MW-2, MW-3 and MW-4 at concentrations of up to 24, 8 and 8 µg/L, respectively.

Methylene chloride in ground water samples, detected below the TOGS screening value, may be related to laboratory contamination (Potak 2001, 2003), although anthropogenic sources can not be ruled out. Other than methylene chloride, no other VOCs were detected in MW-5.

VOCs TICs were also detected, as identified in laboratory reports.

Deep Ground Water

VOC concentrations were below TOGS screening values in deep ground water adjacent to the tidal creek (BMW-1), except for benzene which was detected at 3 µg/L and cis-1,2-DCE, which was detected at 26 µg/L (Table 5-11).

Wells were not screened in the NAPL zone.

### 6.4.3. Semivolatile Organic Compound Data

Shallow Ground Water

SVOCs were not detected in shallow ground water samples collected from two of the four wells (MW-2 and MW-3) on the MGP Site (Table 6-8). PAHs were detected in shallow ground water sampled adjacent to the tidal creek (MW-4 and MW-5) at concentrations above TOGS guidance values with total PAH concentrations up to 188 µg/L detected (Table 6-8). Levels of other SVOCs detected in ground water at MW-4 and MW-5 were below TOGS screening values.

Deep Ground Water

In deep ground water adjacent to the tidal creek (BMW-1), naphthalene was detected at 77 µg/L (Table 5-13), above the TOGS screening value of 10 µg/L.

TICs for SVOCs were detected in ground water, as identified in laboratory reports.

### 6.4.4. Inorganics Data

Shallow Ground Water
Inorganics detected above TOGS screening values generally consisted of elements that are commonly related to local geologic conditions (iron, magnesium, manganese, and sodium), except antimony (Table 6-9). Antimony was detected in shallow ground water from a single monitoring well located adjacent to the tidal creek (MW-4), at a concentration approximately five times the TOGS screening value.

Deep Ground Water
In deep ground water adjacent to the tidal creek (BMW-1), several inorganics were above TOGS screening values (Table 5-15):

- Thallium and lead were detected at approximately eight times higher than the TOGS screening values.
- Arsenic and chromium were detected at approximately four times the TOGS screening values.
- Beryllium, copper, and nickel were approximately three, three, and two times their respective TOGS screening values.
- Mercury was slightly above its TOGS screening value.

Concentrations of iron, manganese, magnesium, and sodium were also above TOGS screening values, but the presence of these elements may be attributed to local geologic conditions. Therefore, these constituents were not evaluated further.

Turbidity can influence the concentrations of inorganics detected in ground water. In ground water, higher levels of turbidity tend to be associated with elevated levels of suspended solids and inorganics.

## 6.5. Exposure Assessment

### 6.5.1. Exposure Pathway Analysis

A qualitative exposure pathway analysis was performed to evaluate the potential for human contact with site constituents (Appendix H).

The MGP Site is currently undeveloped which limits expected uses of the area by humans. Anticipated current uses that were evaluated consist of trespassers and site workers (although the MGP Site did not appear to be maintained). The potentially complete exposure pathways for current uses are summarized below:

- Ingestion and dermal contact of surface soil by adult, adolescent, and child trespassers, and adult site workers.
- Inhalation of ambient air by adult, adolescent, and child trespassers and adult site workers.
- Ingestion and dermal contact of subsurface soil by adult site worker.
- Inhalation of outdoor air by adult site worker during trenching/excavation activities.

Future development of the site could result in additional human uses of the MGP Site such as commercial site workers, recreators, or residents. The potentially complete exposure pathways for these potential future uses are summarized below:

- Ingestion and dermal contact of surface soil by adult, adolescent, and child trespasser; adult site worker; adult commercial worker; adult, adolescent, and child recreator; and adult, adolescent, and child residents.
- Inhalation of ambient air by adult, adolescent, and child trespasser; adult site worker; adult commercial worker; and adult, adolescent, and child recreator; and adult, adolescent, and child residents.
- Ingestion and dermal contact of subsurface soil by adult site worker.
- Inhalation of outdoor air (trenches/excavations) by adult site worker.
- Inhalation of indoor air (vapor intrusion) by adult site worker, adult commercial worker, and adult, adolescent, and child residents.
- Ingestion, dermal contact, and air inhalation related to the interior space of new/existing buildings for future uses by adult site worker; adult, adolescent, and child recreator; and adult, adolescent, and child resident.

### 6.5.2. Fish and Wildlife Impact Analysis

The FWIA was completed through Step IIC which is a screening level ecological risk assessment (Appendix E). The screening level risk assessment evaluates potential exposure to surface soil on the MGP Site using ecological screening values. Ecological screening considers representative wildlife species that may be present compared to conservative screening values. For the most part, the MGP Site consists of vegetated areas with trees, shrubs, and grasses that may be suitable for wildlife habitat. Ruins of gas holders are also present along with an area with various debris (Section 1.1.2). Results of the screening level risk assessment indicate that the area provides a limited area for wildlife habitat. The results of the ecological screening indicate that inorganics and PAHs represent the most common COPEC among the representative wildlife species (Appendix E). In addition, PCBs (Aroclor 1260) were also indicated as COPEC, however the occurrence of PCBs appears limited (Appendix E). Pesticides were also identified as COPEC.

## 6.6. Discussion

Similar to findings for the Main Site (Section 5), concentrations detected on the MGP Site do not suggest widespread contamination. In general, areas within the MGP Site contain ground water with VOCs consisting of benzene, TCE, cDCE, and vinyl chloride above screening values. While benzene is commonly associated with MGP operations, it is noteworthy that chlorinated organic compounds such as TCE and vinyl chloride are not. The presence of these compounds in ground water may be associated with fill materials placed on the MGP Site or migration from contamination from the Main Site (MW-9).

VOCs have migrated to the deeper portion below the site, with benzene at 3 µg/L detected in deep ground water adjacent to the creek (BMW-1), above the water quality screening concentration. This migration is also reflected by the observation of separate phase globules in deeper borings in that area associated with MW-4, MW-5, and BMW-1. The area in the vicinity of these wells appeared to be filled. The elevated levels of PAHs and separate phase material suggest the presence of MGP wastes in this area. It is unclear whether NAPL is mobile as a free-phase liquid.

Inorganic concentrations in ground water included iron, magnesium, manganese, and sodium above background reference values. The occurrence of these inorganic concentrations may be natural. Antimony was detected above the TOGS screening value in shallow ground water collected from adjacent to the creek (MW-4). Otherwise, inorganics that were detected in shallow ground water under the Main Site were not detected in shallow ground water under the MGP Site. However, inorganics were detected in deep ground water under the MGP Site (BMW-1), similar to results for the Main Site. As discussed previously (Section 5.7), the mechanism for the vertical migration of metals to deep ground water is not known.

Localized areas of impacted soil were identified. Evaluation of the site soils is complicated by the past filling and the possible use of the MGP Site as a disposal area for industrial wastes from operations that occurred on the Main Site. The PAH levels detected in soil on the MGP Site were frequently above the Part 375 screening values for commercial uses. At MW-2 and MW-3, neither PAHs nor inorganics were detected in shallow ground water above screening levels. These wells are generally up-gradient of the MGP Site, but down-gradient of areas on the Main Site.

Over the years, random dumping has occurred on the MGP Site, west of the former MGP gas holders (Figure 2-1). Observations during the field program indicated the presence of rusted containers, drums, and other debris. These types of materials may result in a release.

# 7. Summary

A Remedial Investigation of the Three Star Anodizing Site (Three Star Site, Site #314058) was completed by O'Brien & Gere Engineers, Inc. (O'Brien & Gere) on behalf of the New York State Department of Environmental Conservation (NYSDEC). The "Site RI" identified historic operations on the Three Star Site that is located on the south portion of the Market Street Industrial Park on McKinley Street in the Village of Wappingers Falls. During the original site development activities approximately 9 to 11 ft of material that included coal cinders were used to fill the Three Star Site. The area occupied by the Market Street Industrial Park has been the site of industrial/commercial operations since the 1830s.

The Three Star Site was originally developed as a cloth dye manufacturing facility called the Dutchess Bleachery. During the operation of the Dutchess Bleachery, the facility also manufactured ammunition, leather products, and felt hats. Other activities included plastic mold injection. A portion of the Three Star Site was used for the operation of a manufactured gas plant (MGP) over the period of the 1830s to approximately 1913. The Three Star Anodizing Company also operated a metal plating facility at the Three Star Site from the late 1950s to 1995. During operation of the Dutchess Bleachery, hydropower was used at the facility. An inactive raceway borders the property to the south (former raceway) and drains from east to toward a former industrial lagoon (Three Star lagoon). The Three Star lagoon then drains north toward Wappingers Creek bordering the Three Star Site to the north and west.

Current uses of the Three Star Site include a warehouse and an area used for storage of tractor trailers. A fire in May 2004 destroyed three of the buildings at the Three Star Site. The area affected by the fire contains ruins of three buildings and debris associated with the fire. Twenty-three former metal plating vats that were contained in one of the buildings are exposed to the environment. Five buildings presently occupy the Three Star Site.

For the *Site RI*, the Three Star Site was conceptually subdivided into two areas, the *Main Site* and *MGP Site* that are separated by the Three Star lagoon. The Main Site is located on the east portion of the Three Star Site and contains buildings formerly associated with industrial activities and includes the Three Star lagoon. The MGP Site is located on the west portion of the Three Star Site and contains the ruins of gas holders that were associated with the MGP operations and undeveloped areas that include miscellaneous debris and fill. Wappingers Creek is located adjacent to the Three Star Site to the north. The potential impacts of the Three Star Site to Wappingers Creek were evaluated separately from the Three Star Site in the *Creek RI Report* (O'Brien & Gere 2007b). Contaminant sources, potential migration pathways, potential exposure pathways identified on the Three Star Site are summarized below.

## 7.1. Contaminant Sources and Extent

The results of the Site RI indicated that concentrations of VOCs, PAHs, and inorganics detected in site media do not suggest wide-spread contamination that would potentially impact the surrounding community. However, the Site RI identified four focused source areas associated with specific features of the Main Site and consisting of the lower raceway, the Three Star lagoon, media in the vicinity of a drywell and former drum storage area, and exposed soil along the creek bank. A Supplemental Remedial Investigation (SRI) of the vats on the Main Site also identified the exposed former metal plating vats (the vats) as a newly exposed potential source. The results of the SRI are

reported separately in the *SRI Report* (O'Brien & Gere 2007). These five primary sources identified at the Three Star Site are discussed below. Four other comparatively minor sources that were identified are also summarized subsequently.

- The lower raceway is a source of mercury, naphthalene, and a wide range of other inorganics. The levels of mercury, naphthalene, and cyanide in ground water distinguish this source from other sources detected on the Three Star Site. Surface soil from this area also contains a wide range of inorganics at elevated levels including the highest concentrations of mercury and cyanide detected at the Three Star Site. Elevated concentrations of inorganics detected in surface and subsurface soil, and shallow and deep ground water suggest that this structure is a pathway for potential off-site migration. In addition, the surface soil concentrations may represent an exposure pathway for small animals.

- The Three Star lagoon has been impacted by an unknown CB source. The presence of TCE in the surface water of the Three Star lagoon and the sediment at the confluence of the Three Star lagoon with Wappingers Creek provides evidence that off-site migration of chlorinated VOCs from site source(s) may be occurring. The sediment in the Three Star lagoon contains elevated levels of VOCs, PAHs, and metals.

- The dry well and former drum storage area located south of the Axton-Cross Building contains a concentrated source of chlorinated VOCs (PCE, TCE, DCB) and xylene to ground water. The highest levels of VOCs detected in soil and ground water from the Three Star Site are associated with this area. The VOC plume likely extends under the Axton-Cross Building.

- The SRI (O'Brien & Gere 2007c) identified liquid and sludge in the vats as potential sources of zinc, chromium, copper, and other constituents to subsurface media. The detection of elevated levels of metals in ground water downgradient of the vats suggests that the vats have leaked. However, the elevated metals were generally associated with turbidity and particulate matter which may limit their potential for migration. Although metals may be concentrated in soil under the vats, soil under the vats was not sampled due to complicated access. Phthalates were also associated with vat liquids and sludge. Other inorganics, total phenol, and acetone were detected in vat liquids at lower concentrations relative to the primary constituents cited above (O'Brien & Gere 2007c).

- The area of the MGP Site bordering the creek contains benzene, PAHs, and separate phase globules that suggest the presence of MGP wastes. In addition, the detection of inorganics and chlorinated VOCs in that area suggests that the MGP wastes may be mixed with industrial residues.

The four other comparatively minor sources identified at the Three Star Site are summarized below.

- Fill material is a source of PAHs and inorganics, mostly at levels within 1 order of magnitude of background. The fill material is widespread and extends to approximately 10 ft below grade. Soil samples collected at the MGP Site generally contained higher levels of PAHs compared to concentrations detected at the Main Site suggesting contribution of by products from the MGP.

- TCA was detected in ground water in the vicinity of Buildings 15 and 16. The source of the TCA, however, was not identified.

- As would be expected, the surface soil at the MGP Site contained PAH levels that distinguish it from other portions of the Three Star Site. In addition, the surface soil at the MGP Site also contains inorganics.

- The soil adjacent to the west side of the Axton-Cross Building contained elevated levels of nickel in surface soil and lead in subsurface soil relative to other areas of the Three Star Site. PCE was also detected in shallow soil above levels detected elsewhere on the Three Star Site. Drain holes on that side of the Axton-Cross Building are a potential contaminant pathway from the interior of the building.

Other sporadic detections of constituents in soil at levels above screening values for commercial uses were also detected at the Three Star Site. The detection of PCBs and pesticides in soil and pesticides in lagoon sediment did not identify a source of PCBs or pesticides specific to the Three Star Site.

## 7.2. Potential Migration Pathways

Sources of VOCs were identified in shallow ground water beneath the Main Site, as discussed above. There are several areas where chemical signatures in the ground water suggest that multiple sources are present. However, the concentrations detected in the soil did not identify specific source areas. Inorganics were also detected in shallow ground water within the former raceway and deep ground water under the Main Site. Although the source of these constituents may be concentrated in the lower raceway or another unidentified source, the mechanism for vertical migration of inorganics to deep ground water is has not been established. Furthermore, transport of inorganics to deep ground water may not be currently active.

The presence of elevated concentrations of inorganics in deep ground water adjacent to the creek suggests that the creek channel may provide a migration pathway with the potential for ground water to migrate downgradient within the sediment of Wappingers Creek. The volume of ground water seepage to the creek or river may be small in comparison to creek and river flows reducing the ability to observe these interactions.

Erosion of site soil could occur along the unprotected banks that could contribute to the migration of PAHs and inorganics to the creek. The stone block retaining wall located upstream of the west bridge located on the Three Star Site protects that portion of the Three Star Site from scouring along the creek bank. Adjacent to the Axton-Cross Building and the MGP Site, the exposed soil may be subject to erosion.

## 7.3. Potential Exposure Pathways

Future uses of the site are expected to be consistent with its current use, which is commercial. Current potential human exposure pathways are primarily associated with the inhalation of indoor air by workers inside the Axton-Cross Building due to the VOC plume located in the vicinity of it and indoor air of other buildings on the Three Star Site. Additional pathways include potential human contact with surface soil and fugitive dust at the Three Star Site, and surface water and sediment of the Three Star lagoon. The size of the exposed soil area and uses of the Three Star Site limit the potential contact with surface soil on the Main Site. Surface water and sediment of the Three Star lagoon are potential exposure routes for trespassers, site workers, or recreational visitors. Exposure to subsurface materials is a potential pathway for construction workers. Due to the availability of a

public water supply, the village prohibits the use of ground water from private wells for potable water. Therefore, contact to ground water will be limited. Other potential uses of the Three Star Site are recreational uses primarily associated with the proximity to the creek, and future residential uses, if they were permitted. Exposure to surface soil is a pathway for both of these potential receptors. Potential exposures for residences would also include breathing indoor air.

The Three Star Site contains limited ecological habitat. Most of the Main Site is occupied by buildings, ruins of buildings, and paved parking areas that represent poor quality ecological habitat. However, wildlife that may be present on the Main Site may be exposed to metals, PAHs, and VOCs that were detected in surface soil above ecological screening values. The Three Star lagoon provides limited aquatic habitat on the Three Star Site. Aquatic receptors that visit the Three Star lagoon may be exposed to metals, PAHs, and CB concentrations that were detected in surface water or sediment above ecological screening values. The MGP Site consists primarily of vegetated areas with grasses, trees, and shrubs that may be suitable habitat for wildlife. Wildlife that may be present on the MGP Site may be exposed to PAHs and metals concentrations that were detected above ecological screening values in surface soil.

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Table 1-1
Three Star Anodizing Site
Wappinger Falls, New York
Potential constituent sources and characteristics

.

| ***Constituent type*** | ***Potential sources*** | ***Characteristics*** |
|---|---|---|
| Volatile organic compounds | Solvents, hydrocarbon fuels | VOCs generally dissipate to the air when exposed to the surface environment. However, VOCs discharged as liquids may migrate into ground water where they can be retained over a long period of time and act as a source of VOCs to other media. If sufficient quantities are present, free phase VOCs may be trapped in soil. VOCs were used at the site in solvents and petroleum products. |
| Semivolatile organic compounds | MGP site uses as PAHs, ubiquitous sources of combustion, hydrocarbon fuels | SVOCs tend to accumulate in sediment and soils when exposed to the environment. SVOCs are often present as groups of aromatic compounds called polycyclic aromatic hydrocarbons (PAHs). Exposure of PAHs to the environment may alter the composition of the PAHs in solid matrices, soil and sediment, over time. Losses of lighter compounds to water and air commonly occurs resulting in a PAH composition enriched in higher weighted compounds. PAHs may be present at the site from tar residues for MGP operations, and coal wastes from coal burning. |
| Metals | Metal plating operations, vehicle brakes, local geology, mining, foundries and smelters, combustion byproducts, coal. | Metals can be present in the environment as either ionic (dissolved) compounds or solids. In the dissolved form, metals are readily transported in surface water or ground water. As a solid, metals tend to be retained in sediment or soils. Metals were discharged in process water from plating operations mixed with acid to dissolve the metals. However, on contact with environmental media, the acid solution would tend to neutralize and precipitates of metals may be formed. Therefore, metals may be retained in soils or sediment. Metals may also be present due to past use of pigments in industrial processes at the site and nearby. |
| Cyanide | Metal finishing and chemical industries, plastic and dye manufacturing, MGP, road salt, pesticides and herbicides | Cyanide is found in a number of sources. Cyanide can be in a form that does not pose a risk to living organisms or in its bioavailable form, measured as amenable cyanide, it can be toxic to organisms. Insoluble cyanide compounds are the most likely forms to be found in the environment. Insoluble cyanide compounds may adsorb to soil and sediment and generally have the potential to bioconcentrate. Insoluble forms do not biodegrade. |

Table 2-1
Three Star Anodizing Site
Wappingers Falls, New York
Sample quantities analyzed for the Remedial Investigation

| Description | Analysis | Analytical Method | | Off-site Environ. | | Main Site Environ. | | MGP Site Environ. | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | ***Locations*** | ***Samples*** | ***Locations*** | ***Samples*** | ***Locations*** | ***Samples*** |
| Surface Soil | Volatile organic compounds | NYSDEC | 95-1+10 | 0 | 0 | 16 | 16 | 9 | 16 |
| | Semivolatile organic compounds | NYSDEC | 95-2+20 | 10 | 20 | 16 | 16 | 9 | 16 |
| | Pesticides | NYSDEC | 95-3 | 0 | 0 | 16 | 16 | 2 | 2 |
| | PCBs | NYSDEC | 95-3 | 0 | 0 | 16 | 16 | 2 | 2 |
| | Metals | NYSDEC | 200.7 CLP-M | 10 | 20 | 16 | 16 | 9 | 16 |
| | Hexavalent chromium S | NYSDEC | 7196A | 10 | 20 | 16 | 16 | 9 | 16 |
| | Mercury | NYSDEC | 245 CLP-M | 10 | 20 | 16 | 16 | 9 | 16 |
| | Cyanide | NYSDEC | 335.2 CLP-M | 10 | 20 | 16 | 16 | 9 | 16 |
| | Total Organic Carbon S | USEPA | Lloyd Kahn | 10 | 20 | 16 | 16 | 9 | 16 |
| | Percent solids | ASTM | D2540-6 | 10 | 20 | 16 | 16 | 9 | 16 |
| Soil borings | Volatile organic compounds | NYSDEC | 95-1+10 | 0 | 0 | 11 | 33 | 8 | 21 |
| | Semivolatile organic compounds | NYSDEC | 95-2+20 | 0 | 0 | 11 | 33 | 8 | 21 |
| | Pesticides | NYSDEC | 95-3 | 0 | 0 | 4 | 12 | 7 | 18 |
| | PCBs | NYSDEC | 95-3 | 0 | 0 | 4 | 12 | 7 | 18 |
| | Metals | NYSDEC | 200.7 CLP-M | 0 | 0 | 11 | 33 | 8 | 21 |
| | Hexavalent chromium S | NYSDEC | 7196A | 0 | 0 | 11 | 33 | 8 | 21 |
| | Mercury | NYSDEC | 245 CLP-M | 0 | 0 | 11 | 33 | 8 | 21 |
| | Cyanide | NYSDEC | 335.2 CLP-M | 0 | 0 | 11 | 33 | 8 | 21 |
| | Total organic carbon S | USEPA | Lloyd Kahn | 0 | 0 | 11 | 33 | 8 | 21 |
| | Percent solids | ASTM | D2540-6 | 0 | 0 | 11 | 33 | 8 | 21 |
| Test pits | Volatile organic compounds | NYSDEC | 95-1+10 | 0 | 6 | 4 | 6 | 8 | 10 |
| | Semivolatile organic compounds | NYSDEC | 95-2+20 | 0 | 6 | 4 | 6 | 8 | 10 |
| | Pesticides | NYSDEC | 95-3 | 0 | 0 | 4 | 6 | 8 | 10 |
| | PCBs | NYSDEC | 95-3 | 0 | 0 | 4 | 6 | 8 | 10 |
| | Metals | NYSDEC | 200.7 CLP-M | 0 | 6 | 4 | 6 | 8 | 10 |
| | Hexavalent chromium S | NYSDEC | 7196A | 0 | 6 | 4 | 6 | 8 | 10 |
| | Mercury | NYSDEC | 245 CLP-M | 0 | 6 | 4 | 6 | 8 | 10 |
| | Cyanide | NYSDEC | 335.2 CLP-M | 0 | 6 | 4 | 6 | 8 | 10 |
| | Total organic carbon S | USEPA | Lloyd Kahn | 0 | 6 | 4 | 6 | 8 | 10 |
| | Percent solids | ASTM | D2540-6 | 0 | 6 | 4 | 6 | 8 | 10 |
| Ground water | Volatile organic compounds | NYSDEC | 95-1+10 | 0 | 0 | 11 | 15 | 5 | 9 |
| | Semivolatile organic compounds | NYSDEC | 95-2+20 | 0 | 0 | 11 | 15 | 5 | 9 |
| | Pesticides | NYSDEC | 95-3 | 0 | 0 | 4 | 4 | 4 | 4 |
| | PCBs | NYSDEC | 95-3 | 0 | 0 | 4 | 4 | 4 | 4 |
| | Metals | NYSDEC | 200.7 CLP-M | 0 | 0 | 11 | 15 | 5 | 9 |
| | Mercury | NYSDEC | 245 CLP-M | 0 | 0 | 11 | 15 | 5 | 9 |
| | Cyanide | NYSDEC | 335.2 CLP-M | 0 | 0 | 11 | 15 | 5 | 9 |
| | Total suspended solids | NYSDEC | 160.2 | 0 | 0 | 11 | 15 | 5 | 9 |

Table 2-1
Three Star Anodizing Site
Wappingers Falls, New York
Sample quantities analyzed for the Remedial Investigation

| Description | Analysis | Analytical Method | | Off-site Environ. | | Main Site Environ. | | MGP Site Environ. | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | ***Locations*** | ***Samples*** | ***Locations*** | ***Samples*** | ***Locations*** | ***Samples*** |
| Lagoon sediment | Volatile organic compounds | NYSDEC | 95-1+10 | --- | --- | 4 | 8 | --- | --- |
| | Semivolatile organic compounds | NYSDEC | 95-2+20 | --- | --- | 4 | 8 | --- | --- |
| | Pesticides | NYSDEC | 95-3 | --- | --- | 1 | 2 | --- | --- |
| | PCBs | NYSDEC | 95-3 | --- | --- | 1 | 2 | --- | --- |
| | Metals | NYSDEC | 200.7 CLP-M | --- | --- | 4 | 8 | --- | --- |
| | Hexavalent chromium | NYSDEC | 7196A | --- | --- | 4 | 8 | --- | --- |
| | Mercury | NYSDEC | 245 CLP-M | --- | --- | 4 | 8 | --- | --- |
| | Cyanide E | NYSDEC | 335.2 CLP-M | --- | --- | 4 | 8 | --- | --- |
| | Percent solids | ASTM | D2540-6 | --- | --- | 4 | 8 | --- | --- |
| | Total organic carbon S | USEPA | Lloyd Kahn | --- | --- | 4 | 8 | --- | --- |
| | TCLP | USEPA | | --- | --- | 1 | 1 | --- | --- |

Notes:
Samples analyzed by O'Brien & Gere Laboratories, Inc., except as noted by "S" indicating subcontracted analysis.
Amendable cyanide analyses performed based on results of total cyanide analyses.

Table 2-2
Three Star Anodizing Site
Wappingers Falls, New York
Off-site surface soil sample descriptions and locations

| Description | Sample ID |
|---|---|
| ***Off-Site Location 1*** | |
| Off-Site Location 1, soil | SS-2 |
| possible fill material | SS-NR |
| ***Background samples*** | |
| ball field and park | SS-BK2, SS-BK3, SS-BK4, SS-BK5 |
| Off-Site Location 2 | SS-BK6 |
| Off-Site Location 3 | SS-BK7 |
| Off-Site Location 4 | SS-BK8 |
| Off-Site Location 5 | SS-BK9 |
| Off-Site Location 6 | SS-BK10 |

Table 2-3
Three Star Anodizing Site
Wappingers Falls, New York
Main Site physical features and associated sample locations

| | Associated Samples | | |
|---|---|---|---|
| ***Description*** | ***Surface Soils*** | ***Subsurface soil*** | ***Ground water*** |
| **Former Axton- Cross Building** | | | |
| An underground storage tank (UST) is located next to the Axton-Cross building (SS-9 and TP-7). | SS-9 | TP-7 | ---- |
| During reconnaissance activities in April 2001, drums were observed being stored in a fenced area next to the Axton-Cross building (SS-10). However, in May 2001 the drums and fenced area were gone and the area was filled. A dry well was also reportedly present in this location. | SS-10 | MW-9, SB-4-02 | MW-9 |
| On the back of the Axton-Cross Building, holes were observed; presumably they were used as floor drains (SS-11). | SS-11, SS-12 | SB-3-02 | ---- |
| The Axton-Cross property and other locations adjacent to the creek are located on fill material TP-8). | ---- | TP-8 | ---- |
| **Building 21/22 Area** | | | |
| An AST is located next to Building 21 (SS-7, SB-7). | SS-7 | SB-7 | ---- |
| Two above ground storage tanks (ASTs) are located in the vicinity of a truck dock (SS-8, MW-10). | SS-8 | MW-10 | MW-10 |
| Soil and ground water were investigated next to Building 21. | ---- | MW-6 | MW-6 |
| **Former Raceway** | | | |
| The former raceway forms the south border of the Main Site with the Three Star lagoon and its drainage outlet located at the eastern terminus of the raceway. During the site investigation, the former raceway was dry. The raceway bed elevation is above that of other portions of the Main Site, and it drains toward the east. Some debris was noted in the former raceway during field reconnaissance activities. | SS-1, SS-5, SS-18 | MW-11, BMW-2, MW-13 | MW-11, BMW-2, MW-13 |
| **Building 15/16/17 Area** | | | |
| Soil and ground water were investigated behind buildings 15 and 16. | ---- | MW-7 | MW-7 |
| The area between buildings 15 and 16 is fenced. In 2001, utility personnel with experience at the site provided an anecdotal account of an encounter with subsurface contamination observed between Buildings 15 and 16 (SS-3, SS-4). The utility personnel provided this information to O'Brien & Gere personnel during site utility marking activities for the Phase I RI. | SS-3, SS-4 | MW-12, SB-12 | MW-12 |

Table 2-3
Three Star Anodizing Site
Wappingers Falls, New York
Main Site physical features and associated sample locations

| ***Description*** | ***Associated Samples*** | | |
|---|---|---|---|
| | ***Surface Soils*** | ***Subsurface soil*** | ***Ground water*** |
| Soil and ground water were investigated in front of Building 17. | ---- | MW-1 | MW-1 |
| Behind Building 17 an area of standing water was observed. | SS-6 | ---- | ---- |
| **Building 12 Area** | | | |
| This portion of the site is currently used to park tractor trailers. A former ground water monitoring well was identified on the east portion of the site (east of TP-9 and north of SS-18). | SS-16 | ---- | ---- |
| An UST is located on the northeast portion of the site (SS-17). | SS-17 | ---- | ---- |
| Area next to creek. | SS-15 | ---- | ---- |
| Area along access drive. | ---- | TP-10 | ---- |
| Area north of Building 12. | ---- | MW-8, TP-9, BMW-3 | MW-8, BMW-3 |

***Notes:***
SS = surface soil sample
SB = Soil boring
MW = Shallow soil boring/monitoring well
BMW = Deep soil boring/bedrock monitoring well
TP = Test pit

Source: O'Brien & Gere Engineers, Inc.

Table 2-4
Three Star Anodizing Site
Wappirngers Falls, New York
MGP Site physical features and associated sample locations

| | ***Associated Samples*** | | |
|---|---|---|---|
| ***Description*** | ***Surface Soils*** | ***Subsurface soil*** | ***Ground water*** |
| Adjacent to the creek | SS-13, SS-14, SS-MGP7 | MW-4, MW-5, SB-2, BMW-1 | MW-4, MW-5, BMW-1 |
| In the vicinity of the gas holders, east of debris | SS-MGP3, SS-MGP4 | TP-3, TP-4 | ---- |
| Inside former gas holders | ---- | SB-3-01, SB-4-01, | ----- |
| East portion of site, adjacent to the lagoon. | SS-MGP6 | MW-3, TP-1, TP-2 | MW-3 |
| South portion of site | SS-MGP5 | MW-2 | MW-2 |
| Northwest portion of the site next to the creek, west of debris. | ----- | TP-5, TP-6, TP-11, and TP-12 | ---- |
| West portion of site | SS-MGP1, SS-MGP2 | ----- | ----- |

***Notes:***
SS = surface soil sample
SB = Soil boring
MW = Shallow soil boring/monitoring well
BMW = Deep soil boring/bedrock monitoring well
TP = Test pit

Source: O'Brien & Gere Engineers, Inc.

Table 3-1
Three Star Anodizing Site
Wappingers Falls, New York
Ground water and surface water elevations

| Well/Location ID | Elevation Top of PVC Casing (ft above MSL) | Elevation Ground Surface Ground Surface (ft above MSL) | Measured Depth to Bottom of Well (feet below TOC) | Bottom of Well Elevation (ft above MSL) | Screen Interval Elevation Top (ft above MSL) | Screen Interval Elevation Bottom (ft above MSL) | Measured Depth to Water 12/7/2002 (feet) | Ground Water Elevation 12/7/2002 (ft above MSL) | Measured Depth to Water 12/9/2002 (feet) | Ground Water Elevation 12/9/2002 (ft above MSL) | Chng in Water Levels Between High and low Tides (feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 10.99 | 8.5 | 22.31 | -11.32 | 4.68 | -10.32 | 9.48 | 1.51 | 9.95 | 1.04 | 0.47 |
| MW-2 | 16.11 | 13.92 | 29.15 | -13.04 | 2.96 | -12.04 | 15.72 | 0.39 | 16.3 | -0.19 | 0.58 |
| MW-3 | 13.66 | 11.65 | 21.49 | -7.83 | 2.67 | -7.33 | 12.48 | 1.18 | 13.5 | 0.16 | 1.02 |
| MW-4 | 11.81 | 9.39 | 20.6 | -8.79 | 6.71 | -8.29 | 10.44 | 1.37 | 13.15 | -1.34 | 2.71 |
| MW-5 | 12.16 | 9.62 | 18.1 | -5.94 | 4.56 | -5.44 | 10.66 | 1.5 | 13.65 | -1.49 | 2.99 |
| MW-6 | 7.6 | 7.98 | 17.7 | -10.1 | 7.9 | -7.1 | | | | | |
| MW-7 | 3.08 | 3.7 | 17.02 | -13.94 | 2.06 | -12.94 | | | | | |
| MW-8 | 12.14 | 9.62 | 22.1 | -9.96 | 6.04 | -8.96 | 10.74 | 1.4 | 14.13 | -1.99 | 3.39 |
| MW-9 | 9 | 6.64 | 20.6 | -11.6 | 4.4 | -10.6 | 7.89 | 1.11 | 9.9 | -0.9 | 2.01 |
| MW-10 | 6.37 | 4.55 | 19.8 | -13.43 | 1.57 | -13.43 | 5.67 | 0.7 | 6.99 | -0.62 | 1.32 |
| MW-11 | 8.96 | 7.34 | 19.1 | -10.14 | 8.86 | -6.14 | 7.52 | 1.44 | 7.7 | 1.26 | 0.18 |
| MW-12 | 4.48 | 5.25 | 16.15 | -11.67 | 6.33 | -8.67 | | | | | |
| MW-13 | 17.22 | 15.47 | 26.9 | -9.68 | 10.32 | -4.68 | 16.24 | 0.98 | 15 | 2.22 | -1.24 |
| BMW-1 | 11.51 | 9.31 | 51.41 | -39.9 | -34.9 | -39.9 | 10.08 | 1.43 | 13.53 | -2.02 | 3.45 |
| BMW-2 | 8.58 | 7.38 | 67.39 | -58.81 | -53.81 | -58.81 | 10.52 | -1.94 | 9.07 | -0.49 | -1.45 |
| BMW-3 | 11.64 | 9.64 | 53.21 | -41.57 | -36.57 | -41.57 | 10.41 | 1.23 | 13.43 | -1.79 | 3.02 |
| Three Star Lagoon | | | | | | | | 1.2 | | 1.25 | -0.05 |
| East Bridge | | | | | | | 11.48 | | 16.19 | | 4.71 |
| West Bridge | | | | | | | 6.2 | | 11.1 | | 4.9 |

Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Water levels in the lagoon compared to tidal data

| ***Date [Time]*** | ***Hudson River @ Poughkeepsie*** | ***Tide reprsented*** | ***Creek Depth (ft)*** | ***Lagoon Level (ft)*** |
|---|---|---|---|---|
| 12/7/02 [14:30] | High tide [14:52] | High slack tide | 11 [06:20] | 1.20 High ebb tide [16:45] |
| 12/8/02 [15:33] | High tide [15:48] | High slack tide | 10 [07:15] | 1.28 [15:27] |
| 12/09/02 [08:41] | Low tide [10:30] | Low flow tide | 6 [11:10] | 1.25 [09:05] |

***Creek Depth: Water depths were obtained by measuring from distance between the bottom of the site bridge to the water surface (data in parentheses) and bathymetric data for that location.***

***Lagoon levels were measured at the staff gage installed for this investigation to measure changes in depth. Depths reported are not representative of total depth measurements.***

Tidal data for Hudson River obtained from Harbortides website (www.harbortides.com). Time identified in brackets [ ].

Source: O'Brien & Gere Engineers, Inc.

Table 4-1
Three Star Anodizing Site
Wappingers Falls, New York
Off-Site Surface Soil Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values

| | | | | Off-Site Location 1 | | | | | | | | Background | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample ID | SS-02 | | SS-02 | | SS-NR | | SS-NR | | SS-BK2 | | SS-BK2 | | SS-BK3 | | SS-BK3 | |
| | | | Sample date | 11-Jul-01 | | 11-Jul-01 | | 6-Dec-02 | | 6-Dec-02 | | 6-Dec-02 | | 6-Dec-02 | | 6-Dec-02 | | 6-Dec-02 | |
| | | | Sample depth (in) | 0-2 | | 0-24 | | 0-2 | | 0-24 | | 0-2 | | 0-24 | | 0-2 | | 0-24 | |
| | Screening Values Part 375 | | | | | | | | | | | | | | | | | | |
| Compound (mg/Kg) | Un | Eco | Max. Back. | | | | | | | | | | | | | | | | |
| 2-Methylnaphalene | n | n | 0.17 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Acenaphthene | 20 | 20 | 0.084 | --- | | --- | | 0.059 | J | --- | | --- | | --- | | --- | | --- | |
| Acenaphthylene | 100 | n | 0.054 | --- | | --- | | --- | | --- | | --- | | --- | | 0.054 | J | --- | |
| Anthracene | 100 | 0.1* | 0.17 | 0.039 | J | 0.061 | J | 0.12 | J | 0.050 | J | --- | | --- | | 0.075 | J | --- | |
| Benzo(a)anthracene | 1 | n | 0.60 | 0.20 | J | 0.29 | J | 0.28 | J | 0.26 | J | --- | | --- | | 0.40 | J | 0.18 | J |
| Benzo(a)pyrene | 1 | 2.6 | 0.59 | 0.17 | J | 0.24 | J | 0.27 | J | 0.25 | J | --- | | --- | | 0.46 | | 0.20 | J |
| Benzo(b)fluoranthene | 1 | n | 0.50 | 0.24 | J | 0.35 | J | 0.39 | J | 0.37 | J | 0.11 | J | 0.061 | J | 0.73 | | 0.30 | J |
| Benzo(ghi)perlyene | 100 | n | 0.44 | 0.098 | J | 0.12 | J | 0.14 | J | 0.14 | J | --- | | --- | | 0.29 | J | 0.16 | J |
| Benzo(k)fluoranthene | 0.8 | n | 0.22 | 0.084 | J | 0.12 | J | 0.14 | J | 0.14 | J | --- | | --- | | 0.2 | J | 0.095 | J |
| Butyl benzyl phthalate | n | n | 0.095 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Carbazole | n | n | 0.11 | --- | | --- | | 0.076 | J | --- | | --- | | --- | | --- | | --- | |
| Chrysene | 1 | n | 0.45 | 0.22 | J | 0.35 | J | 0.29 | J | 0.26 | J | 0.070 | J | --- | | 0.45 | J | 0.19 | J |
| Di-n-butyl phthalate | n | 200* | 0.78 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Dibenzo(a,h)anthracene | 0.33 | n | 0.14 | --- | | --- | | 0.040 | J | 0.046 | J | --- | | --- | | 0.080 | J | --- | |
| Dibenzofuran | n | n | 0.063 | --- | | --- | | 0.041 | J | --- | | --- | | --- | | --- | | --- | |
| Fluoranthene | 100 | 30 | 1.1 | 0.40 | | 0.56 | | 0.66 | | 0.44 | | --- | | --- | | 0.73 | | 0.28 | J |
| Fluorene | 30 | 30* | 0.076 | --- | | --- | | 0.049 | J | --- | | --- | | --- | | --- | | --- | |
| Indeno(1,2,3-cd)pyrene | 0.5 | n | 0.38 | 0.092 | J | 0.11 | J | 0.13 | J | 0.12 | J | --- | | --- | | 0.27 | J | 0.13 | J |
| Naphthalene | 12 | 0.1* | 0.81 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Phenanthrene | 100 | 0.1* | 0.85 | 0.23 | J | 0.33 | J | 0.65 | | 0.28 | J | --- | | --- | | 0.34 | J | 0.12 | J |
| Pyrene | 100 | 0.1* | 0.87 | 0.38 | J | 0.54 | | 0.62 | | 0.47 | | --- | | --- | | 0.87 | | 0.34 | J |
| Bis(2-ethylhexyl)phthalate | n | n | 2.4 | 0.093 | J | 0.063 | J | 0.046 | J | 0.050 | J | 0.073 | J | 0.11 | J | 0.22 | J | 0.13 | J |
| Total organic carbon | n | n | 69300 | 37500 | | 16800 | | 60800 | B | 90900 | B | 26900 | B | 11600 | B | 38100 | B | 8160 | B |
| %TOC | n | n | 6.9 | 3.8 | | 1.7 | | 6.1 | B | 9.1 | B | 2.7 | B | 1.2 | B | 3.8 | B | 0.8 | B |
| Percent solids (%) | n | n | 88 | 86 | | 83 | | 88 | | 84 | | 79 | | 77 | | 74 | | 81 | |
| Total PAHs | n | n | 7.2 | 2.2 | | 3.1 | | 3.8 | | 2.8 | | 0.2 | | 0.06 | | 4.9 | | 2.0 | |
| Total SVOCs | n | n | 7.5 | 2.2 | | 3.1 | | 4.0 | | 2.9 | | 0.3 | | 0.2 | | 5.2 | | 2.1 | |

Notes:
Concentrations presented in mg/Kg, except %TOC and percent solids. --- = not detected. Screening values: Part 375 screening values for unrestricted uses (Un) and commercial uses (Com); ecological (Eco) screening values obtained from Friday (1998). n = no screening value.
Max. Back. = Maximum background concentration (raw value).

Table 4-1
Three Star Anodizing Site
Wappingers Falls, New York
Off-Site Surface Soil Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values

| | | | | Background | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample ID | SS-BK4 | | SS-BK4 | | SS-BK5 | | SS-BK5 | | SS-BK6 | | SS-BK6 | | SS-BK7 | | SS-BK7 | |
| | | | Sample date | 6-Dec-02 | | 6-Dec-02 | | 7-Dec-02 | | 7-Dec-02 | | 7-Dec-02 | | 7-Dec-02 | | 6-Dec-02 | | 6-Dec-02 | |
| | | | Sample depth (in) | 0-2 | | 0-24 | | 0-2 | | 0-24 | | 0-2 | | 0-24 | | 0-2 | | 0-24 | |
| | Screening Values Part 375 | | | | | | | | | | | | | | | | | | |
| Compound (mg/Kg) | Un | Eco | Back. | | | | | | | | | | | | | | | | |
| 2-Methylnaphalene | n | n | 0.17 | --- | | --- | | 0.090 | J | 0.060 | J | --- | | 0.17 | J | --- | | --- | |
| Acenaphthene | 20 | 20 | 0.084 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Acenaphthylene | 100 | n | 0.054 | --- | | --- | | 0.044 | J | --- | | --- | | --- | | --- | | --- | |
| Anthracene | 100 | 0.1* | 0.17 | 0.070 | J | --- | | 0.15 | J | --- | | 0.048 | J | --- | | --- | | --- | |
| Benzo(a)anthracene | 1 | n | 0.6 | 0.28 | J | 0.12 | J | 0.60 | | 0.12 | J | 0.17 | J | 0.21 | J | 0.074 | J | --- | |
| Benzo(a)pyrene | 1 | 2.6 | 0.59 | 0.25 | J | 0.12 | J | 0.59 | | 0.12 | J | 0.16 | J | 0.23 | J | 0.084 | J | --- | |
| Benzo(b)fluoranthene | 1 | n | 0.5 | 0.45 | | 0.23 | J | 0.94 | | 0.27 | J | 0.26 | J | 0.38 | J | 0.15 | J | 0.068 | J |
| Benzo(ghi)perlyene | 100 | n | 0.44 | 0.16 | J | 0.093 | J | 0.44 | | 0.095 | J | 0.081 | J | 0.11 | J | 0.055 | J | --- | |
| Benzo(k)fluoranthene | 0.8 | n | 0.22 | 0.12 | J | 0.070 | J | 0.22 | J | 0.064 | J | 0.076 | J | 0.11 | J | --- | | --- | |
| Butyl benzyl phthalate | n | n | 0.095 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Carbazole | n | n | 0.11 | --- | | --- | | 0.048 | J | --- | | --- | | --- | | --- | | --- | |
| Chrysene | 1 | n | 0.45 | 0.31 | J | 0.16 | J | 0.68 | | 0.30 | J | 0.18 | J | 0.22 | J | 0.097 | J | --- | |
| Di-n-butyl phthalate | n | 200* | 0.78 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Dibenzo(a,h)anthracene | 0.33 | n | 0.14 | 0.045 | J | --- | | 0.14 | J | --- | | --- | | --- | | --- | | --- | |
| Dibenzofuran | n | n | 0.063 | --- | | --- | | --- | | --- | | --- | | 0.063 | J | --- | | --- | |
| Fluoranthene | 100 | 30 | 1.1 | 0.60 | | 0.23 | J | 1.1 | | 0.24 | J | 0.29 | J | 0.30 | J | 0.15 | J | 0.063 | J |
| Fluorene | 30 | 30* | 0.076 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Indeno(1,2,3-cd)pyrene | 0.5 | n | 0.38 | 0.15 | J | 0.086 | J | 0.38 | J | 0.078 | J | 0.075 | J | 0.12 | J | 0.049 | J | --- | |
| Naphthalene | 12 | 0.1* | 0.81 | --- | | --- | | 0.076 | J | --- | | --- | | 0.081 | J | --- | | --- | |
| Phenanthrene | 100 | 0.1* | 0.85 | 0.31 | J | 0.18 | J | 0.7 | | 0.22 | J | 0.22 | J | 0.31 | J | 0.069 | J | --- | |
| Pyrene | 100 | 0.1* | 0.87 | 0.51 | | 0.25 | J | 1.1 | | 0.22 | J | 0.31 | J | 0.29 | J | 0.14 | J | 0.056 | J |
| Bis(2-ethylhexyl)phthalate | n | n | 2.4 | 0.49 | | 0.17 | J | 0.18 | J | 0.15 | J | 0.14 | J | 0.16 | J | 0.23 | J | 0.051 | J |
| Total organic carbon | n | n | 69300 | 35900 | B | 34400 | B | 38500 | B | 69300 | B | 16400 | B | 18700 | B | 19500 | B | 13600 | B |
| %TOC | n | n | 6.9 | 3.6 | B | 3.4 | B | 3.9 | B | 6.9 | B | 1.6 | B | 1.9 | B | 2.0 | B | 1.4 | B |
| Percent solids (%) | n | n | 88 | 75 | | 81 | | 78 | | 83 | | 82 | | 85 | | 78 | | 84 | |
| Total PAHs | n | n | 7.2 | 3.3 | | 1.5 | | 7.2 | | 1.7 | | 1.9 | | 2.4 | | 0.9 | | 0.2 | |
| Total SVOCs | n | n | 7.5 | 3.7 | | 1.7 | | 7.5 | | 1.9 | | 2.0 | | 2.8 | | 1.1 | | 0.2 | |

Notes:
Concentrations presented in mg/Kg, except %TOC and percent solids. --- = not detected. Screening values: Part 375 screening values for unrestricted uses (Un) and commercial uses (Com); ecological (Eco) screening values obtained from Friday (1998). n = no screening value.
Max. Back. = Maximum background concentration (raw value).

Table 4-1
Three Star Anodizing Site
Wappingers Falls, New York
Off-Site Surface Soil Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values

| | | | | Background | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample ID | SS-BK8 | | SS-BK8 | | SS-BK9 | | SS-BK9 | | SS-BK10 | | SS-BK10 | |
| | | | Sample date | 6-Dec-02 | | 6-Dec-02 | | 6-Dec-02 | | 6-Dec-02 | | 6-Dec-02 | | 6-Dec-02 | |
| | | | Sample depth (in) | 0-2 | | 0-24 | | 0-2 | | 0-24 | | 0-2 | | 0-24 | |
| | Screening Values Pat 375 | | | | | | | | | | | | | | |
| Compound (mg/Kg) | Un | Eco | Max. Back. | | | | | | | | | | | | |
| 2-Methylnaphalene | n | n | 0.17 | --- | | --- | | --- | | --- | | --- | | --- | |
| Acenaphthene | 20 | 20 | 0.084 | --- | | --- | | --- | | --- | | --- | | 0.084 | J |
| Acenaphthylene | 100 | n | 0.054 | --- | | --- | | --- | | --- | | --- | | --- | |
| Anthracene | 100 | 0.1* | 0.17 | --- | | --- | | 0.048 | J | --- | | --- | | 0.17 | J |
| Benzo(a)anthracene | 1 | n | 0.6 | 0.16 | J | 0.075 | J | 0.30 | J | 0.13 | J | 0.15 | J | 0.36 | J |
| Benzo(a)pyrene | 1 | 2.6 | 0.59 | 0.17 | J | 0.076 | J | 0.31 | J | 0.13 | J | 0.15 | J | 0.31 | J |
| Benzo(b)fluoranthene | 1 | n | 0.5 | 0.27 | J | 0.14 | J | 0.50 | | 0.22 | J | 0.25 | J | 0.48 | |
| Benzo(ghi)perlyene | 100 | n | 0.44 | 0.14 | J | 0.041 | J | 0.16 | J | 0.10 | J | 0.15 | J | 0.12 | J |
| Benzo(k)fluoranthene | 0.8 | n | 0.22 | 0.079 | J | 0.041 | J | 0.17 | J | 0.076 | J | 0.072 | J | 0.18 | J |
| Butyl benzyl phthalate | n | n | 0.095 | --- | | --- | | --- | | --- | | 0.095 | J | --- | |
| Carbazole | n | n | 0.11 | --- | | --- | | --- | | --- | | --- | | 0.11 | J |
| Chrysene | 1 | n | 0.45 | 0.19 | J | 0.088 | J | 0.35 | J | 0.15 | J | 0.19 | J | 0.39 | |
| Di-n-butyl phthalate | n | 200* | 0.78 | 0.78 | | --- | | --- | | --- | | --- | | --- | |
| Dibenzo(a,h)anthracene | 0.33 | n | 0.14 | --- | | --- | | 0.047 | J | --- | | --- | | 0.042 | J |
| Dibenzofuran | n | n | 0.063 | --- | | --- | | --- | | --- | | --- | | 0.050 | J |
| Fluoranthene | 100 | 30 | 1.1 | 0.26 | J | 0.14 | J | 0.60 | | 0.25 | J | 0.27 | J | 0.82 | |
| Fluorene | 30 | 30* | 0.076 | --- | | --- | | --- | | --- | | --- | | 0.076 | J |
| Indeno(1,2,3-cd)pyrene | 0.5 | n | 0.38 | 0.12 | J | 0.043 | J | 0.16 | J | 0.088 | J | 0.12 | J | 0.12 | J |
| Naphthalene | 12 | 0.1* | 0.81 | --- | | --- | | --- | | --- | | --- | | --- | |
| Phenanthrene | 100 | 0.1* | 0.85 | 0.13 | J | 0.088 | J | 0.26 | J | 0.12 | J | 0.16 | J | 0.85 | |
| Pyrene | 100 | 0.1* | 0.87 | 0.32 | J | 0.14 | J | 0.58 | | 0.24 | J | 0.32 | J | 0.77 | |
| Bis(2-ethylhexyl)phthalate | n | n | 2.4 | 2.4 | | 0.12 | J | 0.38 | J | 0.16 | J | 0.34 | J | 0.11 | J |
| Total organic carbon | n | n | 69300 | 35100 | B | 18100 | B | 25300 | B | 34000 | B | 18000 | B | 25300 | B |
| %TOC | n | n | 6.9 | 3.5 | B | 1.8 | B | 2.5 | B | 3.4 | B | 1.8 | B | 2.5 | B |
| Percent solids (%) | n | n | 88 | 80 | | 86 | | 81 | | 88 | | 82 | | 87 | |
| Total PAHs | n | n | 7.2 | 1.8 | | 0.9 | | 3.5 | | 1.5 | | 1.8 | | 4.8 | |
| Total SVOCs | n | n | 7.5 | 5.0 | | 1.0 | | 3.9 | | 1.7 | | 2.3 | | 5.0 | |

Notes:
Concentrations presented in mg/Kg, except %TOC and percent solids. --- = not detected. Screening values: Part 375 screening values for unrestricted uses (Un) and commercial uses (Com); ecological (Eco) screening values obtained from Friday (1998). n = no screening value.
Max. Back. = Maximum background concentration (raw value).

Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Off-Site Surface Soil Samples
Detected Inorganics Concentrations Compared to Screening Values

| | | | | | Off-Site Location 1 | | | | Background | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample ID | SS-02 | SS-02 | SS-NR | SS-NR | SS-BK2 | SS-BK2 | SS-BK3 | SS-BK3 |
| | | | | Sample date | 11-Jul-01 | 11-Jul-01 | 6-Dec-02 | 6-Dec-02 | 6-Dec-02 | 6-Dec-02 | 6-Dec-02 | 6-Dec-02 |
| | | | | Sample depth (in) | 0-2 | 0-24 | 0-2 | 0-24 | 0-2 | 0-24 | 0-2 | 0-24 |
| | Part 375 Screening Values | | | Max. | | | | | | | | |
| Parameter (mg/Kg) | Un | Res | Eco | Back. | | | | | | | | |
| Aluminum | n | --- | n | 17000 | 6030 | 7910 | 4610 | 7910 | 15100 | 14900 | 14400 | 17000 |
| Antimony | n | --- | n | 0.89 J | 0.49 J | 0.36 J | --- | --- | --- | --- | --- | --- |
| Arsenic | 13 | 16 | 13 | **[22^]** | 6.2 | 11 | 11 | [14] | 11 | 11 | 12 | 8.8 |
| Barium | 350 | --- | 433 | 135 | 33 J | 43 J | 75 J | 91 J | 110 | 108 J | 116 | 121 |
| Beryllium | 7.2 | --- | 10 | 0.84 J | 0.37 J | 0.49 J | 0.36 J | 0.58 J | 0.84 J | 0.77 J | 0.71 J | 0.72 J |
| Cadmium | 2.5 | 2.5/4.3 | 4 | **[5.4^]** | [2.8] | **[11^]** | 0.99 J | 0.99 J | 0.51 J | 0.42 J | 1.2 J | 0.80 J |
| Calcium | n | --- | n | 13400 | 58400 | 27900 | 45800 | 8520 | 971 J | 997 J | 3800 | 2790 |
| Chromium | 30 | --- | 41 | 22 | 19 | 19 | 13 | 20 | 16 | 16 | 20 | 20 |
| Chromium - hexavalent | 1 | 22 | 1 | [4.5 J] | --- | --- | --- | --- | --- | --- | [4.5 J] | --- |
| Cobalt | n | --- | n | 10 J | 5.2 J | 8.3 J | 6.0 J | 11 J | 9.3 J | 9.5 J | 9.5 J | 10 J |
| Copper | 50 | 270 | 50 | [79] | [204] | [152] | [61] | [125] | 26 | 27 | [79] | [66] |
| Iron | n | --- | n | 32300 | 17700 | 24700 | 22100 | 26400 | 24700 | 24600 | 27500 J | 32300 |
| Lead | 63 | 400 | 63 | **[497^]** | [69] | **[418^]** | **[418 J^]** | [348 J] | 36 | 43 J | [308] | [152] |
| Magnesium | n | --- | n | 25700 | 34600 | 18300 | 26600 | 6660 | 3910 | 3730 | 5010 | 5310 |
| Manganese | 1600 | --- | 1600 | 1240 | 391 | 525 | 319 J | 490 J | 1190 | 1290 J | 1100 | 1080 |
| Mercury | 0.18 | 0.81 | 0.18 | [0.81] | [0.67] | [0.41] | **[1.2 J^]** | **[1.4 J^]** | 0.12 J | 0.17 J | [0.50] | [0.31] |
| Nickel | 30 | --- | 30 | 28 | 23 | 22 | 19 | 26 | 21 | 21 | 28 | 25 |
| Potassium | n | --- | n | 1090 J | 655 J | 877 | 655 J | 782 J | 549 J | 582 J | 890 J | 726 J |
| Selenium | 3.9 | --- | 3.9 | 1.7 | 0.48 J | 1.2 | 0.79 J | 0.98 J | 1.6 | 1.5 | 1.7 | 0.98 J |
| Silver | 2 | --- | 2 | 0.47 J | --- | --- | 0.28 J | --- | --- | --- | --- | --- |
| Sodium | n | --- | n | 188 J | 67 J | 50 J | 75 J | 63 J | 50 J | 43 J | 54 J | 56 J |
| Thallium | n | --- | n | 2.0 J | --- | --- | --- | --- | 2.0 J | 1.7 J | --- | 1.4 J |
| Vandadium | n | --- | n | 48 | 30 | 28 | 32 | 28 | 20 | 23 | 48 | 34 |
| Zinc | 109 | 2200 | 109 | [525] | [356] | [1620] | [255 J] | [247 J] | 72 | 78 J | [241] | [149] |
| Cyanide - total | 27 | --- | n | 2.9 | --- | --- | --- | --- | 2.7 | 2.9 | --- | --- |
| Total organic carbon | n | n | n | 69300 B | 37500 | 16800 | 60800 B | 90900 B | 26900 B | 11600 B | 38100 B | 8160 B |
| %TOC | n | n | n | 6.9 B | 3.8 | 1.7 | 6.1 B | 9.1 B | 2.7 B | 1.2 B | 3.8 B | 0.8 B |
| Percent solids (%) | n | n | n | 88 | 87 | 83 | 88 | 84 | 79 | 77 | 74 | 81 |

Notes:
Concentrations presented in mg/Kg, except %TOC and percent solids. --- = not detected. Screening values: Part 375 screening values for unrestricted uses (Un) and residential uses (Res); ecological (Eco) screening values obtained from Friday (1998). n = no screening value. Max. Back. = Maximum background.
Concentrations in brackets, [ ], exceed the screening value for unrestricted uses; concentrations in bold font with a ^ exceed the screening value for commercial uses.

Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Off-Site Surface Soil Samples
Detected Inorganics Concentrations Compared to Screening Values

| | | | | | Background | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample ID | SS-BK4 | SS-BK4 | SS-BK5 | SS-BK5 | SS-BK6 | SS-BK6 | SS-BK7 | SS-BK7 |
| | | | | Sample date | 6-Dec-02 | 6-Dec-02 | 7-Dec-02 | 7-Dec-02 | 7-Dec-02 | 7-Dec-02 | 6-Dec-02 | 6-Dec-02 |
| | | | | Sample depth (in) | 0-2 | 0-24 | 0-2 | 0-24 | 0-2 | 0-24 | 0-2 | 0-24 |
| | Part 375 Screening Values | | | Max. | | | | | | | | |
| Parameter (mg/Kg) | Un | Res | Eco | Back. | | | | | | | | |
| Aluminum | n | --- | n | 17000 | 12300 | 13500 | 9240 | 6310 | 11400 | 13900 | 10700 | 14400 |
| Antimony | n | --- | n | 0.89 J | --- | --- | --- | 0.89 J | --- | --- | --- | --- |
| Arsenic | 13 | 16 | 13 | **[22^]** | [16] | **[21^]** | 11 | [14] | 10 | **[22^]** | 10 | **[20^]** |
| Barium | 350 | --- | 433 | 135 | 103 | 122 | 63 J | 51 J | 49 | 83 | 66 J | 84 J |
| Beryllium | 7.2 | --- | 10 | 0.84 J | 0.66 J | 0.77 J | 0.54 J | 0.51 J | 0.47 J | 0.64 J | 0.52 J | 0.67 J |
| Cadmium | 2.5 | 2.5/4.3 | 4 | **[5.4^]** | **[5.4^]** | 0.99 J | 1.0 J | 0.63 J | 0.41 J | 0.61 J | 0.41 J | 0.46 J |
| Calcium | n | --- | n | 13400 | 5480 | 5450 | 13400 | 4670 | 1660 | 3270 | 25000 | 2140 |
| Chromium | 30 | --- | 41 | 22 | 20 | 19 | 15 | 22 | 13 | 16 | 14 | 17 |
| Chromium - hexavalent | 1 | 22 | 1 | [4.5 J] | --- | --- | --- | --- | --- | --- | --- | --- |
| Cobalt | n | --- | n | 10 J | 9.1 J | 9.9 J | 8.7 J | 7.5 J | 8.4 J | 9.1 J | 6.3 J | 8.6 J |
| Copper | 50 | 270 | 50 | [79] | [69] | [63] | [51] | [52] | 31 | 34 | 22 | 26 |
| Iron | n | --- | n | 32300 | 24800 | 29400 | 24000 | 15900 | 24800 | 27400 | 20600 | 27400 |
| Lead | 63 | 400 | 63 | **[497^]** | [229] | [211] | [366 J] | **[444 J^]** | [66] | [147] | [111 J] | [124 J] |
| Magnesium | n | --- | n | 25700 | 5760 | 4710 | 10400 | 3330 | 4690 | 5450 | 17300 | 5070 |
| Manganese | 1600 | --- | 1600 | 1240 | 973 | 1240 | 583 J | 328 J | 770 | 961 | 709 J | 940 J |
| Mercury | 0.18 | 0.81 | 0.18 | [0.81] | [0.54] | [0.54] | [0.25 J] | [0.38 J] | 0.17 | [0.19] | [0.28 J] | [0.36 J] |
| Nickel | 30 | --- | 30 | 28 | 24 | 23 | 26 | 20 | 21 | 23 | 19 | 22 |
| Potassium | n | --- | n | 1090 J | 1090 J | 791 J | 1030 J | 695 J | 893 J | 875 J | 903 J | 737 J |
| Selenium | 3.9 | --- | 3.9 | 1.7 | 0.84 J | 0.94 J | 0.91 J | 0.63 J | 0.53 J | 0.90 J | 0.83 J | 0.99 J |
| Silver | 2 | --- | 2 | 0.47 J | 0.42 J | 0.38 J | --- | 0.47 J | --- | 0.34 J | --- | --- |
| Sodium | n | --- | n | 188 J | 64 J | 61 J | 57 J | 140 J | 62 J | 49 J | 51 J | 87 J |
| Thallium | n | --- | n | 2.0 J | 1.2 J | 1.1 J | --- | --- | --- | --- | --- | --- |
| Vandadium | n | --- | n | 48 | 33 | 25 | 36 | 26 | 19 | 24 | 32 | 22 |
| Zinc | 109 | 2200 | 109 | [525] | [525] | [165] | [362 J] | [180 J] | 99 | [125] | [138 J] | [162 J] |
| Cyanide - total | 27 | --- | n | 2.9 | --- | --- | --- | --- | --- | --- | --- | --- |
| Total organic carbon | n | n | n | 69300 B | 35900 B | 34400 B | 38500 | 69300 B | 16400 B | 18700 B | 19500 B | 13600 B |
| %TOC | n | n | n | 6.9 B | 3.6 B | 3.4 B | 3.9 B | 6.9 B | 1.6 B | 1.9 B | 2.0 B | 1.4 B |
| Percent solids (%) | n | n | n | 88 | 75 | 81 | 78 | 83 | 82 | 85 | 78 | 84 |

Notes:
Concentrations presented in mg/Kg, except %TOC and percent solids. --- = not detected. Screening values: Part 375 screening values for unrestricted uses (Un) and residential uses (Res); ecological (Eco) screening values obtained from Friday (1998). n = no screening value. Max. Back. = Maximum background.
Concentrations in brackets, [ ], exceed the screening value for unrestricted uses; concentrations in bold font with a ^ exceed the screening value for commercial uses.

Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Off-Site Surface Soil Samples
Detected Inorganics Concentrations Compared to Screening Values

| | | | | | Background | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample ID | SS-BK8 | SS-BK8 | SS-BK9 | SS-BK9 | SS-BK10 | SS-BK10 |
| | | | | Sample date | 6-Dec-02 | 6-Dec-02 | 6-Dec-02 | 6-Dec-02 | 6-Dec-02 | 6-Dec-02 |
| | | | | Sample depth (in) | 0-2 | 0-24 | 0-2 | 0-24 | 0-2 | 0-24 |
| | Part 375 Screening Values | | | Max. | | | | | | |
| Parameter (mg/Kg) | Un | Res | Eco | Back. | | | | | | |
| Aluminum | n | --- | n | 17000 | 9960 | 10100 | 8290 | 9910 | 10800 | 11100 |
| Antimony | n | --- | n | 0.89 J | --- | --- | --- | --- | --- | --- |
| Arsenic | 13 | 16 | 13 | **[22^]** | 7.2 | 9.5 | 5.8 | 6.4 | 6.1 | 6.7 |
| Barium | 350 | --- | 433 | 135 | 135 | 101 | 45 J | 62 | 51 | 53 |
| Beryllium | 7.2 | --- | 10 | 0.84 J | 0.48 J | 0.52 J | 0.38 J | 0.46 J | 0.47 J | 0.47 J |
| Cadmium | 2.5 | 2.5/4.3 | 4 | **[5.4^]** | 1.1 J | 0.71 J | 0.71 J | 0.83 J | 0.99 J | 0.68 J |
| Calcium | n | --- | n | 13400 | 17800 | 11200 | 41000 | 18700 | 15800 | 11700 |
| Chromium | 30 | --- | 41 | 22 | 22 | 15 | 17 | 16 | 17 | 16 |
| Chromium - hexavalent | 1 | 22 | 1 | [4.5 J] | --- | --- | --- | --- | --- | --- |
| Cobalt | n | --- | n | 10 J | 7.5 J | 8.2 J | 6.7 J | 8.0 J | 8.5 J | 8.9 J |
| Copper | 50 | 270 | 50 | [79] | 34 | 38 | 30 | 36 | 36 | 34 |
| Iron | n | --- | n | 32300 | 22400 | 22200 | 21300 | 24300 | 25400 | 25300 |
| Lead | 63 | 400 | 63 | **[497^]** | **[497^]** | [328] | [180] | [216] | [268] | [216] |
| Magnesium | n | --- | n | 25700 | 11900 | 7340 | 25700 | 12200 | 12400 | 9650 |
| Manganese | 1600 | --- | 1600 | 1240 | 637 | 927 | 527 | 649 | 713 | 672 |
| Mercury | 0.18 | 0.81 | 0.18 | [0.81] | [0.64] | [0.52] | [0.19] | [0.33] | [0.42] | [0.81] |
| Nickel | 30 | --- | 30 | 28 | 26 | 21 | 21 | 22 | 26 | 22 |
| Potassium | n | --- | n | 1090 J | 971 J | 936 J | 995 J | 806 J | 928 J | 749 J |
| Selenium | 3.9 | --- | 3.9 | 1.7 | 0.96 J | 0.73 J | --- | --- | --- | --- |
| Silver | 2 | --- | 2 | 0.47 J | --- | --- | 0.30 J | --- | --- | --- |
| Sodium | n | --- | n | 188 J | 63 J | 54 J | 188 J | 67 J | 68 J | 183 J |
| Thallium | n | --- | n | 2.0 J | 1.1 J | 1.5 J | --- | --- | 1.0 J | --- |
| Vandadium | n | --- | n | 48 | 33 | 20 | 23 | 23 | 37 | 24 |
| Zinc | 109 | 2200 | 109 | [525] | [432] | [303] | [147] | [198] | [228] | [240] |
| Cyanide - total | 27 | --- | n | 2.9 | --- | --- | --- | --- | --- | --- |
| Total organic carbon | n | n | n | 69300 B | 35100 B | 18100 B | 25300 B | 34000 B | 18000 B | 25300 B |
| %TOC | n | n | n | 6.9 B | 3.5 B | 1.8 B | 2.5 B | 3.4 B | 1.8 B | 2.5 B |
| Percent solids (%) | n | n | n | 88 | 80 | 86 | 81 | 88 | 82 | 87 |

Notes:
Concentrations presented in mg/Kg, except %TOC and percent solids. --- = not detected. Screening values: Part 375 screening values for unrestricted uses (Un) and residential uses (Res); ecological (Eco) screening values obtained from Friday (1998). n = no screening value. Max. Back. = Maximum background.
Concentrations in brackets, [ ], exceed the screening value for unrestricted uses; concentrations in bold font with a ^ exceed the screening value for commercial uses.

Table 5-1
Three Star Anodizing Site
Wappingers Falls, New York
Soil Samples
Frequency and Maximum Concentrations of PCBs and Pesticides Detected Above Part 375 Screening Values for Unrestricted Uses.

| | Part 375 Screening Value | | Main Site | | | | | | MGP Site | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Surface/Shallow | | | Subsurface | | | Surface/Shallow | | | Subsurface | | |
| Compound (mg/Kg) | Un | Com | Freq | Max | Loc | Freq | Max | Loc | Freq | Max | Loc | Freq | Max | Loc |
| 4,4'-DDD | 0.0033 | 92 | 2 of 17 | 0.005 | SS-01, SS-11 | 1 of 4 | 0.007 | MW-6, 6 to 8 ft | 1 of 2 | 0.09 | SS-13 | 4 of 7 | 0.03 | TP-4 Cinders |
| 4,4'-DDE | 0.0033 | 62 | 5 of 17 | 0.01 | SS-01 | 0 of 4 | -- | -- | 0 of 2 | -- | -- | 1 of 7 | 0.01 | MW-5, 2 to 4 ft |
| 4,4'-DDT | 0.0033 | 47 | 10 of 17 | 0.03 | SS-01 | 0 of 4 | -- | -- | 2 of 2 | 0.02 | SS-13 | 1 of 7 | 0.02 | SB-4-01 |
| Dieldrin | 0.005 | 1.4 | 0 of 17 | -- | -- | 0 of 4 | -- | -- | 0 of 2 | -- | -- | 1 of 7 | 0.008 | MW-5, 16 to 18 ft |
| Aroclor 1260 | 0.1 | 1 | 1 of 17 | 0.2 | SS-01 | 0 of 4 | -- | -- | 1 of 2 | 0.2 | SS-13 | 0 of 7 | -- | -- |
| Endrin | 0.014 | 89 | 0 of 17 | -- | -- | 0 of 4 | -- | -- | 1 of 2 | 0.02 | SS-14 | 0 of 7 | -- | -- |

Notes:
Concentrations presented in mg/Kg, dry weight.
Part 375 screening values are presented for unrestricted uses (Un) and commercial uses (Com). No compounds were detected above the Part 375 screening values for commercial uses.
Freq = frequency of detection above Part 375 screening value for unrestricted uses.
Max = maximum concentration detection; Loc = location of maximum detetected concentration.
-- = compound not detected above Part 375 screening value for unrestricted uses.

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# Table 5-2
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Volatile Organic Compound Data

| Sample ID | MW-7 | SS-01 | SS-01 | SS-02 | SS-02 | SS-03 | SS-04 |
|---|---|---|---|---|---|---|---|
| Sample Date | 05/03/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 |
| | 0 - 6 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 8 in. | 0 - 20 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.004 J | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.1 | 0.047 |
| 1,1,2,2-Tetrachloroethane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| 1,1,2-Trichloroethane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| 1,1-Dichloroethane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.005 J |
| 1,1-Dichloroethene | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| 1,2-Dichloroethane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| 1,2-Dichloropropane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| 2-Butanone (MEK) | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| 2-Hexanone | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| 4-Methyl-2-pentanone (MIBK) | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Acetone | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Benzene | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Bromodichloromethane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Bromoform | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Bromomethane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Carbon disulfide | 0.001 J | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Carbon tetrachloride | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Chlorobenzene | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Chloroethane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Chloroform | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Chloromethane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Dibromochloromethane | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Ethylbenzene | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Methylene chloride | 0.011 U | 0.003 J | 0.003 J | 0.002 J | 0.012 U | 0.004 J | 0.008 J |
| Styrene | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Tetrachloroethene | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.005 J | 0.011 U | 0.031 U |
| Toluene | 0.002 J | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Trichloroethene | 0.033 | 0.021 U | 0.002 J | 0.012 U | 0.012 U | 0.002 J | 0.4 |
| Vinyl chloride | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Xylene (total) | 0.018 | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| cis-1,2-Dichloroethene | 0.001 J | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.01 J |
| cis-1,3-Dichloropropylene | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| trans-1,2-Dichloroethene | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| trans-1,3-Dichloropropene | 0.011 U | 0.021 U | 0.018 U | 0.012 U | 0.012 U | 0.011 U | 0.031 U |
| Total organic carbon (mg/Kg) | 97500 J | --- | 123000 J | 37500 | 16800 | 84300 | 46900 |
| Percent solids (%) | 90.5 | 46.5 | 55.1 | 86.4 | 83.2 | 90.8 | 89 |

NOTES: U - not detected, J - estimated value.

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# Table 5-2
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Volatile Organic Compound Data

| Sample ID | SS-05 | SS-05 | SS-06 | SS-07 | SS-08 | SS-09 | SS-09 |
|---|---|---|---|---|---|---|---|
| Sample Date | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 |
| Units | 0 - 2 in. mg/Kg | 0 - 15 in. mg/Kg | 0 - 2 in. mg/Kg | 2 - 4 in. mg/Kg | 2 - 4 in. mg/Kg | 0 - 2 in. mg/Kg | 0 - 15 in. mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| 1,1,2,2-Tetrachloroethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| 1,1,2-Trichloroethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| 1,1-Dichloroethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| 1,1-Dichloroethene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| 1,2-Dichloroethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| 1,2-Dichloropropane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| 2-Butanone (MEK) | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| 2-Hexanone | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Acetone | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Benzene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Bromodichloromethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Bromoform | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Bromomethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Carbon disulfide | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Carbon tetrachloride | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Chlorobenzene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Chloroethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Chloroform | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Chloromethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Dibromochloromethane | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Ethylbenzene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Methylene chloride | 0.011 U | 0.011 U | 0.002 J | 0.011 U | 0.019 J | 0.001 J | 0.003 J |
| Styrene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Tetrachloroethene | 0.011 U | 0.011 U | 0.012 U | 0.004 J | 0.072 U | 0.012 U | 0.001 J |
| Toluene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Trichloroethene | 0.011 U | 0.011 U | 0.001 J | 0.018 | 0.072 U | 0.012 U | 0.001 J |
| Vinyl chloride | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Xylene (total) | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| cis-1,2-Dichloroethene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| cis-1,3-Dichloropropylene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| trans-1,2-Dichloroethene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| trans-1,3-Dichloropropene | 0.011 U | 0.011 U | 0.012 U | 0.011 U | 0.072 U | 0.012 U | 0.011 U |
| Total organic carbon (mg/Kg) | 9660 | 28700 | 39100 | 38500 | 25500 | 20500 | 14400 |
| Percent solids (%) | 89.4 | 90.3 | 81.2 | 95.2 | 91.1 | 82.3 | 90.3 |

NOTES: U - not detected, J - estimated value.



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# Table 5-2
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Volatile Organic Compound Data

| Sample ID | SS-10 | SS-11 | SS-11 | SS-12 | SS-12 | SS-15 | SS-16 |
|---|---|---|---|---|---|---|---|
| Sample Date | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 |
| | 12 - 14 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 17 in. | 0 - 2 in. | 3 - 5 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| 1,1,2,2-Tetrachloroethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| 1,1,2-Trichloroethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| 1,1-Dichloroethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| 1,1-Dichloroethene | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| 1,2-Dichloroethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| 1,2-Dichloropropane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| 2-Butanone (MEK) | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| 2-Hexanone | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Acetone | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Benzene | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Bromodichloromethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Bromoform | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Bromomethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Carbon disulfide | 0.001 J | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Carbon tetrachloride | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Chlorobenzene | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Chloroethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Chloroform | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Chloromethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Dibromochloromethane | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Ethylbenzene | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Methylene chloride | 0.004 J | 0.002 J | 1.5 U | 0.007 J | 0.002 J | 0.002 J | 0.003 J |
| Styrene | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Tetrachloroethene | 0.039 | 0.05 | 43 | 0.012 | 0.019 | 0.01 U | 0.011 U |
| Toluene | 0.012 U | 0.013 U | 1.5 U | 0.001 J | 0.011 U | 0.01 U | 0.011 U |
| Trichloroethene | 0.015 | 0.013 U | 0.34 J | 0.022 | 0.002 J | 0.01 U | 0.011 U |
| Vinyl chloride | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Xylene (total) | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| cis-1,2-Dichloroethene | 0.03 | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| cis-1,3-Dichloropropylene | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| trans-1,2-Dichloroethene | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| trans-1,3-Dichloropropene | 0.012 U | 0.013 U | 1.5 U | 0.011 U | 0.011 U | 0.01 U | 0.011 U |
| Total organic carbon (mg/Kg) | 62100 | 86800 | 22100 | 40800 | 5310 | 15300 | 11900 |
| Percent solids (%) | 83 | 78.6 | 84.1 | 89.5 | 91.3 | 95.8 | 95.1 |

NOTES: U - not detected, J - estimated value.

O'BRIEN & GERE ENGINEERS, INC.

# Table 5-2
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Volatile Organic Compound Data

| Compound | Sample ID | SS-17 | SS-18 |
|---|---|---|---|
| | Sample Date | 07/11/01 | 07/11/01 |
| | | 2 - 4 in. | 0 - 10 in. |
| | Units | mg/Kg | mg/Kg |
| 1,1,1-Trichloroethane | | 0.011 U | 0.011 U |
| 1,1,2,2-Tetrachloroethane | | 0.011 U | 0.011 U |
| 1,1,2-Trichloroethane | | 0.011 U | 0.011 U |
| 1,1-Dichloroethane | | 0.011 U | 0.011 U |
| 1,1-Dichloroethene | | 0.011 U | 0.011 U |
| 1,2-Dichloroethane | | 0.011 U | 0.011 U |
| 1,2-Dichloropropane | | 0.011 U | 0.011 U |
| 2-Butanone (MEK) | | 0.011 U | 0.011 U |
| 2-Hexanone | | 0.011 U | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | | 0.011 U | 0.011 U |
| Acetone | | 0.011 U | 0.011 U |
| Benzene | | 0.011 U | 0.011 U |
| Bromodichloromethane | | 0.011 U | 0.011 U |
| Bromoform | | 0.011 U | 0.011 U |
| Bromomethane | | 0.011 U | 0.011 U |
| Carbon disulfide | | 0.011 U | 0.011 U |
| Carbon tetrachloride | | 0.011 U | 0.011 U |
| Chlorobenzene | | 0.011 U | 0.011 U |
| Chloroethane | | 0.011 U | 0.011 U |
| Chloroform | | 0.011 U | 0.011 U |
| Chloromethane | | 0.011 U | 0.011 U |
| Dibromochloromethane | | 0.011 U | 0.011 U |
| Ethylbenzene | | 0.011 U | 0.011 U |
| Methylene chloride | | 0.002 J | 0.002 J |
| Styrene | | 0.011 U | 0.011 U |
| Tetrachloroethene | | 0.011 U | 0.011 U |
| Toluene | | 0.011 U | 0.011 U |
| Trichloroethene | | 0.011 U | 0.011 U |
| Vinyl chloride | | 0.011 U | 0.011 U |
| Xylene (total) | | 0.011 U | 0.011 U |
| cis-1,2-Dichloroethene | | 0.011 U | 0.011 U |
| cis-1,3-Dichloropropylene | | 0.011 U | 0.011 U |
| trans-1,2-Dichloroethene | | 0.011 U | 0.011 U |
| trans-1,3-Dichloropropene | | 0.011 U | 0.011 U |
| Total organic carbon (mg/Kg) | | 42600 | 25400 |
| Percent solids (%) | | 92.6 | 95.3 |

NOTES: U - not detected, J - estimated value.

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O'BRIEN & GERE ENGINEERS, INC.

# Table 5-3
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Semivolatile Organic Compound Data

| Compound | Sample ID | MW-7 | SS-01 | SS-01 | SS-02 | SS-02 | SS-03 | SS-04 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 05/03/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 |
| | | 0 - 6 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 8 in. | 0 - 20 in. |
| | Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| 1,2,4-Trichlorobenzene | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 1,2-Dichlorobenzene | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 1,3-Dichlorobenzene | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 1,4-Dichlorobenzene | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Bis(2-chloroisopropyl) ether | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 2,4,5-Trichlorophenol | | 0.88 UJ | 1.8 U | 1.5 U | 0.97 U | 1 U | 0.92 U | 0.94 U |
| 2,4,6-Trichlorophenol | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 2,4-Dichlorophenol | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 2,4-Dimethylphenol | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 2,4-Dinitrophenol | | 0.88 UJ | 1.8 U | 1.5 U | 0.97 U | 1 U | 0.92 U | 0.94 U |
| 2,4-Dinitrotoluene | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 2,6-Dinitrotoluene | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 2-Chloronaphthalene | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 2-Chlorophenol | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 2-Methylnaphthalene | | 0.11 J | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.043 J | 0.04 J |
| 2-Methylphenol | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 2-Nitroaniline | | 0.88 UJ | 1.8 U | 1.5 U | 0.97 U | 1 U | 0.92 U | 0.94 U |
| 2-Nitrophenol | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 3,3-Dichlorobenzidine | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 3-Nitroaniline | | 0.88 UJ | 1.8 U | 1.5 U | 0.97 U | 1 U | 0.92 U | 0.94 U |
| 4,6-Dinitro-2-methylphenol | | 0.88 UJ | 1.8 U | 1.5 U | 0.97 U | 1 U | 0.92 U | 0.94 U |
| 4-Bromophenyl phenyl ether | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 4-Chloro-3-methylphenol | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 4-Chloroaniline | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 4-Chlorophenyl phenyl ether | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 4-Methylphenol | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| 4-Nitroaniline | | 0.88 UJ | 1.8 U | 1.5 U | 0.97 U | 1 U | 0.92 U | 0.94 U |
| 4-Nitrophenol | | 0.88 UJ | 1.8 U | 1.5 U | 0.97 U | 1 U | 0.92 U | 0.94 U |
| Acenaphthene | | 0.055 J | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Acenaphthylene | | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Anthracene | | 0.17 J | 0.087 J | 0.068 J | 0.039 J | 0.061 J | 0.074 J | 0.042 J |
| Benzo(a)anthracene | | 0.71 J | 0.49 J | 0.4 J | 0.2 J | 0.29 J | 0.43 | 0.18 J |
| Benzo[a]pyrene | | 0.75 J | 0.52 J | 0.45 J | 0.17 J | 0.24 J | 0.41 | 0.17 J |
| Benzo(b)fluoranthene | | 1 J | 0.94 | 0.71 | 0.24 J | 0.35 J | 0.69 | 0.27 J |
| Benzo(ghi)perylene | | 0.9 J | 0.23 J | 0.38 J | 0.098 J | 0.12 J | 0.29 J | 0.082 J |
| Benzo(k)fluoranthene | | 0.27 J | 0.27 J | 0.28 J | 0.084 J | 0.12 J | 0.18 J | 0.09 J |
| Butyl benzyl phthalate | | 0.37 UJ | 0.087 J | 0.11 J | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Carbazole | | 0.081 J | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.044 J | 0.37 U |
| Chrysene | | 0.71 J | 0.61 J | 0.49 J | 0.22 J | 0.35 J | 0.56 | 0.21 J |
| Di-n-butyl phthalate | | 0.095 J | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |

NOTES: U - not detected, J - estimated value.



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O'BRIEN & GERE ENGINEERS, INC.

# Table 5-3
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Semivolatile Organic Compound Data

| Sample ID | MW-7 | SS-01 | SS-01 | SS-02 | SS-02 | SS-03 | SS-04 |
|---|---|---|---|---|---|---|---|
| Sample Date | 05/03/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 |
| | 0 - 6 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 8 in. | 0 - 20 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Dibenzo(a,h)anthracene | 0.37 UJ | 0.072 J | 0.11 J | 0.39 U | 0.4 U | 0.081 J | 0.37 U |
| Dibenzofuran | 0.039 J | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Diethyl phthalate | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Dimethyl phthalate | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Fluoranthene | 1.1 J | 0.91 | 0.54 J | 0.4 | 0.56 | 0.72 | 0.29 J |
| Fluorene | 0.058 J | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Hexachlorobenzene | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Hexachlorobutadiene | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Hexachlorocyclopentadiene | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Hexachloroethane | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Indeno(1,2,3-cd)pyrene | 0.61 J | 0.2 J | 0.33 J | 0.092 J | 0.11 J | 0.25 J | 0.076 J |
| Isophorone | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| N-Nitrosodipropylamine | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| N-Nitrosodiphenylamine | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Naphthalene | 0.18 J | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.21 J | 0.11 J |
| Nitrobenzene | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Pentachlorophenol | 0.88 UJ | 1.8 U | 1.5 U | 0.97 U | 1 U | 0.92 U | 0.94 U |
| Phenanthrene | 0.82 J | 0.33 J | 0.27 J | 0.23 J | 0.33 J | 0.45 | 0.19 J |
| Phenol | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Pyrene | 1 J | 1.1 | 1.1 | 0.38 J | 0.54 | 0.79 | 0.34 J |
| Bis(2-chloroethoxy)methane | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Bis(2-chloroethyl)ether | 0.37 UJ | 0.71 U | 0.61 U | 0.39 U | 0.4 U | 0.37 U | 0.37 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 1.4 J | 0.55 J | 2.3 | 0.093 J | 0.063 J | 0.31 J | 0.66 |
| Total organic carbon (mg/Kg) | 97500 J | --- | 123000 J | 37500 | 16800 | 84300 | 46900 |
| Percent solids (%) | 90.5 | 46.5 | 55.1 | 86.4 | 83.2 | 90.8 | 89 |

NOTES: U - not detected, J - estimated value.

O'BRIEN & GERE ENGINEERS, INC.

# Table 5-3
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Semivolatile Organic Compound Data

| Compound | Sample ID | SS-05 | SS-05 | SS-06 | SS-07 | SS-08 | SS-09 | SS-09 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 |
| | | 0 - 2 in. | 0 - 15 in. | 0 - 2 in. | 2 - 4 in. | 2 - 4 in. | 0 - 2 in. | 0 - 15 in. |
| | Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| 1,2,4-Trichlorobenzene | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 1,2-Dichlorobenzene | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 1,3-Dichlorobenzene | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 1,4-Dichlorobenzene | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Bis(2-chloroisopropyl) ether | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 2,4,5-Trichlorophenol | | 0.94 U | 0.93 U | 1 U | 0.88 U | 0.92 U | 1 U | 0.93 U |
| 2,4,6-Trichlorophenol | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 2,4-Dichlorophenol | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 2,4-Dimethylphenol | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 2,4-Dinitrophenol | | 0.94 U | 0.93 U | 1 U | 0.88 U | 0.92 U | 1 U | 0.93 U |
| 2,4-Dinitrotoluene | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 2,6-Dinitrotoluene | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 2-Chloronaphthalene | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 2-Chlorophenol | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 2-Methylnaphthalene | | 0.37 U | 0.37 U | 0.41 U | 0.072 J | 0.27 J | 0.41 U | 0.11 J |
| 2-Methylphenol | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 2-Nitroaniline | | 0.94 U | 0.93 U | 1 U | 0.88 U | 0.92 U | 1 U | 0.93 U |
| 2-Nitrophenol | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 3,3-Dichlorobenzidine | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 3-Nitroaniline | | 0.94 U | 0.93 U | 1 U | 0.88 U | 0.92 U | 1 U | 0.93 U |
| 4,6-Dinitro-2-methylphenol | | 0.94 U | 0.93 U | 1 U | 0.88 U | 0.92 U | 1 U | 0.93 U |
| 4-Bromophenyl phenyl ether | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 4-Chloro-3-methylphenol | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 4-Chloroaniline | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 4-Chlorophenyl phenyl ether | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 4-Methylphenol | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| 4-Nitroaniline | | 0.94 U | 0.93 U | 1 U | 0.88 U | 0.92 U | 1 U | 0.93 U |
| 4-Nitrophenol | | 0.94 U | 0.93 U | 1 U | 0.88 U | 0.92 U | 1 U | 0.93 U |
| Acenaphthene | | 0.37 U | 0.37 U | 0.41 U | 0.051 J | 0.37 U | 0.41 U | 0.37 U |
| Acenaphthylene | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.06 J |
| Anthracene | | 0.04 J | 0.37 U | 0.12 J | 0.17 J | 0.37 U | 0.41 U | 0.15 J |
| Benzo(a)anthracene | | 0.2 J | 0.057 J | 0.84 | 0.72 | 0.37 U | 0.056 J | 0.62 |
| Benzo[a]pyrene | | 0.2 J | 0.054 J | 0.81 | 0.78 | 0.37 U | 0.061 J | 0.61 |
| Benzo(b)fluoranthene | | 0.32 J | 0.073 J | 1.2 | 1.2 | 0.37 U | 0.091 J | 0.91 |
| Benzo(ghi)perylene | | 0.11 J | 0.37 U | 0.44 | 0.63 | 0.37 U | 0.047 J | 0.24 J |
| Benzo(k)fluoranthene | | 0.12 J | 0.37 U | 0.37 J | 0.45 | 0.37 U | 0.41 U | 0.37 J |
| Butyl benzyl phthalate | | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.11 J | 0.37 U |
| Carbazole | | 0.37 U | 0.37 U | 0.41 U | 0.1 J | 0.37 U | 0.41 U | 0.066 J |
| Chrysene | | 0.24 J | 0.066 J | 0.99 | 0.85 | 0.37 U | 0.075 J | 0.65 |
| Di-n-butyl phthalate | | 0.37 U | 0.37 U | 0.067 J | 0.35 U | 0.37 U | 0.41 U | 0.37 U |

NOTES: U - not detected, J - estimated value



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O'BRIEN & GERE ENGINEERS, INC.

# Table 5-3
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Semivolatile Organic Compound Data

| Sample ID | SS-05 | SS-05 | SS-06 | SS-07 | SS-08 | SS-09 | SS-09 |
|---|---|---|---|---|---|---|---|
| Sample Date | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 |
| Units | 0 - 2 in. mg/Kg | 0 - 15 in. mg/Kg | 0 - 2 in. mg/Kg | 2 - 4 in. mg/Kg | 2 - 4 in. mg/Kg | 0 - 2 in. mg/Kg | 0 - 15 in. mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Dibenzo(a,h)anthracene | 0.37 U | 0.37 U | 0.16 J | 0.036 J | 0.37 U | 0.41 U | 0.094 J |
| Dibenzofuran | 0.37 U | 0.37 U | 0.41 U | 0.042 J | 0.37 U | 0.41 U | 0.37 U |
| Diethyl phthalate | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Dimethyl phthalate | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Fluoranthene | 0.43 | 0.12 J | 1.1 | 0.99 | 0.37 U | 0.11 J | 0.98 |
| Fluorene | 0.37 U | 0.37 U | 0.41 U | 0.048 J | 0.37 U | 0.41 U | 0.37 U |
| Hexachlorobenzene | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Hexachlorobutadiene | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Hexachlorocyclopentadiene | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Hexachloroethane | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Indeno(1,2,3-cd)pyrene | 0.097 J | 0.37 U | 0.43 | 0.55 | 0.37 U | 0.41 U | 0.26 J |
| Isophorone | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| N-Nitrosodipropylamine | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| N-Nitrosodiphenylamine | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Naphthalene | 0.37 U | 0.37 U | 0.41 U | 0.049 J | 0.37 U | 0.41 U | 0.055 J |
| Nitrobenzene | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Pentachlorophenol | 0.94 U | 0.93 U | 1 U | 0.88 U | 0.92 U | 1 U | 0.93 U |
| Phenanthrene | 0.22 J | 0.07 J | 0.53 | 0.84 | 0.18 J | 0.05 J | 0.6 |
| Phenol | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Pyrene | 0.4 | 0.1 J | 1.9 | 2.2 | 0.085 J | 0.11 J | 1 |
| Bis(2-chloroethoxy)methane | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Bis(2-chloroethyl)ether | 0.37 U | 0.37 U | 0.41 U | 0.35 U | 0.37 U | 0.41 U | 0.37 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.13 J | 0.37 U | 2.5 | 0.44 | 0.42 | 0.17 J | 0.1 J |
| Total organic carbon (mg/Kg) | 9660 | 28700 | 39100 | 38500 | 25500 | 20500 | 14400 |
| Percent solids (%) | 89.4 | 90.3 | 81.2 | 95.2 | 91.1 | 82.3 | 90.3 |

NOTES: U - not detected, J - estimated value.



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O'BRIEN & GERE ENGINEERS, INC.

# Table 5-3
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Semivolatile Organic Compound Data

| Compound | Sample ID | SS-10 | SS-11 | SS-11 | SS-12 | SS-12 | SS-15 | SS-16 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 |
| | Units | 12 - 14 in. mg/Kg | 0 - 2 in. mg/Kg | 0 - 24 in. mg/Kg | 0 - 2 in. mg/Kg | 0 - 17 in. mg/Kg | 0 - 2 in. mg/Kg | 3 - 5 in. mg/Kg |
| 1,2,4-Trichlorobenzene | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 1,2-Dichlorobenzene | | 0.33 J | 0.42 U | 0.4 U | 0.046 J | 0.048 J | 0.35 U | 0.35 U |
| 1,3-Dichlorobenzene | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 1,4-Dichlorobenzene | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Bis(2-chloroisopropyl) ether | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 2,4,5-Trichlorophenol | | 1 U | 1.1 U | 0.99 U | 0.93 U | 0.92 U | 0.87 U | 0.88 U |
| 2,4,6-Trichlorophenol | | 0.4 U | 0.42 U | 0.05 J | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 2,4-Dichlorophenol | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 2,4-Dimethylphenol | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 2,4-Dinitrophenol | | 1 U | 1.1 U | 0.99 U | 0.93 U | 0.92 U | 0.83 U | 0.88 U |
| 2,4-Dinitrotoluene | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 2,6-Dinitrotoluene | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 2-Chloronaphthalene | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 2-Chlorophenol | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 2-Methylnaphthalene | | 0.4 U | 0.42 U | 0.4 U | 0.039 J | 0.37 U | 0.35 U | 0.35 U |
| 2-Methylphenol | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 2-Nitroaniline | | 1 U | 1.1 U | 0.99 U | 0.93 U | 0.92 U | 0.87 U | 0.88 U |
| 2-Nitrophenol | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 3,3-Dichlorobenzidine | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 3-Nitroaniline | | 1 U | 1.1 U | 0.99 U | 0.93 U | 0.92 U | 0.87 U | 0.88 U |
| 4,6-Dinitro-2-methylphenol | | 1 U | 1.1 U | 0.99 U | 0.93 U | 0.92 U | 0.87 U | 0.88 U |
| 4-Bromophenyl phenyl ether | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 4-Chloro-3-methylphenol | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 4-Chloroaniline | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 4-Chlorophenyl phenyl ether | | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 4-Methylphenol | | 0.48 | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| 4-Nitroaniline | | 1 U | 1.1 U | 0.99 U | 0.93 U | 0.92 U | 0.87 U | 0.88 U |
| 4-Nitrophenol | | 1 U | 1.1 U | 0.99 U | 0.93 U | 0.92 U | 0.87 U | 0.88 U |
| Acenaphthene | | 0.046 J | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Acenaphthylene | | 0.086 J | 0.42 U | 0.4 U | 0.11 J | 0.37 U | 0.35 U | 0.35 U |
| Anthracene | | 0.24 J | 0.42 U | 0.4 U | 0.11 J | 0.37 U | 0.35 U | 0.35 U |
| Benzo(a)anthracene | | 1.1 | 0.052 J | 0.07 J | 0.52 | 0.11 J | 0.2 J | 0.084 J |
| Benzo[a]pyrene | | 0.93 | 0.42 U | 0.088 J | 0.59 | 0.12 J | 0.2 J | 0.08 J |
| Benzo(b)fluoranthene | | 1.7 | 0.11 J | 0.15 J | 0.89 | 0.17 J | 0.3 J | 0.13 J |
| Benzo(ghi)perylene | | 1 | 0.077 J | 0.083 J | 0.38 | 0.086 J | 0.12 J | 0.05 J |
| Benzo(k)fluoranthene | | 0.66 | 0.42 U | 0.046 J | 0.35 J | 0.053 J | 0.091 J | 0.35 U |
| Butyl benzyl phthalate | | 0.095 J | 0.15 J | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Carbazole | | 0.089 J | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Chrysene | | 1.4 | 0.08 J | 0.085 J | 0.51 | 0.12 J | 0.23 J | 0.1 J |
| Di-n-butyl phthalate | | 0.061 J | 0.42 U | 0.04 J | 0.37 U | 0.37 U | 0.35 U | 0.35 U |

NOTES: U - not detected, J - estimated value.

O'BRIEN & GERE ENGINEERS, INC.

# Table 5-3
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Semivolatile Organic Compound Data

| Sample ID | SS-10 | SS-11 | SS-11 | SS-12 | SS-12 | SS-15 | SS-16 |
|---|---|---|---|---|---|---|---|
| Sample Date | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 | 07/11/01 |
| Units | 12 - 14 in. mg/Kg | 0 - 2 in. mg/Kg | 0 - 24 in. mg/Kg | 0 - 2 in. mg/Kg | 0 - 17 in. mg/Kg | 0 - 2 in. mg/Kg | 3 - 5 in. mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Dibenzo(a,h)anthracene | 0.32 J | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Dibenzofuran | 0.057 J | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.87 U | 0.35 U |
| Diethyl phthalate | 0.051 J | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Dimethyl phthalate | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Fluoranthene | 1.1 | 0.083 J | 0.084 J | 0.64 | 0.19 J | 0.35 | 0.14 J |
| Fluorene | 0.046 J | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Hexachlorobenzene | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Hexachlorobutadiene | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Hexachlorocyclopentadiene | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Hexachloroethane | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Indeno(1,2,3-cd)pyrene | 0.98 | 0.058 J | 0.08 J | 0.38 | 0.083 J | 0.11 J | 0.046 J |
| Isophorone | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| N-Nitrosodipropylamine | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| N-Nitrosodiphenylamine | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Naphthalene | 0.059 J | 0.42 U | 0.4 U | 0.058 J | 0.37 U | 0.35 U | 0.35 U |
| Nitrobenzene | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Pentachlorophenol | 1 U | 1.1 U | 0.99 U | 0.93 U | 0.92 U | 0.87 U | 0.88 U |
| Phenanthrene | 1 | 0.069 J | 0.046 J | 0.29 J | 0.078 J | 0.17 J | 0.074 J |
| Phenol | 0.079 J | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Pyrene | 2.3 | 0.17 J | 0.088 J | 1.1 | 0.17 J | 0.36 | 0.13 J |
| Bis(2-chloroethoxy)methane | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Bis(2-chloroethyl)ether | 0.4 U | 0.42 U | 0.4 U | 0.37 U | 0.37 U | 0.35 U | 0.35 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.9 | 2.1 | 0.35 J | 0.45 | 0.49 | 0.099 J | 0.097 J |
| Total organic carbon (mg/Kg) | 62100 | 86800 | 22100 | 40800 | 5310 | 15300 | 11900 |
| Percent solids (%) | 83 | 78.6 | 84.1 | 89.5 | 91.3 | 95.8 | 95.1 |

NOTES: U - not detected, J - estimated value.

O'BRIEN & GERE ENGINEERS, INC.

# Table 5-3
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples
## Semivolatile Organic Compound Data

| Compound | Sample ID | SS-17 | SS-18 |
|---|---|---|---|
| | Sample Date | 07/11/01 | 07/11/01 |
| | | 2 - 4 in. | 0 - 10 in. |
| | Units | mg/Kg | mg/Kg |
| 1,2,4-Trichlorobenzene | | 0.36 U | 0.35 U |
| 1,2-Dichlorobenzene | | 0.36 U | 0.35 U |
| 1,3-Dichlorobenzene | | 0.36 U | 0.35 U |
| 1,4-Dichlorobenzene | | 0.36 U | 0.35 U |
| Bis(2-chloroisopropyl) ether | | 0.36 U | 0.35 U |
| 2,4,5-Trichlorophenol | | 0.9 U | 0.88 U |
| 2,4,6-Trichlorophenol | | 0.36 U | 0.35 U |
| 2,4-Dichlorophenol | | 0.36 U | 0.35 U |
| 2,4-Dimethylphenol | | 0.36 U | 0.35 U |
| 2,4-Dinitrophenol | | 0.9 U | 0.88 U |
| 2,4-Dinitrotoluene | | 0.36 U | 0.35 U |
| 2,6-Dinitrotoluene | | 0.36 U | 0.35 U |
| 2-Chloronaphthalene | | 0.36 U | 0.35 U |
| 2-Chlorophenol | | 0.36 U | 0.35 U |
| 2-Methylnaphthalene | | 0.39 | 0.35 U |
| 2-Methylphenol | | 0.36 U | 0.35 U |
| 2-Nitroaniline | | 0.9 U | 0.88 |
| 2-Nitrophenol | | 0.36 U | 0.35 U |
| 3,3-Dichlorobenzidine | | 0.36 U | 0.35 U |
| 3-Nitroaniline | | 0.9 U | 0.88 U |
| 4,6-Dinitro-2-methylphenol | | 0.9 U | 0.88 U |
| 4-Bromophenyl phenyl ether | | 0.36 U | 0.35 U |
| 4-Chloro-3-methylphenol | | 0.36 U | 0.35 U |
| 4-Chloroaniline | | 0.36 U | 0.35 U |
| 4-Chlorophenyl phenyl ether | | 0.36 U | 0.35 U |
| 4-Methylphenol | | 0.36 U | 0.35 U |
| 4-Nitroaniline | | 0.9 U | 0.88 U |
| 4-Nitrophenol | | 0.9 U | 0.88 U |
| Acenaphthene | | 0.046 J | 0.35 U |
| Acenaphthylene | | 0.081 J | 0.35 U |
| Anthracene | | 0.2 J | 0.06 J |
| Benzo(a)anthracene | | 0.91 | 0.27 J |
| Benzo[a]pyrene | | 1.3 | 0.25 J |
| Benzo(b)fluoranthene | | 1.7 | 0.35 J |
| Benzo(ghi)perylene | | 0.67 | 0.12 J |
| Benzo(k)fluoranthene | | 0.48 | 0.12 J |
| Butyl benzyl phthalate | | 0.36 U | 0.35 U |
| Carbazole | | 0.099 J | 0.042 J |
| Chrysene | | 1 | 0.28 J |
| Di-n-butyl phthalate | | 0.052 J | 0.35 U |

NOTES: U - not detected, J - estimated value.

O'BRIEN & GERE ENGINEERS, INC.

# Table 5-3
## Three Star Anodizing Site
## Wappinger Falls, New York
## Main Site Surface Soil Samples
## Semivolatile Organic Compound Data

| Compound | Sample ID | SS-17 | SS-18 |
|---|---|---|---|
| | Sample Date | 07/11/01 | 07/11/01 |
| | | 2 - 4 in. | 0 - 10 in. |
| | Units | mg/Kg | mg/Kg |
| Di-n-octyl phthalate | | 0.36 U | 0.35 U |
| Dibenzo(a,h)anthracene | | 0.21 J | 0.039 J |
| Dibenzofuran | | 0.057 J | 0.35 U |
| Diethyl phthalate | | 0.36 U | 0.35 U |
| Dimethyl phthalate | | 0.36 U | 0.35 U |
| Fluoranthene | | 1.4 | 0.53 |
| Fluorene | | 0.048 J | 0.35 U |
| Hexachlorobenzene | | 0.36 U | 0.35 U |
| Hexachlorobutadiene | | 0.36 U | 0.35 U |
| Hexachlorocyclopentadiene | | 0.36 U | 0.35 U |
| Hexachloroethane | | 0.36 U | 0.35 U |
| Indeno(1,2,3-cd)pyrene | | 0.7 | 0.12 J |
| Isophorone | | 0.36 U | 0.35 U |
| N-Nitrosodipropylamine | | 0.36 U | 0.35 U |
| N-Nitrosodiphenylamine | | 0.36 U | 0.35 U |
| Naphthalene | | 0.22 J | 0.35 U |
| Nitrobenzene | | 0.36 U | 0.35 U |
| Pentachlorophenol | | 0.9 U | 0.88 U |
| Phenanthrene | | 0.78 | 0.3 J |
| Phenol | | 0.36 U | 0.35 U |
| Pyrene | | 1.3 | 0.46 |
| Bis(2-chloroethoxy)methane | | 0.36 U | 0.35 U |
| Bis(2-chloroethyl)ether | | 0.36 U | 0.35 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | | 0.1 J | 0.046 J |
| Total organic carbon (mg/Kg) | | 42600 | 25400 |
| Percent solids (%) | | 92.6 | 95.3 |

NOTES: U - not detected, J - estimated value.

Table 5-4
Three Star Anodizing Site
Wappingers Falls, New York
SVOCs Detected in Soil Above Part 375 Screening Values for Commercial Uses

| | | Main Site | | | | MGP Site: adjacent to the creek | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SS-17 | MW-1 | MW-11 | SB-3-02 | SS-13 | SS-14 | SS-MGP7 | SS-MGP7 | MW-4 | MW-4 |
| | | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO |
| | NYS 375 | 7/11/2001 | 4/26/2001 | 12/2/2002 | 12/10/2002 | 7/11/2001 | 7/11/2001 | 12/7/2002 | 12/7/2002 | 4/30/2001 | 4/30/2001 |
| Chemical Name | Comm | 2 - 4 in | 0.5 - 2.5 ft | 16 - 18 ft | 10 - 12 ft | 0 - 2 in | 0 - 2 in | 0 - 2 in | 0 - 2 ft | 12 - 14 ft | 14 - 16 ft |
| Total PAHs | | 11 | 183 | 181 | 81 | 834 | 104 | 140 | 77 | 288 | 1242 |
| Acenaphthene | 500 | 0.046 J | 2.5 J | 5.2 U | 0.39 J | 0.81 J | 0.48 J | 3.9 U | 4 U | 17 U | 100 |
| Acenaphthylene | 500 | 0.081 J | 9.1 U | 5.2 U | 0.1 J | 14 | 3.8 U | 1.6 J | 0.8 J | 17 U | 79 U |
| Anthracene | 500 | 0.2 J | 6.7 J | 1.6 J | 2.2 | 20 | 3 J | 3.6 J | 2 J | 14 J | 65 J |
| Benz(a)anthracene | 5.6 | 0.91 | 15 * | 2.5 J | 7.8 J * | 79 J * | 11 * | 14 * | 7.7 * | 33 * | 49 J * |
| Benzo(a)pyrene | 1 | 1.3 * | 12 J * | 1.7 J * | 8 J * | 87 J * | 13 * | 14 * | 7.5 * | 16 J * | 36 J * |
| Benzo(b)fluoranthene | 5.6 | 1.7 | 18 J * | 3.5 J | 10 J * | 100 J * | 16 * | 18 * | 9.7 * | 22 * | 45 J * |
| Benzo(g,h,i)perylene | 500 | 0.67 | 4.1 J | 0.88 J | 4.3 J | 49 J | 4.7 | 6.3 | 3.5 J | 4.1 J | 16 J |
| Benzo(k)fluoranthene | 56 | 0.48 | 6.4 J | 0.85 J | 3.3 | 42 J | 4.9 | 6.4 | 3.8 J | 8.3 J | 15 J |
| Chrysene | 56 | 1 | 13 | 2.5 J | 6.5 J | 80 J * | 11 | 12 | 6.6 | 25 | 42 J |
| Dibenz(a,h)anthracene | 0.56 | 0.21 J | 1.4 J * | 5.2 UJ | 1.3 * | 18 * | 1.6 J * | 2.2 J * | 1.1 J * | 2 J * | 79 U |
| Fluoranthene | 500 | 1.4 | 32 | 4.4 J | 12 J | 81 J | 15 | 25 | 13 | 72 | 130 |
| Fluorene | 500 | 0.048 J | 2.1 J | 0.7 J | 0.52 | 2.9 J | 0.5 J | 0.52 J | 4 U | 17 U | 62 J |
| Indeno (1,2,3-cd)pyrene | 5.6 | 0.7 | 4.2 J | 0.9 J | 4.3 J | 53 J * | 5.2 | 6.6 * | 3.6 J | 5.2 J | 16 J * |
| Naphthalene | 500 | 0.22 J | 0.93 J | 150 J | 0.89 | 4.6 J | 2.2 J | 0.88 J | 0.65 J | 2 J | 290 |
| 2-Methylphenol | 500 | 0.36 U | 9.1 U | 5.2 U | 0.42 U | 4.8 U | 3.8 U | 3.9 U | 4 U | 17 U | 79 U |
| 4-Methylphenol | 500 | 0.36 U | 9.1 U | 5.2 U | 0.42 U | 0.51 J | 3.8 U | 3.9 U | 4 U | 17 U | 79 U |
| Pentachlorophenol | 6.7 | 0.9 U | 22 U | 13 U | 1.1 U | 12 U | 9.2 U | 9.7 U | 9.9 U | 41 U | 190 U |
| Phenanthrene | 500 | 0.78 | 31 | 4.5 J | 8.4 D | 31 | 7.6 | 6.6 | 5.3 | 34 | 210 |
| Phenol | 500 | 0.36 U | 9.1 U | 5.2 U | 0.42 U | 4.8 U | 3.8 U | 3.9 U | 4 U | 17 U | 79 U |
| Pyrene | 500 | 1.3 | 34 | 4.9 J | 11 D | 170 J | 13 | 22 | 12 | 50 | 100 |

Notes:
Concentrations presented in units of mg/Kg.
Data validation qualifiers: J = estimated value; U = undetected.
Concentrations detected above Part 375 screening values for commercial uses are presented with an asterisk, *.

Table 5-4
Three Star Anodizing Site
Wappingers Falls, New York
SVOCs Detected in Soil Above Part 375 Screening Values for Commercial Uses

| | | MGP Site: adjacent to the creek | | | | | MGP Site: former gas holder & adjacent area | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MW-5 | MW-5 | MW-5 | MW-5 | BMW-1 | SS-MGP3 | SS-MGP3 | SS-MGP6 | SB-4-01 | SB-4-01 | SB-4-01 |
| | | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO |
| | NYS 375 | 4/30/2001 | 4/30/2001 | 4/30/2001 | 4/30/2001 | 11/21/2002 | 12/7/2002 | 12/7/2002 | 12/7/2002 | 5/1/2001 | 5/1/2001 | 5/1/2001 |
| Chemical Name | Comm | 2 - 4 ft | 12 - 14 ft | 14 - 16 ft | 16 - 18 ft | 28 - 30 ft | 0 - 2 in | 0 - 2 ft | 0 - 2 ft | 6 - 8 ft | 8 - 9.2 ft | 10 - 12 ft |
| Total PAHs | | 1448 | 798 | 395 | 213 | 419 | 67 | 129 | 227 | 2261 | 388 | 575 |
| Acenaphthene | 500 | 4.8 J | 10 J | 7 J | 5.6 J | 23 | 4.6 U | 4.1 U | 0.4 J | 12 J | 5.2 J | 6.9 J |
| Acenaphthylene | 500 | 28 J | 8.3 J | 5.9 J | 3.5 J | 11 | 1 J | 1.9 J | 3.3 J | 36 J | 5.5 J | 11 J |
| Anthracene | 500 | 56 J | 53 J | 19 J | 16 | 19 | 1.1 J | 2.8 J | 14 | 150 J | 33 J | 38 J |
| Benz(a)anthracene | 5.6 | 140 J * | 69 J * | 42 * | 17 * | 20 * | 6.7 * | 11 * | 19 * | 200 J * | 27 J * | 47 J * |
| Benzo(a)pyrene | 1 | 110 J * | 52 J * | 29 * | 12 * | 15 * | 5.8 * | 9.7 * | 15 J * | 170 J * | 23 J * | 38 J * |
| Benzo(b)fluoranthene | 5.6 | 130 J * | 58 J * | 35 * | 13 * | 19 * | 9.5 * | 15 * | 19 J * | 180 J * | 27 J * | 52 J * |
| Benzo(g,h,i)perylene | 500 | 48 J | 24 J | 8.7 J | 3.3 J | 4.3 | 3 J | 3.5 J | 8.4 J | 89 J | 9.9 J | 8.6 J |
| Benzo(k)fluoranthene | 56 | 47 J | 21 J | 11 J | 5.3 J | 7.9 | 2.6 J | 6.2 | 6.4 J | 80 J * | 7.1 J | 19 J |
| Chrysene | 56 | 120 J * | 58 J * | 36 | 14 | 14 | 5.9 | 11 | 15 | 180 J * | 30 J | 39 J |
| Dibenz(a,h)anthracene | 0.56 | 21 J * | 10 J * | 3.6 J * | 1.4 J * | 1.7 J * | 1.1 J * | 1.4 J * | 2.7 J * | 31 J * | 4 J * | 3.4 J * |
| Fluoranthene | 500 | 240 J | 140 J | 82 | 38 | 44 | 12 | 24 | 48 J | 410 J | 62 J | 89 J |
| Fluorene | 500 | 32 J | 28 J | 9.7 J | 9.1 J | 24 | 4.6 U | 1.2 J | 2.6 J | 34 J | 14 J | 18 J |
| Indeno (1,2,3-cd)pyrene | 5.6 | 64 J * | 29 J * | 9.6 J * | 3.7 J | 4.9 | 3.1 J | 4.1 | 8.7 J * | 110 J * | 13 J * | 11 J * |
| Naphthalene | 500 | 30 J | 4.6 J | 25 U | 11 U | 78 | 4.6 U | 1.2 J | 3.9 U | 14 J | 5 J | 6.1 J |
| 2-Methylphenol | 500 | 45 UJ | 35 UJ | 25 U | 11 U | 4 U | 4.6 U | 4.1 U | 3.9 U | 51 UJ | 21 UJ | 4.3 UJ |
| 4-Methylphenol | 500 | 45 UJ | 35 UJ | 25 U | 11 U | 4 U | 4.6 U | 4.1 U | 3.9 U | 51 UJ | 21 UJ | 0.62 J |
| Pentachlorophenol | 6.7 | 110 UJ | 85 UJ | 61 U | 27 U | 9.9 U | 12 U | 10 U | 9.7 U | 120 UJ | 51 UJ | 10 UJ |
| Phenanthrene | 500 | 170 J | 130 J | 24 J | 36 | 68 | 4.3 J | 15 | 30 | 220 J | 65 J | 85 J |
| Phenol | 500 | 45 UJ | 35 UJ | 25 U | 11 U | 4 U | 4.6 U | 4.1 U | 3.9 U | 51 UJ | 21 UJ | 1 J |
| Pyrene | 500 | 190 J | 100 J | 72 | 35 | 38 | 11 | 20 | 34 D | 340 J | 54 J | 100 J |

Notes:
Concentrations presented in units of mg/Kg.
Data validation qualifiers: J = estimated value; U = undetected.
Concentrations detected above Part 375 screening values for commercial uses are presented with an asterisk, *.

Table 5-4
Three Star Anodizing Site
Wappingers Falls, New York
SVOCs Detected in Soil Above Part 375 Screening Values for Commercial Uses

| | | MPG Site: west portion | | | | |
|---|---|---|---|---|---|---|
| | | SS-MGP2 | TP-04 | TP-04 | TP-05 | TP-12 |
| | | SO | SO | SO | SO | SO |
| | NYS 375 | 12/6/2002 | 4/24/2001 | 4/24/2001 | 4/24/2001 | 4/25/2001 |
| Chemical Name | Comm | 0 - 2 ft | cinders | 0.5 - 2.5 ft | 4 - 6 ft | 0 - 2 ft |
| | | 133 | 1670 | 425 | 379 | 235 |
| Acenaphthene | 500 | 0.56 J | 70 U | 18 U | 10 UJ | 9.5 UJ |
| Acenaphthylene | 500 | 0.41 J | 46 J | 14 J | 1.8 J | 1.2 J |
| Anthracene | 500 | 2.7 | 21 J | 4.9 J | 7.5 J | 4.3 J |
| Benz(a)anthracene | 5.6 | 15 * | 200 * | 44 * | 41 J * | 28 J * |
| Benzo(a)pyrene | 1 | 13 * | 190 * | 38 * | 43 J * | 29 J * |
| Benzo(b)fluoranthene | 5.6 | 17 D * | 250 * | 62 * | 57 J * | 37 J * |
| Benzo(g,h,i)perylene | 500 | 4.8 | 63 J | 16 J | 19 J | 9.8 J |
| Benzo(k)fluoranthene | 56 | 7.3 | 100 * | 17 J | 21 J | 15 J |
| Chrysene | 56 | 13 | 170 * | 38 | 38 J | 23 J |
| Dibenz(a,h)anthracene | 0.56 | 2.1 * | 23 J * | 5.4 J * | 5.4 J * | 3.2 J * |
| Fluoranthene | 500 | 21 J | 240 | 77 | 48 J | 26 J |
| Fluorene | 500 | 0.74 J | 70 U | 18 U | 1.5 J | 9.5 UJ |
| Indeno (1,2,3-cd)pyrene | 5.6 | 5.8 * | 73 * | 18 J * | 19 J * | 10 J * |
| Naphthalene | 500 | 0.94 J | 70 U | 18 U | 1.7 J | 1.1 J |
| 2-Methylphenol | 500 | 2 U | 70 U | 18 U | 10 UJ | 9.5 UJ |
| 4-Methylphenol | 500 | 2 U | 70 U | 18 U | 10 UJ | 9.5 UJ |
| Pentachlorophenol | 6.7 | 5 U | 170 U | 44 U | 25 UJ | 23 UJ |
| Phenanthrene | 500 | 11 | 14 J | 11 J | 20 J | 12 J |
| Phenol | 500 | 2 U | 70 U | 18 U | 10 UJ | 9.5 UJ |
| Pyrene | 500 | 17 D | 280 | 80 | 55 J | 34 J |

Notes:
Concentrations presented in units of mg/Kg.
Data validation qualifiers: J = estimated value; U = undetected.
Concentrations detected above Part 375 screening values for commercial uses are presented with an asterisk, *.

Table 5-5
Three Star Anodizing Site
Wappingers Falls, New York
Main Site Surface Soil Samples (2001)
Inorganic Data

| Sample ID | SS-09 | SS-09 | SS-10 | SS-11 | SS-11 | SS-12 | SS-12 | SS-08 | SS-01 | SS-01 |
|---|---|---|---|---|---|---|---|---|---|---|
| Location Cross Reference | (Axton-Cross) | (Axton-Cross) | (Axton-Cross) | (Axton-Cross) | (Axton-Cross) | (Axton-Cross) | (Axton-Cross) | (Bldg 21/22) | (Raceway) | (Raceway) |
| Sample Date | 7/11/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 |
| Sample Depth | 0 - 2 in. | 0 - 15 in. | 12 - 14 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 17 in. | 2 - 4 in. | 0 - 2 in. | 0 - 24 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | | | | |
| Aluminum | 10300 | 11400 | 7310 | 6600 | 6070 | 10300 | 10400 | 9040 | 8430 | 29300 |
| Antimony | --- | 1.3 J | 1.1 J | 0.70 J | 0.42 J | 1.0 J | 0.51 J | 0.64 J | 2.1 J | 1.6 J |
| Arsenic | 5.1 | 7.6 | 7.6 | 5.9 | 4.5 | 6.4 | 5.9 | 5.3 | 6.8 | 9.6 |
| Barium | 50 | 62 | 68 | 70 | 68 | 58 | 37 J | 23 J | 139 | 137 |
| Beryllium | 0.51 J | 0.52 J | 0.36 J | 0.32 J | 0.33 J | 0.50 J | 0.49 J | 0.42 J | 0.45 J | 0.61 J |
| Cadmium | 7.9 | 1.2 | 2.9 | 2.2 | 0.39 J | 1.2 | 0.42 J | 6.8 | 7.6 | 16 |
| Calcium | 1290 | 6410 | 10900 | 22800 | 3370 | 11200 | 28300 | 29200 | 18800 | 14900 |
| Chromium | 14 | 22 | 118 | 77 | 70 | 26 | 19 | 20 | 157 | 6260 |
| Chromium (Hexavalent) | --- | --- | 5.0 U | --- | --- | --- | --- | 45 U | --- | --- |
| Cobalt | 7.4 J | 10 J | 8.7 J | 23 | 4.6 J | 9.3 J | 8.8 J | 7.3 J | 6.8 J | 10 J |
| Copper | 23 | 45 | 99 | 115 | 36 | 46 | 32 | 49 | 163 | 2140 |
| Iron | 23200 | 30700 | 20100 | 19700 | 17600 | 29800 | 27700 | 24500 | 18900 | 31000 |
| Lead | 36 | 125 | 120 | 75 | 79 | 90 | 40 | 28 | 263 | 1100 |
| Magnesium | 3960 | 6980 | 9100 | 8540 | 3190 | 6890 | 7530 | 16500 | 5140 | 6180 |
| Manganese | 622 | 869 | 389 | 315 | 243 | 914 | 665 | 496 | 834 | 686 |
| Mercury | 0.18 | 0.34 | 31 | 0.52 | 2.7 | 0.41 | 0.20 | 0.14 | 0.88 | 1.5 |
| Nickel | 21 | 25 | 27 | 2310 | 51 | 34 | 35 | 40 | 128 | 603 |
| Potassium | 735 J | 931 J | 1350 | 762 J | 1190 J | 1050 J | 974 J | 756 J | 1210 J | 1440 J |
| Selenium | 0.69 J | 0.71 J | 0.61 J | 0.85 J | --- | 1.1 J | 1.0 J | 0.56 J | 1.9 J | 2.5 |
| Silver | --- | --- | 6.3 | 0.51 J | --- | --- | --- | 0.16 U | --- | --- |
| Sodium | 33 J | 52 J | 151 J | 66 J | 112 J | 54 J | 27 J | 41 J | 129 J | 220 J |
| Thallium | 0.96 J | --- | 0.87 U | --- | --- | --- | --- | 0.79 U | --- | --- |
| Vanadium | 30 | 24 | 22 | 47 | 16 | 58 | 68 | 40 | 41 | 63 |
| Zinc | 82 | 119 | 126 | 184 | 53 | 160 | 97 | 333 | 497 | 558 |
| Cyanide, total | 0.79 | --- | 1.0 | --- | --- | --- | --- | 0.55 U | 3.6 | 94 |
| Cyanide, amenable to chlorination | --- | --- | 1.0 U | --- | --- | --- | --- | --- | --- | --- |
| Percent solids (%) | 84 | 89 | 80 | 78 | 84 | 81 | 91 | 88 | 47 | 50 |
| % TOC | 2.1 | 1.4 | 6.2 | 8.7 | 2.2 | 4.1 | 0.5 | 2.6 | --- | 12 J |
| Total organic carbon (mg/Kg) | 20500 | 14400 | 62100 | 86800 | 22100 | 40800 | 5310 | 25500 | --- | 12300 J |

NOTES: U - not detected, J - estimated value, NC - no criterion, --- - no data.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.

# Table 5-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Surface Soil Samples (2001)
## Inorganic Data

| Sample ID | SS-05 | SS-05 | SS-18 | MW-1 | MW-7 | SS-03 | SS-04 | SS-06 | SS-15 | SS-16 |
|---|---|---|---|---|---|---|---|---|---|---|
| Location Cross Reference | (Raceway) | (Raceway) | (Raceway) | (Bldg 15/16/17 | (Bldg 15/16/17 | (Bldg 15/16/17 | (Bldg 15/16/17 | (Bldg 15/16/17 | (Bldg 12) | (Bldg 12) |
| Sample Date | 7/11/2001 | 7/11/2001 | 7/11/2001 | 4/26/2001 | 5/3/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 | 7/11/2001 |
| Sample Depth | 0 - 2 in. | 0 - 15 in. | 0 - 10 in. | 6 - 30 in. | 0 - 6 in. | 0 - 8 in. | 0 - 20 in. | 0 - 2 in. | 0 - 2 in. | 3 - 5 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | | | | |
| Aluminum | 9610 | 9950 | 10300 | 13800 | 7970 | 9460 | 6060 | 8550 | 7410 | 8780 |
| Antimony | 0.57 J | --- | 0.48 J | --- | 1.2 JN | 2.2 J | 1.4 J | 0.60 J | 1.0 J | 0.31 J |
| Arsenic | 11 | 6.0 | 6.0 | 5.2 | 8.5 | 13 | 8.6 | 6.5 | 5.2 | 5.9 |
| Barium | 76 | 37 J | 53 | 42 J | 67 | 88 | 54 | 183 | 37 J | 34 J |
| Beryllium | 0.61 J | 0.47 J | 0.48 J | 0.55 J | 0.46 J | 0.49 J | 0.37 J | 0.44 J | 0.40 J | 0.42 J |
| Cadmium | 0.88 J | 0.34 J | 0.29 J | 0.55 J | 81 | 9.2 | 11 | 36 | 0.60 J | 0.80 J |
| Calcium | 17000 | 18500 | 6430 | 4040 | 25800 | 13100 | 38800 | 1100 | 2710 | 38500 |
| Chromium | 14 | 15 | 15 | 17 | 216 J | 34 | 58 | 123 | 21 | 12 |
| Chromium (Hexavalent) | --- | --- | --- | --- | 13 | --- | --- | --- | --- | 4.3 U |
| Cobalt | 12 | 9.0 J | 7.4 J | 9.3 J | 9.6 J | 8.3 J | 6.4 J | 9.4 J | 6.2 | 6.7 J |
| Copper | 27 | 27 | 66 | 36 | 483 | 174 | 182 | 611 | 40 | 26 |
| Iron | 29500 | 28500 | 26000 | 31700 | 26000 | 28800 | 19200 | 23000 | 20000 | 24800 |
| Lead | 77 | 25 | 154 | 127 | 397 | 342 | 934 | 217 | 51 | 26 |
| Magnesium | 8740 | 6780 | 6060 | 6490 | 15500 | 7510 | 24100 | 7930 | 4400 | 18700 |
| Manganese | 2690 | 1020 | 634 | 746 JN | 479 JN | 568 | 334 | 643 | 493 | 731 |
| Mercury | 0.22 | --- | 0.71 | 0.25 | 0.65 | 0.88 | 0.91 | 1.4 | 0.38 | 0.16 |
| Nickel | 21 | 22 | 20 | 23 | 274 | 62 | 196 | 109 | 19 | 21 |
| Potassium | 857 J | 1020 J | 946 J | 861 J | 834 J | 909 J | 720 J | 1000 J | 944 J | 1010 J |
| Selenium | 2.1 | 0.65 J | 0.61 J | 1.4 | 1.0 J | 1.0 J | 0.59 J | 0.94 J | 0.62 J | 0.74 J |
| Silver | --- | --- | --- | --- | 0.28 J | --- | --- | --- | --- | 0.15 U |
| Sodium | 47 J | 37 J | 33 J | 58 J | 85 J | 60 J | 88 J | 74 J | 24 J | 107 J |
| Thallium | --- | --- | --- | --- | 1.2 J | --- | --- | --- | --- | 0.76 U |
| Vanadium | 20 | 14 | 18 | 17 | 59 | 46 | 59 | 37 | 16 | 45 |
| Zinc | 149 | 85 | 98 | 115 | 547 | 266 | 254 | 357 | 88 | 91 |
| Cyanide, total | --- | --- | --- | --- | --- | --- | --- | 0.76 | --- | 0.53 U |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent solids (%) | 88 | 90 | 94 | 90 | 91 | 89 | 85 | 81 | 96 | 93 |
| % TOC | 1.0 | 2.9 | 2.5 | 1.0 JN | 9.8 J | 8.4 | 4.7 | 3.9 | 1.5 | 1.2 |
| Total organic carbon (mg/Kg) | 9660 | 28700 | 25400 | 10400 JN | 97500 J | 84300 | 46900 | 39100 | 15300 | 11900 |

NOTES: U - not detected. J - estimated value. NC - no criterion. --- - no data.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.

Table 5-5
Three Star Anodizing Site
Wappingers Falls, New York
Main Site Surface Soil Samples (2001)
Inorganic Data

| Sample ID | SS-17 |
|---|---|
| Location Cross Reference | (Bldg 12) |
| Sample Date | 7/11/2001 |
| Sample Depth | 2 - 4 in. |
| Units | mg/Kg |
| Compound | |
| Aluminum | 6360 |
| Antimony | 3.6 J |
| Arsenic | 8.3 |
| Barium | 35 J |
| Beryllium | 0.38 J |
| Cadmium | 0.89 J |
| Calcium | 67200 |
| Chromium | 15 |
| Chromium (Hexavalent) | 4.5 U |
| Cobalt | 5.0 J |
| Copper | 34 |
| Iron | 21100 |
| Lead | 81 |
| Magnesium | 37300 |
| Manganese | 365 |
| Mercury | 0.79 |
| Nickel | 18 |
| Potassium | 811 J |
| Selenium | 0.67 J |
| Silver | 0.16 U |
| Sodium | 65 J |
| Thallium | 0.78 U |
| Vanadium | 18 |
| Zinc | 149 |
| Cyanide, total | 0.54 U |
| Cyanide, amenable to chlorination | --- |
| | |
| Percent solids (%) | 88 |
| % TOC | 4.3 |
| Total organic carbon (mg/Kg) | 42600 |

NOTES: U - not detected, J - estimated value, NC - no criterion, --- - no data.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.

Table 5-6
Three Star Anodizing Site
Wappingers Falls, New York
Observations during soil boring activities on the Main Site

| *Site Area* | *Sample ID* | *Description* |
|---|---|---|
| Former Axton-Cross Building | SB-4-02 and MW-9 | A heavy sheen, staining and strong BTEX odors were observed in soil borings SB-4-02 and MW-9. In SB-4-02, impacted soils were observed between 6 and 14 feet, with PID measurements ranging from 225 to 445 ppm. In MW-9, impacted soils were observed between 6 and 16 feet, with PID measurements ranging from 170 to 1200 ppm. |
| | SB-3-02 and SB-6 | There was no noticeable contamination in soil borings SB-3-02 and SB-6. |
| Building 21/22 | MW-6 | The PID field screening detected a concentration of 269 ppm in the headspace of soil collected from MW-6 at the 6- to 8-foot depth interval. A slight petroleum odor was detected in soil collected from this interval. |
| | MW-10 | A moderate petroleum odor was detected from 0 to 10 feet in MW-10. PID readings ranged from 1.2 to 50.1 ppm. and decreased with depth. |
| | SB-7 | There was no noticeable contamination in soil boring SB-7. |
| Former Raceway | MW-11 and BMW-2 | Black stained soils and coal tar odors were observed in monitoring wells MW-11 and BMW-2. In MW-11, impacted soils were observed between 14 and 18 feet, with PID measurements ranging from 21.2 to 21.7 ppm. In BMW-2, impacted soils were observed between 8 and 14 feet, with PID measurements ranging from 37.5 to 64.1 ppm. |
| | MW-13 | A slight "ammonia like" odor was observed in soils in monitoring well MW-13 from 16 to 20 feet. PID readings ranged from 3.1 to 4.2 ppm. |
| Building 15/16/17 | MW-1 | In the 0- to 4-foot depth interval in MW-1, the PID field screening ranged from approximately 7 to 12 ppm. |
| | MW-7 | Although no odor was detected in soil collected from the 0- to 0.5-foot depth interval in MW-7, the PID readings were 145 to 220 ppm in the headspace of the soil sample collected from this interval. |
| | MW-12 and SB-12 | Soils observed and screened while completing monitoring well MW-12 and soil boring SB-12, completed near MW-7 did not appear to be impacted. |
| Building 12 | MW-8 | No atypical odors or PID readings were noted in soil samples collected from the MW-8 location. |

Source: O'Brien & Gere Engineers, Inc.

O'BRIEN & GERE ENGINEERS, INC.

# Table 5-7a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Volatile Organic Compound Data

| Compound | Sample ID | MW-1 | MW-1 | MW-6 | MW-6 | MW-6 | MW-6 | MW-7 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 04/26/01 | 04/26/01 | 05/02/01 | 05/02/01 | 05/02/01 | 05/02/01 | 05/03/01 |
| | Units | 0.5 - 2.5 ft. mg/Kg | 6 - 8 ft. mg/Kg | 6 - 8 ft. mg/Kg | 12 - 14 ft. mg/Kg | 24 - 26 ft. mg/Kg | 36 - 38 ft. mg/Kg | 8 - 10 ft. mg/Kg |
| 1,1,1-Trichloroethane | | 0.018 | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| 1,1,2,2-Tetrachloroethane | | 0.011 UJ | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| 1,1,2-Trichloroethane | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| 1,1-Dichloroethane | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.002 J | 0.011 U | 0.014 U |
| 1,1-Dichloroethene | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| 1,2-Dichloroethane | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| 1,2-Dichloroethene | | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| 2-Butanone (MEK) | | 0.011 U | 0.012 U | 0.13 U | 0.005 J | 0.009 J | 0.011 U | 0.014 U |
| 2-Hexanone | | 0.011 UJ | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| 4-Methyl-2-pentanone (MIBK) | | 0.011 UJ | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Acetone | | 0.011 U | 0.012 U | 2 | 0.35 | 0.11 | 0.22 | 0.005 J |
| Benzene | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Bromodichloromethane | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Bromoform | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Bromomethane | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Carbon disulfide | | 0.011 U | 0.012 U | 0.13 U | 0.002 J | 0.001 J | 0.011 U | 0.014 U |
| Carbon tetrachloride | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Chlorobenzene | | 0.011 UJ | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Chloroethane | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Chloroform | | 0.001 J | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Chloromethane | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Dibromochloromethane | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Ethylbenzene | | 0.011 UJ | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Methylene chloride | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Styrene | | 0.011 UJ | 0.012 U | 0.13 U | 0.012 U | 0.001 J | 0.002 J | 0.014 U |
| Tetrachloroethene | | 0.023 J | 0.041 | 0.13 U | 0.001 J | 0.012 U | 0.011 U | 0.014 U |
| Toluene | | 0.011 UJ | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Trichloroethene | | R | 0.03 | 0.13 U | 0.013 | 0.012 U | 0.011 U | 0.002 J |
| Vinyl chloride | | 0.011 U | 0.012 U | 0.13 U | 0.021 | 0.05 J | 0.004 J | 0.014 U |
| Xylene (total) | | 0.011 UJ | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.006 J | 0.014 U |
| cis-1,2-Dichloroethene | | 0.038 | 0.009 J | 0.13 U | 0.021 | 0.049 | 0.011 U | 0.014 U |
| cis-1,3-Dichloropropylene | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.025 | 0.014 U |
| trans-1,2-Dichloroethene | | 0.002 J | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| trans-1,3-Dichloropropene | | 0.011 U | 0.012 U | 0.13 U | 0.012 U | 0.012 U | 0.011 U | 0.014 U |
| Total organic carbon (mg/Kg) | | 10400 JN | 1120 JN | 66000 J | 4210 JN | 9960 J | 1910 J | 23500 J |
| Percent solids (%) | | 90.2 | 85.6 | 76.8 | 83.2 | 83.7 | 91 | 73.1 |

NOTES: U - not detected, J - estimated value.

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FXP File: N:\10653\27258\TABLEPRS.FXP



File Number: 10653.27258

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# Table 5-7a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Volatile Organic Compound Data

| Sample ID | MW-7 | MW-7 | MW-8 | MW-8 | TP-07 | TP-07 | TP-08 |
|---|---|---|---|---|---|---|---|
| Sample Date | 05/03/01 | 05/03/01 | 05/03/01 | 05/03/01 | 04/24/01 | 04/24/01 | 04/24/01 |
| Units | 12 - 16 ft. mg/Kg | 28 - 30 ft. mg/Kg | 2 - 4 ft. mg/Kg | 8 - 10 ft. mg/Kg | 4 - 6 ft. mg/Kg | 6 - 8 ft. mg/Kg | 6 - 7 ft. mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| 1,1,2,2-Tetrachloroethane | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| 1,1,2-Trichloroethane | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| 1,1-Dichloroethane | 0.011 U | 0.026 | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| 1,1-Dichloroethene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| 1,2-Dichloroethane | 0.011 U | 0.012 U | 0.001 J | 0.003 J | 0.011 U | 0.012 U | 0.015 U |
| 1,2-Dichloroethene | --- | --- | --- | --- | 0.011 U | 0.015 | --- |
| 1,2-Dichloropropane | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| 2-Butanone (MEK) | 0.011 U | 0.01 J | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 |
| 2-Hexanone | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| 4-Methyl-2-pentanone (MIBK) | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Acetone | 0.026 | 0.07 | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.036 U |
| Benzene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Bromodichloromethane | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Bromoform | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Bromomethane | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Carbon disulfide | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.002 J |
| Carbon tetrachloride | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Chlorobenzene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Chloroethane | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Chloroform | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Chloromethane | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Dibromochloromethane | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Ethylbenzene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Methylene chloride | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.002 J | 0.001 J | 0.004 J |
| Styrene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Tetrachloroethene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.11 | 0.004 J | 0.015 J |
| Toluene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Trichloroethene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.014 | 0.002 J | 0.19 |
| Vinyl chloride | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Xylene (total) | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| cis-1,2-Dichloroethene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.016 | 0.17 |
| cis-1,3-Dichloropropylene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| trans-1,2-Dichloroethene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.027 |
| trans-1,3-Dichloropropene | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U | 0.012 U | 0.015 U |
| Total organic carbon (mg/Kg) | 3600 J | 685 J | 31800 J | 18700 J | 16100 J | 12900 J | 5500 J |
| Percent solids (%) | 87.8 | 84.4 | 88.2 | 85.5 | 88.8 | 79.8 | 70.4 |

NOTES: U - not detected, J - estimated value.



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O'BRIEN & GERE ENGINEERS, INC.

# Table 5-7a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Volatile Organic Compound Data

| Sample ID | TP-09 | TP-10 | TP-10 |
|---|---|---|---|
| Sample Date | 04/24/01 | 04/24/01 | 04/24/01 |
| | 7 - 9 ft. | 4 - 6 ft. | 7 - 9 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | |
| 1,1,1-Trichloroethane | 0.012 U | 0.014 UJ | 0.011 U |
| 1,1,2,2-Tetrachloroethane | 0.012 U | 0.014 UJ | 0.011 U |
| 1,1,2-Trichloroethane | 0.012 U | 0.014 UJ | 0.011 U |
| 1,1-Dichloroethane | 0.012 U | 0.014 UJ | 0.011 U |
| 1,1-Dichloroethene | 0.012 U | 0.014 UJ | 0.011 U |
| 1,2-Dichloroethane | 0.012 U | 0.014 UJ | 0.011 U |
| 1,2-Dichloroethene | 0.012 U | --- | --- |
| 1,2-Dichloropropane | 0.012 U | 0.014 UJ | 0.011 U |
| 2-Butanone (MEK) | 0.002 J | 0.014 UJ | 0.011 U |
| 2-Hexanone | 0.012 U | 0.014 UJ | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | 0.012 U | 0.014 UJ | 0.011 U |
| Acetone | 0.012 U | 0.014 UJ | 0.011 U |
| Benzene | 0.012 U | 0.014 UJ | 0.011 U |
| Bromodichloromethane | 0.012 U | 0.014 UJ | 0.011 U |
| Bromoform | 0.012 U | 0.014 UJ | 0.011 U |
| Bromomethane | 0.012 U | 0.014 UJ | 0.011 U |
| Carbon disulfide | 0.012 U | 0.014 UJ | 0.011 U |
| Carbon tetrachloride | 0.012 U | 0.014 UJ | 0.011 U |
| Chlorobenzene | 0.012 U | 0.014 UJ | 0.011 U |
| Chloroethane | 0.012 U | 0.014 UJ | 0.011 U |
| Chloroform | 0.012 U | 0.014 UJ | 0.011 U |
| Chloromethane | 0.012 U | 0.014 UJ | 0.011 U |
| Dibromochloromethane | 0.012 U | 0.014 UJ | 0.011 U |
| Ethylbenzene | 0.012 U | 0.014 UJ | 0.011 U |
| Methylene chloride | 0.008 J | 0.002 J | 0.002 J |
| Styrene | 0.012 U | 0.014 UJ | 0.011 U |
| Tetrachloroethene | 0.012 U | 0.014 UJ | 0.011 U |
| Toluene | 0.012 U | 0.014 UJ | 0.011 U |
| Trichloroethene | 0.012 U | 0.004 J | 0.01 J |
| Vinyl chloride | 0.012 U | 0.014 UJ | 0.011 U |
| Xylene (total) | 0.012 U | 0.014 UJ | 0.011 U |
| cis-1,2-Dichloroethene | 0.012 U | 0.014 UJ | 0.004 J |
| cis-1,3-Dichloropropylene | 0.012 U | 0.014 UJ | 0.011 U |
| trans-1,2-Dichloroethene | 0.012 U | 0.014 UJ | 0.011 U |
| trans-1,3-Dichloropropene | 0.012 U | 0.014 UJ | 0.011 U |
| Total organic carbon (mg/Kg) | 6890 J | 38800 J | 30900 J |
| Percent solids (%) | 81.8 | 78.1 | 86.7 |

NOTES: U - not detected, J - estimated value.



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# Table 5-7b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Volatile Organic Compound Data

| Sample ID | SB-3-02 | SB-4-02 | SB-4-02 | MW-9 | MW-9 | MW-9 | SB-6 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | (SB-3) | (SB-4) | (SB-4) | (SB-5) | (SB-5) | (SB-5) | |
| Sample Date | 12/10/02 | 11/21/02 | 11/21/02 | 11/20/02 | 11/20/02 | 11/20/02 | 11/21/02 |
| Sample Depth | 10 - 12 ft. | 10 - 12 ft. | 20 - 22 ft. | 6 - 8 ft. | 10 - 12 ft. | 16 - 18 ft. | 8 - 10 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 8.4 J | 0.17 | 0.00070 J |
| 1,1,2,2-Tetrachloroethane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| 1,1,2-Trichloroethane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| 1,1-Dichloroethane | 0.0020 J | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.0060 J | 0.011 UJ |
| 1,1-Dichloroethene | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.0020 J | 0.011 UJ |
| 1,2-Dichloroethane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| 1,2-Dichloropropane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| 2-Butanone (MEK) | 0.0040 J | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| 2-Hexanone | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| 4-Methyl-2-pentanone (MIBK) | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Acetone | 0.013 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Benzene | 0.0030 J | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Bromodichloromethane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Bromoform | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Bromomethane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Carbon disulfide | 0.0020 J | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.00060 J | 0.011 UJ |
| Carbon tetrachloride | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Chlorobenzene | 0.019 | 0.28 J | 0.11 J | 1.5 U | 15 U | 0.028 | 0.011 UJ |
| Chloroethane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Chloroform | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Chloromethane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Dibromochloromethane | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Ethylbenzene | 0.0070 J | 1.3 J | 0.26 J | 2.1 | 14 J | 0.11 | 0.011 UJ |
| Methylene chloride | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 1.7 J | 0.011 U | 0.011 UJ |
| Styrene | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Tetrachloroethene | 0.043 | 2.7 | 0.63 J | 14 | 140 | 0.40 | 0.0040 J |
| Toluene | 0.015 | 0.69 J | 0.19 J | 0.078 J | 4.4 J | 0.046 | 0.00090 J |
| Trichloroethene | 0.041 | 2.4 | 0.97 J | 0.66 J | 49 | 0.22 | 0.0050 J |
| Vinyl chloride | 0.013 | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 J |
| Xylene (total) | 0.022 | 4.3 | 0.75 J | 10 | 64 | 0.41 | 0.011 UJ |
| cis-1,2-Dichloroethene | 0.079 | 0.67 J | 0.37 J | 0.25 J | 0.95 J | 0.035 | 0.050 J |
| cis-1,3-Dichloropropylene | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| trans-1,2-Dichloroethene | 0.0030 J | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| trans-1,3-Dichloropropene | 0.012 U | 1.9 U | 1.3 U | 1.5 U | 15 U | 0.011 U | 0.011 UJ |
| Total organic carbon (mg/Kg) | 12200 J | 33600 J | 54600 J | 840 JB | 17400 B | 486 JB | 15000 J |
| Percent solids (%) | 79 | 65 | 93 | 83 | 82 | 87 | 86 |

NOTES: U - not detected, J - estimated value, B - blank contamination.



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# Table 5-7b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Volatile Organic Compound Data

| Sample ID | SB-6 | SB-7 | SB-7 | MW-10 (SB-8) | MW-10 (SB-8) | MW-10 DUP (SB-8) | MW-10 (SB-8) |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 11/21/02 | 12/09/02 | 12/09/02 | 11/20/02 | 11/20/02 | 11/20/02 | 11/20/02 |
| Sample Depth | 18 - 20 ft. | 12 - 14 ft. | 18 - 20 ft. | 2 - 4 ft. | 10 - 12 ft. | 10 - 12 ft. | 16 - 18 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.0020 J | 0.00070 J | 0.012 U | 0.012 J |
| 1,1,2,2-Tetrachloroethane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| 1,1,2-Trichloroethane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| 1,1-Dichloroethane | 0.011 U | 0.00070 J | 0.00080 J | 0.027 U | 0.012 U | 0.0010 J | 0.0090 J |
| 1,1-Dichloroethene | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| 1,2-Dichloroethane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| 1,2-Dichloropropane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| 2-Butanone (MEK) | 0.011 U | 0.0040 J | 0.0050 J | 0.027 U | 0.0050 J | 0.0040 J | 0.12 |
| 2-Hexanone | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| 4-Methyl-2-pentanone (MIBK) | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Acetone | 0.011 U | 0.015 U | 0.017 U | 0.027 U | 0.013 B | 0.012 U | 0.32 |
| Benzene | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Bromodichloromethane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Bromoform | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Bromomethane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Carbon disulfide | 0.00080 J | 0.0030 J | 0.0020 J | 0.027 U | 0.0030 J | 0.0020 J | 0.0030 J |
| Carbon tetrachloride | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Chlorobenzene | 0.0020 J | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.0020 J |
| Chloroethane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Chloroform | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Chloromethane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Dibromochloromethane | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Ethylbenzene | 0.011 U | 0.012 UJ | 0.011 UJ | 0.0040 J | 0.00060 J | 0.012 U | 0.0050 J |
| Methylene chloride | 0.011 U | 0.012 U | 0.011 U | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Styrene | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Tetrachloroethene | 0.0010 J | 0.0040 J | 0.0020 J | 0.024 J | 0.0040 J | 0.0010 J | 0.066 |
| Toluene | 0.011 U | 0.019 J | 0.0070 J | 0.0010 J | 0.00080 J | 0.012 U | 0.0080 J |
| Trichloroethene | 0.00090 J | 0.062 J | 0.040 J | 0.014 J | 0.0050 J | 0.0020 J | 0.058 |
| Vinyl chloride | 0.021 | 0.0040 J | 0.010 J | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Xylene (total) | 0.00090 J | 0.012 UJ | 0.011 UJ | 0.022 J | 0.0020 J | 0.0030 J | 0.017 |
| cis-1,2-Dichloroethene | 0.047 | 0.062 J | 0.053 J | 0.027 U | 0.0050 J | 0.0040 J | 0.0060 J |
| cis-1,3-Dichloropropylene | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| trans-1,2-Dichloroethene | 0.0010 J | 0.0010 J | 0.0010 J | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| trans-1,3-Dichloropropene | 0.011 U | 0.012 UJ | 0.011 UJ | 0.027 U | 0.012 U | 0.012 U | 0.016 U |
| Total organic carbon (mg/Kg) | 2300 UJ | 247000 | 5920 J | 6250 B | 2120 JB | 2500 B | 41800 B |
| Percent solids (%) | 88 | 85 | 87 | 91 | 85 | 84 | 61 |

NOTES: U - not detected, J - estimated value, B - blank contamination.



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# Table 5-7b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Volatile Organic Compound Data

| Sample ID | SB-9 | SB-9 | MW-12 | MW-12 | MW-12 | SB-12 | SB-12 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | (SB-11) | (SB-11) | (SB-11) | | |
| Sample Date | 11/21/02 | 11/21/02 | 12/09/02 | 12/10/02 | 12/10/02 | 12/04/02 | 12/04/02 |
| Sample Depth | 4 - 6 ft. | 18 - 19.5 ft. | 0 - 2 ft. | 12 - 14 ft. | 18 - 20 ft. | 4 - 6 ft. | 14 - 16 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.012 J | 0.012 U | 0.081 J | 0.012 U | 0.011 U | 0.011 J | 0.011 U |
| 1,1,2,2-Tetrachloroethane | 0.011 UJ | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 UJ | 0.011 U |
| 1,1,2-Trichloroethane | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| 1,1-Dichloroethane | 0.0030 J | 0.011 J | 0.020 J | 0.012 U | 0.011 U | 0.0060 J | 0.00080 J |
| 1,1-Dichloroethene | 0.011 U | 0.012 U | 0.0010 J | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| 1,2-Dichloroethane | 0.011 U | 0.012 U | 0.00080 J | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| 1,2-Dichloropropane | 0.011 U | 0.012 U | 0.0050 J | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| 2-Butanone (MEK) | 0.011 U | 0.012 U | 0.0040 J | 0.0050 J | 0.0030 J | 0.0070 J | 0.011 U |
| 2-Hexanone | 0.011 UJ | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 UJ | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | 0.011 UJ | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 UJ | 0.011 U |
| Acetone | 0.011 U | 0.012 U | 0.013 U | 0.014 U | 0.011 U | 0.021 U | 0.0040 J |
| Benzene | 0.0060 J | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Bromodichloromethane | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Bromoform | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Bromomethane | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Carbon disulfide | 0.011 U | 0.012 U | 0.0020 J | 0.0010 J | 0.0010 J | 0.0020 J | 0.011 U |
| Carbon tetrachloride | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Chlorobenzene | 0.011 UJ | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.0010 J | 0.011 U |
| Chloroethane | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Chloroform | 0.011 U | 0.012 U | 0.00080 J | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Chloromethane | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Dibromochloromethane | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Ethylbenzene | 0.00090 J | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 UJ | 0.011 U |
| Methylene chloride | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Styrene | 0.011 UJ | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 UJ | 0.011 U |
| Tetrachloroethene | 0.018 J | 0.00070 J | 0.0010 J | 0.012 U | 0.011 U | 0.0040 J | 0.011 U |
| Toluene | 0.0030 J | 0.012 U | 0.023 J | 0.0040 J | 0.0040 J | 0.0010 J | 0.011 U |
| Trichloroethene | 0.016 J | 0.0020 J | 0.0060 J | 0.00070 J | 0.011 U | 0.010 J | 0.0010 J |
| Vinyl chloride | 0.011 U | 0.012 U | 0.0020 J | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Xylene (total) | 0.0020 J | 0.012 U | 0.0010 J | 0.012 U | 0.011 U | 0.0010 J | 0.011 U |
| cis-1,2-Dichloroethene | 0.0040 J | 0.0080 J | 0.0050 J | 0.012 U | 0.011 U | 0.0020 J | 0.011 U |
| cis-1,3-Dichloropropylene | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| trans-1,2-Dichloroethene | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| trans-1,3-Dichloropropene | 0.011 U | 0.012 U | 0.012 U | 0.012 U | 0.011 U | 0.012 U | 0.011 U |
| Total organic carbon (mg/Kg) | 86000 J | 5620 J | 26000 | 4830 J | 552 J | 32800 B | 581 JB |
| Percent solids (%) | 88 | 86 | 84 | 83 | 87 | 82 | 87 |

NOTES: U - not detected, J - estimated value, B - blank contamination.



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# Table 5-7b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Volatile Organic Compound Data

| Sample ID | SB-12 DUP | MW-11 | MW-11 | MW-11 | MW-13 | MW-13 | SB-16 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | (SB-13) | (SB-13) | (SB-13) | (SB-15) | (SB-15) | |
| Sample Date | 12/04/02 | 12/02/02 | 12/02/02 | 12/02/02 | 12/05/02 | 12/05/02 | 11/19/02 |
| Sample Depth | 14 - 16 ft. | 4 - 6 ft. | 16 - 18 ft. | 20 - 22 ft. | 18 - 20 ft. | 26 - 28 ft. | 10 - 12 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.073 |
| 1,1,2,2-Tetrachloroethane | 0.012 U | 0.013 UJ | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| 1,1,2-Trichloroethane | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| 1,1-Dichloroethane | 0.00070 J | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.15 |
| 1,1-Dichloroethene | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.011 J |
| 1,2-Dichloroethane | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| 1,2-Dichloropropane | 0.012 U | 0.0010 J | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| 2-Butanone (MEK) | 0.012 U | 0.0070 J | 0.15 U | 0.015 | 0.016 J | 0.0030 J | 0.0040 J |
| 2-Hexanone | 0.012 U | 0.013 UJ | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| 4-Methyl-2-pentanone (MIBK) | 0.012 U | 0.013 UJ | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Acetone | 0.012 U | 0.029 U | 0.028 U | 0.044 U | 0.052 J | 0.014 U | 0.013 U |
| Benzene | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Bromodichloromethane | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Bromoform | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Bromomethane | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Carbon disulfide | 0.00070 J | 0.0030 J | 0.0080 J | 0.0030 J | 0.0020 J | 0.012 U | 0.0020 J |
| Carbon tetrachloride | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Chlorobenzene | 0.012 U | 0.013 UJ | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.0020 J |
| Chloroethane | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.057 |
| Chloroform | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Chloromethane | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Dibromochloromethane | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Ethylbenzene | 0.012 U | 0.013 UJ | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Methylene chloride | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 U | 0.012 U | 0.013 U |
| Styrene | 0.012 U | 0.013 UJ | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Tetrachloroethene | 0.012 U | 0.0010 J | 0.0090 J | 0.0020 J | 0.0020 J | 0.012 U | 0.013 U |
| Toluene | 0.012 U | 0.013 UJ | 0.0080 J | 0.0010 J | 0.0020 J | 0.00060 J | 0.00080 J |
| Trichloroethene | 0.0020 J | 0.00090 J | 0.15 U | 0.0020 J | 0.0030 J | 0.00060 J | 0.072 |
| Vinyl chloride | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.040 |
| Xylene (total) | 0.012 U | 0.013 UJ | 0.15 U | 0.00090 J | 0.0020 J | 0.012 U | 0.013 U |
| cis-1,2-Dichloroethene | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.00080 J | 0.012 U | 0.90 J |
| cis-1,3-Dichloropropylene | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| trans-1,2-Dichloroethene | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.029 |
| trans-1,3-Dichloropropene | 0.012 U | 0.013 U | 0.15 U | 0.015 U | 0.013 UJ | 0.012 U | 0.013 U |
| Total organic carbon (mg/Kg) | 1510 JB | 43000 B | 53700 B | 38100 B | 12500 B | 9570 B | 123000 B |
| Percent solids (%) | 83 | 79 | 64 | 66 | 79 | 85 | 75 |

NOTES: U - not detected, J - estimated value, B - blank contamination.



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Table 5-7b
Three Star Anodizing Site
Wappingers Falls, New York
Main Site Subsurface Soil Samples (2002)
Volatile Organic Compound Data

| Sample ID | SB-16 |
|---|---|
| Location Cross Reference | |
| Sample Date | 11/19/02 |
| Sample Depth | 20 - 22 ft. |
| Units | mg/Kg |
| Compound | |
| 1,1,1-Trichloroethane | 0.0040 J |
| 1,1,2,2-Tetrachloroethane | 0.011 U |
| 1,1,2-Trichloroethane | 0.011 U |
| 1,1-Dichloroethane | 0.010 J |
| 1,1-Dichloroethene | 0.011 U |
| 1,2-Dichloroethane | 0.011 U |
| 1,2-Dichloropropane | 0.011 U |
| 2-Butanone (MEK) | 0.011 U |
| 2-Hexanone | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | 0.011 U |
| Acetone | 0.011 U |
| Benzene | 0.011 U |
| Bromodichloromethane | 0.011 U |
| Bromoform | 0.011 U |
| Bromomethane | 0.011 U |
| Carbon disulfide | 0.011 U |
| Carbon tetrachloride | 0.011 U |
| Chlorobenzene | 0.011 U |
| Chloroethane | 0.0090 J |
| Chloroform | 0.011 U |
| Chloromethane | 0.011 U |
| Dibromochloromethane | 0.011 U |
| Ethylbenzene | 0.011 U |
| Methylene chloride | 0.011 U |
| Styrene | 0.011 U |
| Tetrachloroethene | 0.011 U |
| Toluene | 0.011 U |
| Trichloroethene | 0.0030 J |
| Vinyl chloride | 0.0040 J |
| Xylene (total) | 0.011 U |
| cis-1,2-Dichloroethene | 0.061 |
| cis-1,3-Dichloropropylene | 0.011 U |
| trans-1,2-Dichloroethene | 0.0010 J |
| trans-1,3-Dichloropropene | 0.011 U |
| Total organic carbon (mg/Kg) | 1520 JB |
| Percent solids (%) | 89 |

NOTES: U - not detected, J - estimated value, B - blank contamination.



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# Table 5-7c
## Three Star Anodizing Site
## Wappingers Falls, New York
## Deep Soil Boring Samples (2002)
## Volatile Organic Compound Data

| Sample ID | BMW-1 | BMW-1 | BMW-1 | BMW-2 (SB-14) | BMW-2 (SB-14) | BMW-2 (SB-14) | BMW-3 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 11/21/02 | 11/21/02 | 11/21/02 | 12/03/02 | 12/03/02 | 12/03/02 | 11/19/02 |
| Sample Depth | 20 - 22 ft. | 28 - 30 ft. | 38 - 40 ft. | 10 - 12 ft. | 22 - 24 ft. | 58 - 60 ft. | 12 - 13 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| 1,1,2,2-Tetrachloroethane | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| 1,1,2-Trichloroethane | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| 1,1-Dichloroethane | 0.072 U | 1.5 U | 0.011 U | 0.0010 J | 0.011 U | 0.012 UJ | 0.011 U |
| 1,1-Dichloroethene | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| 1,2-Dichloroethane | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| 1,2-Dichloropropane | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| 2-Butanone (MEK) | 0.072 U | 1.5 U | 0.011 U | 0.0050 J | 0.011 U | 0.012 UJ | 0.011 U |
| 2-Hexanone | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Acetone | 0.072 U | 1.5 U | 0.011 U | 0.012 J | 0.011 U | 0.012 U | 0.011 U |
| Benzene | 0.26 | 0.27 J | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Bromodichloromethane | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Bromoform | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Bromomethane | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Carbon disulfide | 0.072 U | 1.5 U | 0.011 U | 0.0030 J | 0.00090 J | 0.012 UJ | 0.011 U |
| Carbon tetrachloride | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Chlorobenzene | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Chloroethane | 0.072 U | 1.5 U | 0.011 U | 0.0040 J | 0.011 U | 0.012 UJ | 0.011 U |
| Chloroform | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Chloromethane | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Dibromochloromethane | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Ethylbenzene | 0.071 J | 1.1 J | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Methylene chloride | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 U | 0.011 U |
| Styrene | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Tetrachloroethene | 0.072 U | 1.5 U | 0.0030 J | 0.016 U | 0.0020 J | 0.0010 J | 0.011 U |
| Toluene | 0.072 U | 0.54 J | 0.00070 J | 0.00080 J | 0.011 U | 0.012 UJ | 0.00070 J |
| Trichloroethene | 0.072 U | 1.5 U | 0.0030 J | 0.0060 J | 0.0030 J | 0.0010 J | 0.011 U |
| Vinyl chloride | 0.072 U | 1.5 U | 0.011 U | 0.0010 J | 0.0020 J | 0.012 UJ | 0.011 U |
| Xylene (total) | 0.052 J | 3.1 | 0.0020 J | 0.0020 J | 0.011 U | 0.012 UJ | 0.011 U |
| cis-1,2-Dichloroethene | 0.072 U | 1.5 U | 0.0040 J | 0.0030 J | 0.050 | 0.012 UJ | 0.0040 J |
| cis-1,3-Dichloropropylene | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| trans-1,2-Dichloroethene | 0.072 U | 1.5 U | 0.011 U | 0.0010 J | 0.011 U | 0.012 UJ | 0.011 U |
| trans-1,3-Dichloropropene | 0.072 U | 1.5 U | 0.011 U | 0.016 U | 0.011 U | 0.012 UJ | 0.011 U |
| Total organic carbon (mg/Kg) | 6560 J | 2120 J | 519 J | 51900 B | 2890 B | 5830 B | 477 JB |
| Percent solids (%) | 81 | 84 | 87 | 64 | 86 | 85 | 91 |

NOTES: U - not detected, J - estimated value, B - blank contamination.



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Table 5-7c
Three Star Anodizing Site
Wappingers Falls, New York
Deep Soil Boring Samples (2002)
Volatile Organic Compound Data

| Sample ID | BMW-3 |
|---|---|
| Location Cross Reference | |
| Sample Date | 11/19/02 |
| Sample Depth | 18 - 20 ft. |
| Units | mg/Kg |
| Compound | |
| 1,1,1-Trichloroethane | 0.012 U |
| 1,1,2,2-Tetrachloroethane | 0.012 U |
| 1,1,2-Trichloroethane | 0.012 U |
| 1,1-Dichloroethane | 0.012 U |
| 1,1-Dichloroethene | 0.012 U |
| 1,2-Dichloroethane | 0.012 U |
| 1,2-Dichloropropane | 0.012 U |
| 2-Butanone (MEK) | 0.012 U |
| 2-Hexanone | 0.012 U |
| 4-Methyl-2-pentanone (MIBK) | 0.012 U |
| Acetone | 0.012 U |
| Benzene | 0.012 U |
| Bromodichloromethane | 0.012 U |
| Bromoform | 0.012 U |
| Bromomethane | 0.012 U |
| Carbon disulfide | 0.012 U |
| Carbon tetrachloride | 0.012 U |
| Chlorobenzene | 0.0010 J |
| Chloroethane | 0.012 U |
| Chloroform | 0.012 U |
| Chloromethane | 0.012 U |
| Dibromochloromethane | 0.012 U |
| Ethylbenzene | 0.012 U |
| Methylene chloride | 0.012 U |
| Styrene | 0.012 U |
| Tetrachloroethene | 0.012 U |
| Toluene | 0.0010 J |
| Trichloroethene | 0.012 U |
| Vinyl chloride | 0.012 U |
| Xylene (total) | 0.012 U |
| cis-1,2-Dichloroethene | 0.0030 J |
| cis-1,3-Dichloropropylene | 0.012 U |
| trans-1,2-Dichloroethene | 0.012 U |
| trans-1,3-Dichloropropene | 0.012 U |
| Total organic carbon (mg/Kg) | 2220 U |
| Percent solids (%) | 86 |

NOTES: U - not detected, J - estimated value, B - blank contamination.



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O'BRIEN & GERE ENGINEERS, INC.

# Table 5-8a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Compound | Sample ID | MW-1 | MW-1 | MW-6 | MW-6 | MW-6 | MW-6 | MW-7 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 04/26/01 | 04/26/01 | 05/02/01 | 05/02/01 | 05/02/01 | 05/02/01 | 05/03/01 |
| | | 0.5 - 2.5 ft. | 6 - 8 ft. | 6 - 8 ft. | 12 - 14 ft. | 24 - 26 ft. | 36 - 38 ft. | 8 - 10 ft. |
| | Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| 1,2,4-Trichlorobenzene | | 9.1 U | 0.041 J | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 1,2-Dichlorobenzene | | 9.1 U | 0.11 J | 0.061 J | 0.4 UJ | 0.4 UJ | 0.068 J | 0.46 UJ |
| 1,3-Dichlorobenzene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 1,4-Dichlorobenzene | | 9.1 U | 0.39 U | 0.21 J | 0.4 UJ | 0.4 UJ | 0.19 J | 0.46 UJ |
| Bis(2-chloroisopropyl) ether | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2,4,5-Trichlorophenol | | 22 U | 0.93 U | 1 UJ | 0.96 UJ | 0.95 UJ | 0.88 UJ | 1.1 UJ |
| 2,4,6-Trichlorophenol | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2,4-Dichlorophenol | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2,4-Dimethylphenol | | 9.1 U | 0.39 U | 0.057 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2,4-Dinitrophenol | | 22 U | 0.93 U | 1 UJ | 0.96 UJ | 0.95 UJ | 0.88 UJ | 1.1 UJ |
| 2,4-Dinitrotoluene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2,6-Dinitrotoluene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2-Chloronaphthalene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2-Chlorophenol | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2-Methylnaphthalene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2-Methylphenol | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 2-Nitroaniline | | 22 U | 0.93 U | 1 UJ | 0.96 UJ | 0.95 UJ | 0.88 UJ | 1.1 UJ |
| 2-Nitrophenol | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 3,3-Dichlorobenzidine | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 3-Nitroaniline | | 22 U | 0.93 U | 1 UJ | 0.96 UJ | 0.95 UJ | 0.88 UJ | 1.1 UJ |
| 4,6-Dinitro-2-methylphenol | | 22 U | 0.93 U | 1 UJ | 0.96 UJ | 0.95 UJ | 0.88 UJ | 1.1 UJ |
| 4-Bromophenyl phenyl ether | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 4-Chloro-3-methylphenol | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 4-Chloroaniline | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 4-Chlorophenyl phenyl ether | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 4-Methylphenol | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| 4-Nitroaniline | | 22 U | 0.93 U | 1 UJ | 0.96 UJ | 0.95 UJ | 0.88 UJ | 1.1 UJ |
| 4-Nitrophenol | | 22 U | 0.93 U | 1 UJ | 0.96 UJ | 0.95 UJ | 0.88 UJ | 1.1 UJ |
| Acenaphthene | | 2.5 J | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Acenaphthylene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Anthracene | | 6.7 J | 0.39 U | 0.088 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Benzo(a)anthracene | | 15 | 0.39 U | 0.24 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Benzo[a]pyrene | | 12 J | 0.39 U | 0.19 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Benzo(b)fluoranthene | | 18 J | 0.39 U | 0.34 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Benzo(ghi)perylene | | 4.1 J | 0.39 U | 0.079 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Benzo(k)fluoranthene | | 6.4 J | 0.39 U | 0.084 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Butyl benzyl phthalate | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Carbazole | | 3.5 J | 0.39 U | 0.056 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Chrysene | | 13 | 0.39 U | 0.25 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Di-n-butyl phthalate | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |

NOTES: U - not detected, J - estimated value.



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O'BRIEN & GERE ENGINEERS, INC.

# Table 5-8a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Compound | Sample ID | MW-1 | MW-1 | MW-6 | MW-6 | MW-6 | MW-6 | MW-7 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 04/26/01 | 04/26/01 | 05/02/01 | 05/02/01 | 05/02/01 | 05/02/01 | 05/03/01 |
| | | 0.5 - 2.5 ft. | 6 - 8 ft. | 6 - 8 ft. | 12 - 14 ft. | 24 - 26 ft. | 36 - 38 ft. | 8 - 10 ft. |
| | Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Di-n-octyl phthalate | | 9.1 UJ | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Dibenzo(a,h)anthracene | | 1.4 J | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Dibenzofuran | | 2.1 J | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Diethyl phthalate | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Dimethyl phthalate | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Fluoranthene | | 32 | 0.39 U | 0.53 J | 0.044 J | 0.4 UJ | 0.063 J | 0.46 UJ |
| Fluorene | | 2.1 J | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Hexachlorobenzene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Hexachlorobutadiene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Hexachlorocyclopentadiene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Hexachloroethane | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Indeno(1,2,3-cd)pyrene | | 4.2 J | 0.39 U | 0.079 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Isophorone | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| N-Nitrosodipropylamine | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| N-Nitrosodiphenylamine | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Naphthalene | | 0.93 J | 0.39 U | 0.23 J | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Nitrobenzene | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Pentachlorophenol | | 22 U | 0.93 U | 1 UJ | 0.96 UJ | 0.95 UJ | 0.88 UJ | 1.1 UJ |
| Phenanthrene | | 31 | 0.39 U | 0.45 J | 0.4 UJ | 0.4 UJ | 0.037 J | 0.46 UJ |
| Phenol | | 9.1 U | 0.39 U | 0.43 UJ | 0.066 J | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Pyrene | | 34 | 0.39 U | 0.48 J | 0.043 J | 0.4 UJ | 0.059 J | 0.46 UJ |
| Bis(2-chloroethoxy)methane | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Bis(2-chloroethyl)ether | | 9.1 U | 0.39 U | 0.43 UJ | 0.4 UJ | 0.4 UJ | 0.37 UJ | 0.46 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | | 9.1 U | 0.39 U | 0.25 J | 0.067 J | 0.041 J | 0.35 J | 0.73 J |
| Total organic carbon (mg/Kg) | | 10400 JN | 1120 JN | 66000 J | 4210 JN | 9960 J | 1910 J | 23500 J |
| Percent solids (%) | | 90.2 | 85.6 | 76.8 | 83.2 | 83.7 | 91 | 73.1 |

NOTES: U - not detected, J - estimated value.

O'BRIEN & GERE ENGINEERS, INC.

# Table 5-8a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Sample ID | MW-7 | MW-7 | MW-8 | MW-8 | TP-07 | TP-07 | TP-08 |
|---|---|---|---|---|---|---|---|
| Sample Date | 05/03/01 | 05/03/01 | 05/03/01 | 05/03/01 | 04/24/01 | 04/24/01 | 04/24/01 |
| Units | 12 - 16 ft. mg/Kg | 28 - 30 ft. mg/Kg | 2 - 4 ft. mg/Kg | 8 - 10 ft. mg/Kg | 4 - 6 ft. mg/Kg | 6 - 8 ft. mg/Kg | 6 - 7 ft. mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 1,2-Dichlorobenzene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 1,3-Dichlorobenzene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 1,4-Dichlorobenzene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Bis(2-chloroisopropyl) ether | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 2,4,5-Trichlorophenol | 0.91 UJ | 0.95 UJ | 0.91 UJ | 0.93 UJ | 0.91 U | 0.98 U | 1.2 U |
| 2,4,6-Trichlorophenol | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 2,4-Dichlorophenol | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 2,4-Dimethylphenol | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 2,4-Dinitrophenol | 0.91 UJ | 0.95 UJ | 0.91 UJ | 0.93 UJ | 0.91 U | 0.98 U | 1.2 U |
| 2,4-Dinitrotoluene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 2,6-Dinitrotoluene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 2-Chloronaphthalene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 2-Chlorophenol | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 2-Methylnaphthalene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.039 J | 0.41 U | 0.49 U |
| 2-Methylphenol | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 2-Nitroaniline | 0.91 UJ | 0.95 UJ | 0.91 UJ | 0.93 UJ | 0.91 U | 0.98 U | 1.2 U |
| 2-Nitrophenol | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 3,3-Dichlorobenzidine | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 3-Nitroaniline | 0.91 UJ | 0.95 UJ | 0.91 UJ | 0.93 UJ | 0.91 U | 0.98 U | 1.2 U |
| 4,6-Dinitro-2-methylphenol | 0.91 UJ | 0.95 UJ | 0.91 UJ | 0.93 UJ | 0.91 U | 0.98 U | 1.2 U |
| 4-Bromophenyl phenyl ether | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 4-Chloro-3-methylphenol | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 4-Chloroaniline | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 4-Chlorophenyl phenyl ether | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 4-Methylphenol | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| 4-Nitroaniline | 0.91 UJ | 0.95 UJ | 0.91 UJ | 0.93 UJ | 0.91 U | 0.98 U | 1.2 U |
| 4-Nitrophenol | 0.91 UJ | 0.95 UJ | 0.91 UJ | 0.93 UJ | 0.91 U | 0.98 U | 1.2 U |
| Acenaphthene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Acenaphthylene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.064 J | 0.41 U | 0.49 U |
| Anthracene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.075 J | 0.41 U | 0.49 U |
| Benzo(a)anthracene | 0.38 UJ | 0.4 UJ | 0.062 J | 0.078 J | 0.81 | 0.41 U | 0.49 U |
| Benzo[a]pyrene | 0.38 UJ | 0.4 UJ | 0.047 J | 0.061 J | 0.53 J | 0.41 U | 0.49 U |
| Benzo(b)fluoranthene | 0.38 UJ | 0.4 UJ | 0.078 J | 0.094 J | 0.95 J | 0.41 U | 0.49 U |
| Benzo(ghi)perylene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.055 J | 0.23 J | 0.41 U | 0.49 U |
| Benzo(k)fluoranthene | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.28 J | 0.41 U | 0.49 U |
| Butyl benzyl phthalate | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Carbazole | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Chrysene | 0.38 UJ | 0.4 UJ | 0.08 J | 0.078 J | 0.6 | 0.41 U | 0.49 U |
| Di-n-butyl phthalate | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |

NOTES: U - not detected, J - estimated value.



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O'BRIEN & GERE ENGINEERS, INC.

# Table 5-8a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Compound | Sample ID | MW-7 | MW-7 | MW-8 | MW-8 | TP-07 | TP-07 | TP-08 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 05/03/01 | 05/03/01 | 05/03/01 | 05/03/01 | 04/24/01 | 04/24/01 | 04/24/01 |
| | Units | 12 - 16 ft. mg/Kg | 28 - 30 ft. mg/Kg | 2 - 4 ft. mg/Kg | 8 - 10 ft. mg/Kg | 4 - 6 ft. mg/Kg | 6 - 8 ft. mg/Kg | 6 - 7 ft. mg/Kg |
| Di-n-octyl phthalate | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 UJ | 0.41 U | 0.49 U |
| Dibenzo(a,h)anthracene | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.086 J | 0.41 U | 0.49 U |
| Dibenzofuran | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Diethyl phthalate | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Dimethyl phthalate | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Fluoranthene | | 0.38 UJ | 0.4 UJ | 0.1 J | 0.13 J | 0.66 | 0.41 U | 0.49 U |
| Fluorene | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Hexachlorobenzene | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Hexachlorobutadiene | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Hexachlorocyclopentadiene | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Hexachloroethane | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Indeno(1,2,3-cd)pyrene | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.049 J | 0.24 J | 0.41 U | 0.49 U |
| Isophorone | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| N-Nitrosodipropylamine | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| N-Nitrosodiphenylamine | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Naphthalene | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.11 J | 0.41 U | 0.49 U |
| Nitrobenzene | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Pentachlorophenol | | 0.91 UJ | 0.95 UJ | 0.91 UJ | 0.93 UJ | 0.91 U | 0.98 U | 1.2 U |
| Phenanthrene | | 0.38 UJ | 0.4 UJ | 0.1 J | 0.12 J | 0.3 J | 0.41 U | 0.49 U |
| Phenol | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Pyrene | | 0.38 UJ | 0.4 UJ | 0.093 J | 0.13 J | 1.2 | 0.41 U | 0.49 U |
| Bis(2-chloroethoxy)methane | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Bis(2-chloroethyl)ether | | 0.38 UJ | 0.4 UJ | 0.38 UJ | 0.39 UJ | 0.38 U | 0.41 U | 0.49 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | | 0.17 J | 0.14 J | 0.15 J | 0.73 J | 0.38 U | 0.35 U | 0.49 U |
| Total organic carbon (mg/Kg) | | 3600 J | 685 J | 31800 J | 18700 J | 16100 J | 12900 J | 5500 J |
| Percent solids (%) | | 87.8 | 84.4 | 88.2 | 85.5 | 88.8 | 79.8 | 70.4 |

NOTES: U - not detected, J - estimated value.

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# Table 5-8a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Compound | Sample ID | TP-09 | TP-10 | TP-10 |
|---|---|---|---|---|
| | Sample Date | 04/24/01 | 04/24/01 | 04/24/01 |
| | | 7 - 9 ft. | 4 - 6 ft. | 7 - 9 ft. |
| | Units | mg/Kg | mg/Kg | mg/Kg |
| 1,2,4-Trichlorobenzene | | 0.42 U | 0.46 U | 0.37 U |
| 1,2-Dichlorobenzene | | 0.42 U | 0.46 U | 0.37 U |
| 1,3-Dichlorobenzene | | 0.42 U | 0.46 U | 0.37 U |
| 1,4-Dichlorobenzene | | 0.42 U | 0.46 U | 0.37 U |
| Bis(2-chloroisopropyl) ether | | 0.42 U | 0.46 U | 0.37 U |
| 2,4,5-Trichlorophenol | | 1 U | 1.1 U | 0.89 U |
| 2,4,6-Trichlorophenol | | 0.42 U | 0.46 U | 0.37 U |
| 2,4-Dichlorophenol | | 0.42 U | 0.46 U | 0.37 U |
| 2,4-Dimethylphenol | | 0.42 U | 0.46 U | 0.37 U |
| 2,4-Dinitrophenol | | 1 U | 1.7 | 0.046 J |
| 2,4-Dinitrotoluene | | 0.42 U | 0.095 J | 0.37 U |
| 2,6-Dinitrotoluene | | 0.42 U | 0.46 U | 0.37 U |
| 2-Chloronaphthalene | | 0.42 U | 0.46 U | 0.37 U |
| 2-Chlorophenol | | 0.42 U | 0.46 U | 0.37 U |
| 2-Methylnaphthalene | | 0.42 U | 0.46 U | 0.37 U |
| 2-Methylphenol | | 0.42 U | 0.46 U | 0.37 U |
| 2-Nitroaniline | | 1 U | 1.1 U | 0.89 U |
| 2-Nitrophenol | | 0.42 U | 0.46 U | 0.37 U |
| 3,3-Dichlorobenzidine | | 0.42 U | 0.46 U | 0.37 U |
| 3-Nitroaniline | | 1 U | 0.88 J | 0.89 U |
| 4,6-Dinitro-2-methylphenol | | 1 U | 1.1 U | 0.89 U |
| 4-Bromophenyl phenyl ether | | 0.42 U | 0.46 U | 0.37 U |
| 4-Chloro-3-methylphenol | | 0.42 U | 0.46 U | 0.37 U |
| 4-Chloroaniline | | 0.42 U | 0.46 U | 0.37 U |
| 4-Chlorophenyl phenyl ether | | 0.42 U | 0.46 U | 0.37 U |
| 4-Methylphenol | | 0.42 U | 0.46 U | 0.37 U |
| 4-Nitroaniline | | 1 U | 1.1 U | 0.89 U |
| 4-Nitrophenol | | 1 U | 1.1 U | 0.89 U |
| Acenaphthene | | 0.42 U | 0.46 U | 0.37 U |
| Acenaphthylene | | 0.42 U | 0.46 U | 0.37 U |
| Anthracene | | 0.42 U | 0.46 U | 0.37 U |
| Benzo(a)anthracene | | 0.42 U | 0.17 J | 0.13 J |
| Benzo[a]pyrene | | 0.42 U | 0.09 J | 0.098 J |
| Benzo(b)fluoranthene | | 0.42 U | 0.21 J | 0.15 J |
| Benzo(ghi)perylene | | 0.42 U | 0.46 U | 0.043 J |
| Benzo(k)fluoranthene | | 0.42 U | 0.055 J | 0.049 J |
| Butyl benzyl phthalate | | 0.42 U | 0.46 U | 0.37 U |
| Carbazole | | 0.42 U | 0.46 U | 0.37 U |
| Chrysene | | 0.42 U | 0.17 J | 0.13 J |
| Di-n-butyl phthalate | | 0.42 U | 0.46 U | 0.37 U |

NOTES: U - not detected, J - estimated value.



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# Table 5-8a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Compound | Sample ID | TP-09 | TP-10 | TP-10 |
|---|---|---|---|---|
| | Sample Date | 04/24/01 | 04/24/01 | 04/24/01 |
| | | 7 - 9 ft. | 4 - 6 ft. | 7 - 9 ft. |
| | Units | mg/Kg | mg/Kg | mg/Kg |
| Di-n-octyl phthalate | | 0.42 U | 0.46 U | 0.37 U |
| Dibenzo(a,h)anthracene | | 0.42 U | 0.46 U | 0.37 U |
| Dibenzofuran | | 0.42 U | 0.46 U | 0.37 U |
| Diethyl phthalate | | 0.42 U | 0.46 U | 0.37 U |
| Dimethyl phthalate | | 0.42 U | 0.46 U | 0.37 U |
| Fluoranthene | | 0.42 U | 0.21 J | 0.23 J |
| Fluorene | | 0.42 U | 0.46 U | 0.37 U |
| Hexachlorobenzene | | 0.42 U | 0.46 U | 0.37 U |
| Hexachlorobutadiene | | 0.42 U | 0.46 U | 0.37 U |
| Hexachlorocyclopentadiene | | 0.42 U | 0.46 U | 0.37 U |
| Hexachloroethane | | 0.42 U | 0.46 U | 0.37 U |
| Indeno(1,2,3-cd)pyrene | | 0.42 U | 0.46 U | 0.041 J |
| Isophorone | | 0.42 U | 0.46 U | 0.37 U |
| N-Nitrosodipropylamine | | 0.42 U | 0.46 U | 0.37 U |
| N-Nitrosodiphenylamine | | 0.42 U | 0.46 U | 0.37 U |
| Naphthalene | | 0.42 U | 0.19 J | 0.37 U |
| Nitrobenzene | | 0.42 U | 0.46 U | 0.37 U |
| Pentachlorophenol | | 1 U | 1.1 U | 0.89 U |
| Phenanthrene | | 0.42 U | 0.18 J | 0.15 J |
| Phenol | | 0.42 U | 0.46 U | 0.37 U |
| Pyrene | | 0.42 U | 0.19 J | 0.21 J |
| Bis(2-chloroethoxy)methane | | 0.42 U | 0.46 U | 0.37 U |
| Bis(2-chloroethyl)ether | | 0.42 U | 0.46 U | 0.37 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | | 0.42 U | 0.46 U | 0.37 U |
| Total organic carbon (mg/Kg) | | 6890 J | 38800 J | 30900 J |
| Percent solids (%) | | 81.8 | 78.1 | 86.7 |

NOTES: U - not detected, J - estimated value.

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# Table 5-8b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Semivolatile Organic Compound Data

| Sample ID | SB-3-02 | SB-4-02 | SB-4-02 | MW-9 | MW-9 | MW-9 | SB-6 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | (SB-3) | (SB-4) | (SB-4) | (SB-5) | (SB-5) | (SB-5) | |
| Sample Date | 12/10/02 | 11/21/02 | 11/21/02 | 11/20/02 | 11/20/02 | 11/20/02 | 11/21/02 |
| Sample Depth | 10 - 12 ft. | 10 - 12 ft. | 20 - 22 ft. | 6 - 8 ft. | 10 - 12 ft. | 16 - 18 ft. | 8 - 10 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 1,2-Dichlorobenzene | 0.29 J | 0.25 J | 0.12 J | 0.38 J | 2.0 | 0.044 J | 0.39 U |
| 1,3-Dichlorobenzene | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 1,4-Dichlorobenzene | 0.14 J | 0.24 J | 0.19 J | 0.077 J | 0.19 J | 0.13 J | 0.39 U |
| Bis(2-chloroisopropyl) ether | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 2,4,5-Trichlorophenol | 1.1 U | 1.3 U | 0.90 U | 1.0 U | 1.0 U | 0.96 U | 0.97 U |
| 2,4,6-Trichlorophenol | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 2,4-Dichlorophenol | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 2,4-Dimethylphenol | 0.42 U | 0.093 J | 0.36 U | 0.40 U | 0.11 J | 0.38 U | 0.39 U |
| 2,4-Dinitrophenol | 1.1 U | 1.3 U | 0.90 U | 1.0 U | 1.0 U | 0.96 U | 0.97 U |
| 2,4-Dinitrotoluene | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 2,6-Dinitrotoluene | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 2-Chloronaphthalene | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 2-Chlorophenol | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 2-Methylnaphthalene | 0.27 J | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 2-Methylphenol | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 2-Nitroaniline | 1.1 U | 1.3 U | 0.90 U | 1.0 U | 1.0 U | 0.96 U | 0.97 U |
| 2-Nitrophenol | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 3,3-Dichlorobenzidine | 0.42 UJ | 0.51 UJ | 0.36 UJ | 0.40 UJ | 0.41 UJ | 0.38 UJ | 0.39 UJ |
| 3-Nitroaniline | 1.1 UJ | 1.3 UJ | 0.90 UJ | 1.0 UJ | 1.0 UJ | 0.96 UJ | 0.97 UJ |
| 4,6-Dinitro-2-methylphenol | 1.1 U | 1.3 U | 0.90 U | 1.0 U | 1.0 U | 0.96 U | 0.97 U |
| 4-Bromophenyl phenyl ether | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 4-Chloro-3-methylphenol | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 4-Chloroaniline | 0.42 UJ | 0.51 UJ | 0.36 UJ | 0.40 UJ | 0.41 UJ | 0.38 UJ | 0.39 UJ |
| 4-Chlorophenyl phenyl ether | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 4-Methylphenol | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| 4-Nitroaniline | 1.1 U | 1.3 U | 0.90 U | 1.0 U | 1.0 U | 0.96 U | 0.97 U |
| 4-Nitrophenol | 1.1 U | 1.3 U | 0.90 U | 1.0 U | 1.0 U | 0.96 U | 0.97 U |
| Acenaphthene | 0.39 J | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Acenaphthylene | 0.10 J | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Anthracene | 2.2 | 0.51 U | 0.36 U | 0.40 U | 0.058 J | 0.38 U | 0.39 U |
| Benzo(a)anthracene | 7.8 D | 0.51 U | 0.066 J | 0.40 U | 0.070 J | 0.38 U | 0.39 U |
| Benzo[a]pyrene | 8.0 D | 0.51 U | 0.058 J | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Benzo(b)fluoranthene | 10 D | 0.060 J | 0.084 J | 0.40 U | 0.095 J | 0.38 U | 0.39 U |
| Benzo(ghi)perylene | 4.3 D | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Benzo(k)fluoranthene | 3.3 | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Butyl benzyl phthalate | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Carbazole | 1.1 | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Chrysene | 6.5 D | 0.51 U | 0.060 J | 0.40 U | 0.070 J | 0.38 U | 0.39 U |
| Di-n-butyl phthalate | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.043 J | 0.38 U | 0.39 U |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.



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FXP File: Q:\10653_NYSDEC\27258_THREESTAR\TABLEPRS.FXP

File Number: 10653.27258

# Table 5-8b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Semivolatile Organic Compound Data

| Sample ID | SB-3-02 | SB-4-02 | SB-4-02 | MW-9 | MW-9 | MW-9 | SB-6 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | (SB-3) | (SB-4) | (SB-4) | (SB-5) | (SB-5) | (SB-5) | |
| Sample Date | 12/10/02 | 11/21/02 | 11/21/02 | 11/20/02 | 11/20/02 | 11/20/02 | 11/21/02 |
| Sample Depth | 10 - 12 ft. | 10 - 12 ft. | 20 - 22 ft. | 6 - 8 ft. | 10 - 12 ft. | 16 - 18 ft. | 8 - 10 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Dibenzo(a,h)anthracene | 1.3 | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Dibenzofuran | 0.56 | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Diethyl phthalate | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Dimethyl phthalate | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Fluoranthene | 12 D | 0.073 J | 0.067 J | 0.40 U | 0.15 J | 0.38 U | 0.39 U |
| Fluorene | 0.52 | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Hexachlorobenzene | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Hexachlorobutadiene | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Hexachlorocyclopentadiene | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Hexachloroethane | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Indeno(1,2,3-cd)pyrene | 4.3 D | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Isophorone | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| N-Nitrosodipropylamine | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| N-Nitrosodiphenylamine | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Naphthalene | 0.89 | 0.062 J | 0.36 U | 0.40 U | 0.084 J | 0.38 U | 0.39 U |
| Nitrobenzene | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Pentachlorophenol | 1.1 U | 1.3 U | 0.90 U | 1.0 U | 1.0 U | 0.96 U | 0.97 U |
| Phenanthrene | 8.4 D | 0.51 U | 0.36 U | 0.40 U | 0.16 J | 0.38 U | 0.39 U |
| Phenol | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.061 J | 0.38 U | 0.39 U |
| Pyrene | 11 D | 0.075 J | 0.061 J | 0.40 U | 0.15 J | 0.38 U | 0.39 U |
| Bis(2-chloroethoxy)methane | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Bis(2-chloroethyl)ether | 0.42 U | 0.51 U | 0.36 U | 0.40 U | 0.41 U | 0.38 U | 0.39 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.26 J | 1.9 | 0.24 J | 0.43 | 0.31 J | 0.056 J | 0.15 J |
| Total organic carbon (mg/Kg) | 12200 J | 33600 J | 54600 J | 840 JB | 17400 B | 486 JB | 15000 J |
| Percent solids (%) | 79 | 65 | 93 | 83 | 82 | 87 | 86 |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.



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FXP File: Q:\10653_NYSDEC\27258_THREESTAR\TABLEPRS.FXP

File Number: 10653.27258

# Table 5-8b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Semivolatile Organic Compound Data

| Sample ID | SB-6 | SB-7 | SB-7 | MW-10 (SB-8) | MW-10 (SB-8) | MW-10 DUP (SB-8) | MW-10 (SB-8) |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 11/21/02 | 12/09/02 | 12/09/02 | 11/20/02 | 11/20/02 | 11/20/02 | 11/20/02 |
| Sample Depth | 18 - 20 ft. | 12 - 14 ft. | 18 - 20 ft. | 2 - 4 ft. | 10 - 12 ft. | 10 - 12 ft. | 16 - 18 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 1,2-Dichlorobenzene | 0.38 U | 0.060 J | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 1,3-Dichlorobenzene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 1,4-Dichlorobenzene | 0.38 U | 0.085 J | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Bis(2-chloroisopropyl) ether | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 2,4,5-Trichlorophenol | 0.95 U | 0.98 U | 0.96 U | 0.92 U | 0.98 U | 0.99 U | 1.4 U |
| 2,4,6-Trichlorophenol | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 2,4-Dichlorophenol | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 2,4-Dimethylphenol | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 2,4-Dinitrophenol | 0.95 U | 0.98 U | 0.96 U | 0.92 U | 0.98 U | 0.99 U | 1.4 U |
| 2,4-Dinitrotoluene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 2,6-Dinitrotoluene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 2-Chloronaphthalene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 2-Chlorophenol | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 2-Methylnaphthalene | 0.38 U | 0.39 U | 0.38 U | 0.74 | 0.39 U | 0.40 U | 0.55 U |
| 2-Methylphenol | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 2-Nitroaniline | 0.95 U | 0.98 U | 0.96 U | 0.92 U | 0.98 U | 0.99 U | 1.4 U |
| 2-Nitrophenol | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 3,3-Dichlorobenzidine | 0.38 UJ | 0.39 UJ | 0.38 UJ | 0.37 UJ | 0.39 UJ | 0.40 UJ | 0.55 UJ |
| 3-Nitroaniline | 0.95 UJ | 0.98 UJ | 0.96 UJ | 0.92 UJ | 0.98 UJ | 0.99 UJ | 1.4 UJ |
| 4,6-Dinitro-2-methylphenol | 0.95 U | 0.98 U | 0.96 U | 0.92 U | 0.98 U | 0.99 U | 1.4 U |
| 4-Bromophenyl phenyl ether | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 4-Chloro-3-methylphenol | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 4-Chloroaniline | 0.38 UJ | 0.39 UJ | 0.38 UJ | 0.37 UJ | 0.39 UJ | 0.40 UJ | 0.55 UJ |
| 4-Chlorophenyl phenyl ether | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 4-Methylphenol | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| 4-Nitroaniline | 0.95 U | 0.98 U | 0.96 U | 0.92 U | 0.98 U | 0.99 U | 1.4 U |
| 4-Nitrophenol | 0.95 U | 0.98 U | 0.96 U | 0.92 U | 0.98 U | 0.99 U | 1.4 U |
| Acenaphthene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Acenaphthylene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Anthracene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Benzo(a)anthracene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Benzo[a]pyrene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Benzo(b)fluoranthene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Benzo(ghi)perylene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Benzo(k)fluoranthene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Butyl benzyl phthalate | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Carbazole | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Chrysene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Di-n-butyl phthalate | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.11 J | 0.55 U |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

# Table 5-8b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Semivolatile Organic Compound Data

| Sample ID | SB-6 | SB-7 | SB-7 | MW-10 (SB-8) | MW-10 (SB-8) | MW-10 DUP (SB-8) | MW-10 (SB-8) |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 11/21/02 | 12/09/02 | 12/09/02 | 11/20/02 | 11/20/02 | 11/20/02 | 11/20/02 |
| Sample Depth | 18 - 20 ft. | 12 - 14 ft. | 18 - 20 ft. | 2 - 4 ft. | 10 - 12 ft. | 10 - 12 ft. | 16 - 18 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Dibenzo(a,h)anthracene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Dibenzofuran | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Diethyl phthalate | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Dimethyl phthalate | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Fluoranthene | 0.38 U | 0.070 J | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Fluorene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Hexachlorobenzene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Hexachlorobutadiene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Hexachlorocyclopentadiene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Hexachloroethane | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Indeno(1,2,3-cd)pyrene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Isophorone | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| N-Nitrosodipropylamine | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| N-Nitrosodiphenylamine | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Naphthalene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Nitrobenzene | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Pentachlorophenol | 0.95 U | 0.98 U | 0.96 U | 0.92 U | 0.98 U | 0.99 U | 1.4 U |
| Phenanthrene | 0.38 U | 0.050 J | 0.38 U | 0.41 | 0.39 U | 0.40 U | 0.55 U |
| Phenol | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Pyrene | 0.38 U | 0.069 J | 0.38 U | 0.15 J | 0.39 U | 0.40 U | 0.55 U |
| Bis(2-chloroethoxy)methane | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Bis(2-chloroethyl)ether | 0.38 U | 0.39 U | 0.38 U | 0.37 U | 0.39 U | 0.40 U | 0.55 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.081 J | 0.18 J | 0.049 J | 0.37 | 0.10 J | 0.077 J | 0.54 J |
| Total organic carbon (mg/Kg) | 2300 UJ | 247000 | 5920 J | 6250 B | 2120 JB | 2500 B | 41800 B |
| Percent solids (%) | 88 | 85 | 87 | 91 | 85 | 84 | 61 |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

# Table 5-8b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Semivolatile Organic Compound Data

| Sample ID | SB-9 | SB-9 | MW-12 | MW-12 | MW-12 | SB-12 | SB-12 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | (SB-11) | (SB-11) | (SB-11) | | |
| Sample Date | 11/21/02 | 11/21/02 | 12/09/02 | 12/10/02 | 12/10/02 | 12/04/02 | 12/04/02 |
| Sample Depth | 4 - 6 ft. | 18 - 19.5 ft. | 0 - 2 ft. | 12 - 14 ft. | 18 - 20 ft. | 4 - 6 ft. | 14 - 16 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 1,2-Dichlorobenzene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 1,3-Dichlorobenzene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 1,4-Dichlorobenzene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Bis(2-chloroisopropyl) ether | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2,4,5-Trichlorophenol | 0.95 U | 0.97 U | 0.99 U | 1.0 U | 0.96 U | 1.0 U | 0.96 U |
| 2,4,6-Trichlorophenol | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2,4-Dichlorophenol | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2,4-Dimethylphenol | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2,4-Dinitrophenol | 0.95 U | 0.97 U | 0.99 U | 1.0 U | 0.96 U | 1.0 U | 0.96 U |
| 2,4-Dinitrotoluene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2,6-Dinitrotoluene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2-Chloronaphthalene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2-Chlorophenol | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2-Methylnaphthalene | 0.38 U | 0.39 U | 0.16 J | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2-Methylphenol | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 2-Nitroaniline | 0.95 U | 0.97 U | 0.99 U | 1.0 U | 0.96 U | 1.0 U | 0.96 U |
| 2-Nitrophenol | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 3,3-Dichlorobenzidine | 0.38 UJ | 0.39 UJ | 0.40 UJ | 0.40 UJ | 0.38 UJ | 0.41 UJ | 0.38 UJ |
| 3-Nitroaniline | 0.95 UJ | 0.97 UJ | 0.99 UJ | 1.0 UJ | 0.96 UJ | 1.0 UJ | 0.96 UJ |
| 4,6-Dinitro-2-methylphenol | 0.95 U | 0.97 U | 0.99 U | 1.0 U | 0.96 U | 1.0 U | 0.96 U |
| 4-Bromophenyl phenyl ether | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 4-Chloro-3-methylphenol | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 4-Chloroaniline | 0.38 UJ | 0.39 UJ | 0.40 UJ | 0.40 UJ | 0.38 UJ | 0.41 UJ | 0.38 UJ |
| 4-Chlorophenyl phenyl ether | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 4-Methylphenol | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| 4-Nitroaniline | 0.95 U | 0.97 U | 0.99 U | 1.0 U | 0.96 U | 1.0 U | 0.96 U |
| 4-Nitrophenol | 0.95 U | 0.97 U | 0.99 U | 1.0 U | 0.96 U | 1.0 U | 0.96 U |
| Acenaphthene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Acenaphthylene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Anthracene | 0.38 U | 0.39 U | 0.091 J | 0.40 U | 0.38 U | 0.12 J | 0.38 U |
| Benzo(a)anthracene | 0.13 J | 0.39 U | 0.23 J | 0.40 U | 0.38 U | 0.43 | 0.094 J |
| Benzo[a]pyrene | 0.12 J | 0.39 U | 0.19 J | 0.096 J | 0.38 U | 0.35 J | 0.17 J |
| Benzo(b)fluoranthene | 0.18 J | 0.39 U | 0.30 J | 0.40 U | 0.38 U | 0.51 | 0.20 J |
| Benzo(ghi)perylene | 0.074 J | 0.39 U | 0.11 J | 0.40 U | 0.38 U | 0.15 J | 0.10 J |
| Benzo(k)fluoranthene | 0.075 J | 0.39 U | 0.083 J | 0.40 U | 0.38 U | 0.18 J | 0.058 J |
| Butyl benzyl phthalate | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Carbazole | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.061 J | 0.38 U |
| Chrysene | 0.14 J | 0.39 U | 0.27 J | 0.40 U | 0.38 U | 0.38 J | 0.086 J |
| Di-n-butyl phthalate | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.047 J | 0.38 U |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

Table 5-8b
Three Star Anodizing Site
Wappingers Falls, New York
Main Site Subsurface Soil Samples (2002)
Semivolatile Organic Compound Data

| Sample ID | SB-9 | SB-9 | MW-12 | MW-12 | MW-12 | SB-12 | SB-12 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | (SB-11) | (SB-11) | (SB-11) | | |
| Sample Date | 11/21/02 | 11/21/02 | 12/09/02 | 12/10/02 | 12/10/02 | 12/04/02 | 12/04/02 |
| Sample Depth | 4 - 6 ft. | 18 - 19.5 ft. | 0 - 2 ft. | 12 - 14 ft. | 18 - 20 ft. | 4 - 6 ft. | 14 - 16 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Dibenzo(a,h)anthracene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.053 J | 0.38 U |
| Dibenzofuran | 0.38 U | 0.39 U | 0.064 J | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Diethyl phthalate | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Dimethyl phthalate | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Fluoranthene | 0.23 J | 0.39 U | 0.42 | 0.40 U | 0.38 U | 0.68 | 0.087 J |
| Fluorene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.051 J | 0.38 U |
| Hexachlorobenzene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Hexachlorobutadiene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 UJ | 0.38 UJ |
| Hexachlorocyclopentadiene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Hexachloroethane | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Indeno(1,2,3-cd)pyrene | 0.067 J | 0.39 U | 0.11 J | 0.40 U | 0.38 U | 0.16 J | 0.098 J |
| Isophorone | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| N-Nitrosodipropylamine | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| N-Nitrosodiphenylamine | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Naphthalene | 0.38 U | 0.39 U | 0.15 J | 0.40 U | 0.38 U | 0.17 J | 0.38 U |
| Nitrobenzene | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Pentachlorophenol | 0.95 U | 0.97 U | 0.99 U | 1.0 U | 0.96 U | 1.0 U | 0.96 U |
| Phenanthrene | 0.14 J | 0.39 U | 0.40 J | 0.40 U | 0.38 U | 0.54 | 0.38 U |
| Phenol | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.11 J | 0.38 U |
| Pyrene | 0.21 J | 0.39 U | 0.42 | 0.40 U | 0.38 U | 0.72 | 0.10 J |
| Bis(2-chloroethoxy)methane | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Bis(2-chloroethyl)ether | 0.38 U | 0.39 U | 0.40 U | 0.40 U | 0.38 U | 0.41 U | 0.38 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.45 | 0.043 J | 0.24 J | 0.075 J | 0.21 J | 0.12 J | 0.059 J |
| Total organic carbon (mg/Kg) | 86000 J | 5620 J | 26000 | 4830 J | 552 J | 32800 B | 581 JB |
| Percent solids (%) | 88 | 86 | 84 | 83 | 87 | 82 | 87 |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

# Table 5-8b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Semivolatile Organic Compound Data

| Sample ID | SB-12 DUP | MW-11 | MW-11 | MW-11 | MW-13 | MW-13 | SB-16 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | (SB-13) | (SB-13) | (SB-13) | (SB-15) | (SB-15) | |
| Sample Date | 12/04/02 | 12/02/02 | 12/02/02 | 12/02/02 | 12/05/02 | 12/05/02 | 11/19/02 |
| Sample Depth | 14 - 16 ft. | 4 - 6 ft. | 16 - 18 ft. | 20 - 22 ft. | 18 - 20 ft. | 26 - 28 ft. | 10 - 12 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 1,2-Dichlorobenzene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 1,3-Dichlorobenzene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 1,4-Dichlorobenzene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Bis(2-chloroisopropyl) ether | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2,4,5-Trichlorophenol | 1.0 U | 1.1 U | 13 U | 1.3 U | 1.1 U | 0.98 U | 1.1 U |
| 2,4,6-Trichlorophenol | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2,4-Dichlorophenol | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2,4-Dimethylphenol | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2,4-Dinitrophenol | 1.0 U | 1.1 U | 13 U | 1.3 U | 1.1 U | 0.98 U | 1.1 U |
| 2,4-Dinitrotoluene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2,6-Dinitrotoluene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2-Chloronaphthalene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2-Chlorophenol | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2-Methylnaphthalene | 0.40 U | 0.42 U | 2.4 J | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2-Methylphenol | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 2-Nitroaniline | 1.0 U | 1.1 U | 1.6 J | 1.3 U | 1.1 U | 0.98 U | 1.1 U |
| 2-Nitrophenol | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 3,3-Dichlorobenzidine | 0.40 UJ | 0.42 UJ | 5.2 UJ | 0.51 U | 0.42 U | 0.39 U | 0.44 UJ |
| 3-Nitroaniline | 1.0 UJ | 1.1 UJ | 13 UJ | 1.3 UJ | 1.1 UJ | 0.98 UJ | 1.1 UJ |
| 4,6-Dinitro-2-methylphenol | 1.0 U | 1.1 U | 13 U | 1.3 U | 1.1 U | 0.98 U | 1.1 U |
| 4-Bromophenyl phenyl ether | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 4-Chloro-3-methylphenol | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 4-Chloroaniline | 0.40 UJ | 0.42 UJ | 5.2 UJ | 0.51 UJ | 0.42 UJ | 0.39 UJ | 0.070 J |
| 4-Chlorophenyl phenyl ether | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 4-Methylphenol | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| 4-Nitroaniline | 1.0 U | 1.1 U | 4.3 J | 1.3 U | 1.1 U | 0.98 U | 1.1 U |
| 4-Nitrophenol | 1.0 U | 1.1 U | 13 U | 1.3 U | 1.1 U | 0.98 U | 1.1 U |
| Acenaphthene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Acenaphthylene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Anthracene | 0.40 U | 0.094 J | 1.6 J | 3.1 | 0.42 U | 0.39 U | 0.44 U |
| Benzo(a)anthracene | 0.40 U | 0.25 J | 2.5 J | 0.19 J | 0.078 J | 0.054 J | 0.44 U |
| Benzo[a]pyrene | 0.40 U | 0.20 J | 1.7 J | 0.15 J | 0.076 J | 0.053 J | 0.44 U |
| Benzo(b)fluoranthene | 0.40 U | 0.30 J | 3.5 J | 0.25 J | 0.11 J | 0.072 J | 0.44 U |
| Benzo(ghi)perylene | 0.40 U | 0.11 J | 0.88 J | 0.069 J | 0.054 J | 0.39 U | 0.44 U |
| Benzo(k)fluoranthene | 0.40 U | 0.094 J | 0.85 J | 0.089 J | 0.42 U | 0.39 U | 0.44 U |
| Butyl benzyl phthalate | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Carbazole | 0.40 U | 0.047 J | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Chrysene | 0.40 U | 0.25 J | 2.5 J | 0.20 J | 0.078 J | 0.051 J | 0.44 U |
| Di-n-butyl phthalate | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.



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Table 5-8b
Three Star Anodizing Site
Wappingers Falls, New York
Main Site Subsurface Soil Samples (2002)
Semivolatile Organic Compound Data

| Sample ID | SB-12 DUP | MW-11 | MW-11 | MW-11 | MW-13 | MW-13 | SB-16 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | (SB-13) | (SB-13) | (SB-13) | (SB-15) | (SB-15) | |
| Sample Date | 12/04/02 | 12/02/02 | 12/02/02 | 12/02/02 | 12/05/02 | 12/05/02 | 11/19/02 |
| Sample Depth | 14 - 16 ft. | 4 - 6 ft. | 16 - 18 ft. | 20 - 22 ft. | 18 - 20 ft. | 26 - 28 ft. | 10 - 12 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.40 U | 0.42 U | 5.2 UJ | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Dibenzo(a,h)anthracene | 0.40 U | 0.42 U | 5.2 UJ | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Dibenzofuran | 0.40 U | 0.42 U | 0.53 J | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Diethyl phthalate | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Dimethyl phthalate | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Fluoranthene | 0.40 U | 0.44 | 4.4 J | 0.30 J | 0.11 J | 0.081 J | 0.44 U |
| Fluorene | 0.40 U | 0.42 U | 0.70 J | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Hexachlorobenzene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Hexachlorobutadiene | 0.40 UJ | 0.42 U | 5.2 U | 0.51 UJ | 0.42 U | 0.39 U | 0.44 U |
| Hexachlorocyclopentadiene | 0.40 U | 0.42 UJ | 5.2 UJ | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Hexachloroethane | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Indeno(1,2,3-cd)pyrene | 0.40 U | 0.097 J | 0.90 J | 0.072 J | 0.050 J | 0.39 U | 0.44 U |
| Isophorone | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| N-Nitrosodipropylamine | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| N-Nitrosodiphenylamine | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Naphthalene | 0.40 U | 0.42 U | 150 D | 3.3 | 0.42 U | 0.39 U | 0.44 U |
| Nitrobenzene | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Pentachlorophenol | 1.0 U | 1.1 U | 13 U | 1.3 U | 1.1 U | 0.98 U | 1.1 U |
| Phenanthrene | 0.40 U | 0.41 J | 4.5 J | 0.33 J | 0.092 J | 0.060 J | 0.44 U |
| Phenol | 0.40 U | 0.42 U | 5.2 U | 0.056 J | 0.42 U | 0.39 U | 0.44 U |
| Pyrene | 0.40 U | 0.50 | 4.9 J | 0.34 J | 0.14 J | 0.081 J | 0.44 U |
| Bis(2-chloroethoxy)methane | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Bis(2-chloroethyl)ether | 0.40 U | 0.42 U | 5.2 U | 0.51 U | 0.42 U | 0.39 U | 0.44 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.067 J | 0.31 J | 5.2 U | 0.095 J | 0.077 J | 0.045 J | 0.20 J |
| Total organic carbon (mg/Kg) | 1510 JB | 43000 B | 53700 B | 38100 B | 12500 B | 9570 B | 123000 B |
| Percent solids (%) | 83 | 79 | 64 | 66 | 79 | 85 | 75 |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

Table 5-8b
Three Star Anodizing Site
Wappingers Falls, New York
Main Site Subsurface Soil Samples (2002)
Semivolatile Organic Compound Data

| Sample ID | SB-16 |
|---|---|
| Location Cross Reference | |
| Sample Date | 11/19/02 |
| Sample Depth | 20 - 22 ft. |
| Units | mg/Kg |
| Compound | |
| 1,2,4-Trichlorobenzene | 0.37 U |
| 1,2-Dichlorobenzene | 0.37 U |
| 1,3-Dichlorobenzene | 0.37 U |
| 1,4-Dichlorobenzene | 0.37 U |
| Bis(2-chloroisopropyl) ether | 0.37 U |
| 2,4,5-Trichlorophenol | 0.94 U |
| 2,4,6-Trichlorophenol | 0.37 U |
| 2,4-Dichlorophenol | 0.37 U |
| 2,4-Dimethylphenol | 0.37 U |
| 2,4-Dinitrophenol | 0.94 U |
| 2,4-Dinitrotoluene | 0.37 U |
| 2,6-Dinitrotoluene | 0.37 U |
| 2-Chloronaphthalene | 0.37 U |
| 2-Chlorophenol | 0.37 U |
| 2-Methylnaphthalene | 0.37 U |
| 2-Methylphenol | 0.37 U |
| 2-Nitroaniline | 0.94 U |
| 2-Nitrophenol | 0.37 U |
| 3,3-Dichlorobenzidine | 0.37 UJ |
| 3-Nitroaniline | 0.94 UJ |
| 4,6-Dinitro-2-methylphenol | 0.94 U |
| 4-Bromophenyl phenyl ether | 0.37 U |
| 4-Chloro-3-methylphenol | 0.37 U |
| 4-Chloroaniline | 0.37 UJ |
| 4-Chlorophenyl phenyl ether | 0.37 U |
| 4-Methylphenol | 0.37 U |
| 4-Nitroaniline | 0.94 U |
| 4-Nitrophenol | 0.94 U |
| Acenaphthene | 0.37 U |
| Acenaphthylene | 0.37 U |
| Anthracene | 0.37 U |
| Benzo(a)anthracene | 0.37 U |
| Benzo[a]pyrene | 0.37 U |
| Benzo(b)fluoranthene | 0.37 U |
| Benzo(ghi)perylene | 0.37 U |
| Benzo(k)fluoranthene | 0.37 U |
| Butyl benzyl phthalate | 0.37 U |
| Carbazole | 0.37 U |
| Chrysene | 0.37 U |
| Di-n-butyl phthalate | 0.37 U |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.



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Table 5-8b
Three Star Anodizing Site
Wappingers Falls, New York
Main Site Subsurface Soil Samples (2002)
Semivolatile Organic Compound Data

| Sample ID | SB-16 |
|---|---|
| Location Cross Reference | |
| Sample Date | 11/19/02 |
| Sample Depth | 20 - 22 ft. |
| Units | mg/Kg |
| Compound | |
| Di-n-octyl phthalate | 0.37 U |
| Dibenzo(a,h)anthracene | 0.37 U |
| Dibenzofuran | 0.37 U |
| Diethyl phthalate | 0.37 U |
| Dimethyl phthalate | 0.37 U |
| Fluoranthene | 0.37 U |
| Fluorene | 0.37 U |
| Hexachlorobenzene | 0.37 U |
| Hexachlorobutadiene | 0.37 U |
| Hexachlorocyclopentadiene | 0.37 U |
| Hexachloroethane | 0.37 U |
| Indeno(1,2,3-cd)pyrene | 0.37 U |
| Isophorone | 0.37 U |
| N-Nitrosodipropylamine | 0.37 U |
| N-Nitrosodiphenylamine | 0.37 U |
| Naphthalene | 0.048 J |
| Nitrobenzene | 0.37 U |
| Pentachlorophenol | 0.94 U |
| Phenanthrene | 0.37 U |
| Phenol | 0.37 U |
| Pyrene | 0.37 U |
| Bis(2-chloroethoxy)methane | 0.37 U |
| Bis(2-chloroethyl)ether | 0.37 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.051 J |
| Total organic carbon (mg/Kg) | 1520 JB |
| Percent solids (%) | 89 |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

# Table 5-8c
## Three Star Anodizing Site
## Wappingers Falls, New York
## Deep Soil Boring Samples (2002)
## Semivolatile Organic Compound Data

| Sample ID | BMW-1 | BMW-1 | BMW-1 | BMW-2 | BMW-2 | BMW-2 | BMW-3 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | (SB-14) | (SB-14) | (SB-14) | |
| Sample Date | 11/21/02 | 11/21/02 | 11/21/02 | 12/03/02 | 12/03/02 | 12/03/02 | 11/19/02 |
| Sample Depth | 20 - 22 ft. | 28 - 30 ft. | 38 - 40 ft. | 10 - 12 ft. | 22 - 24 ft. | 58 - 60 ft. | 12 - 13 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 1,2-Dichlorobenzene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 1,3-Dichlorobenzene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 1,4-Dichlorobenzene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Bis(2-chloroisopropyl) ether | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2,4,5-Trichlorophenol | 1.0 U | 9.9 U | 0.96 U | 1.3 U | 0.97 U | 0.98 U | 0.92 U |
| 2,4,6-Trichlorophenol | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2,4-Dichlorophenol | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2,4-Dimethylphenol | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2,4-Dinitrophenol | 1.0 U | 9.9 U | 0.96 U | 1.3 U | 0.97 U | 0.98 U | 0.92 U |
| 2,4-Dinitrotoluene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2,6-Dinitrotoluene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2-Chloronaphthalene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2-Chlorophenol | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2-Methylnaphthalene | 0.31 J | 27 | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2-Methylphenol | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 2-Nitroaniline | 1.0 U | 9.9 U | 0.96 U | 1.3 U | 0.97 U | 0.98 U | 0.92 U |
| 2-Nitrophenol | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 3,3-Dichlorobenzidine | 0.41 UJ | 4.0 UJ | 0.38 UJ | 0.52 UJ | 0.39 UJ | 0.39 UJ | 0.37 UJ |
| 3-Nitroaniline | 1.0 UJ | 9.9 UJ | 0.96 UJ | 1.3 UJ | 0.97 UJ | 0.98 UJ | 0.92 UJ |
| 4,6-Dinitro-2-methylphenol | 1.0 U | 9.9 U | 0.96 U | 1.3 U | 0.97 U | 0.98 U | 0.92 U |
| 4-Bromophenyl phenyl ether | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 4-Chloro-3-methylphenol | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 4-Chloroaniline | 0.41 UJ | 4.0 UJ | 0.38 UJ | 0.52 UJ | 0.39 UJ | 0.39 UJ | 0.37 UJ |
| 4-Chlorophenyl phenyl ether | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 4-Methylphenol | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| 4-Nitroaniline | 1.0 U | 9.9 U | 0.96 U | 1.3 U | 0.97 U | 0.98 U | 0.92 U |
| 4-Nitrophenol | 1.0 U | 9.9 U | 0.96 U | 1.3 U | 0.97 U | 0.98 U | 0.92 U |
| Acenaphthene | 0.69 | 23 | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Acenaphthylene | 0.41 U | 11 | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Anthracene | 0.045 J | 19 | 0.043 J | 0.17 J | 0.39 U | 0.39 U | 0.37 U |
| Benzo(a)anthracene | 0.18 J | 20 | 0.052 J | 0.36 J | 0.083 J | 0.39 U | 0.37 U |
| Benzo[a]pyrene | 0.17 J | 15 | 0.38 U | 0.30 J | 0.065 J | 0.39 U | 0.37 U |
| Benzo(b)fluoranthene | 0.21 J | 19 | 0.044 J | 0.46 J | 0.090 J | 0.39 U | 0.37 U |
| Benzo(ghi)perylene | 0.075 J | 4.3 | 0.38 U | 0.13 J | 0.39 U | 0.39 U | 0.37 U |
| Benzo(k)fluoranthene | 0.095 J | 7.9 | 0.38 U | 0.16 J | 0.39 U | 0.39 U | 0.37 U |
| Butyl benzyl phthalate | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Carbazole | 0.31 J | 7.7 | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Chrysene | 0.16 J | 14 | 0.042 J | 0.35 J | 0.064 J | 0.39 U | 0.37 U |
| Di-n-butyl phthalate | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |

NOTES: U - not detected, J - estimated value, B - blank contamination.

Table 5-8c
Three Star Anodizing Site
Wappingers Falls, New York
Deep Soil Boring Samples (2002)
Semivolatile Organic Compound Data

| Sample ID | BMW-1 | BMW-1 | BMW-1 | BMW-2 | BMW-2 | BMW-2 | BMW-3 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | (SB-14) | (SB-14) | (SB-14) | |
| Sample Date | 11/21/02 | 11/21/02 | 11/21/02 | 12/03/02 | 12/03/02 | 12/03/02 | 11/19/02 |
| Sample Depth | 20 - 22 ft. | 28 - 30 ft. | 38 - 40 ft. | 10 - 12 ft. | 22 - 24 ft. | 58 - 60 ft. | 12 - 13 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.41 U | 4.0 U | 0.38 U | 0.52 UJ | 0.39 U | 0.39 U | 0.37 U |
| Dibenzo(a,h)anthracene | 0.41 U | 1.7 J | 0.38 U | 0.52 UJ | 0.39 U | 0.39 U | 0.37 U |
| Dibenzofuran | 0.24 J | 21 | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Diethyl phthalate | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Dimethyl phthalate | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Fluoranthene | 0.30 J | 44 | 0.12 J | 0.55 | 0.15 J | 0.39 U | 0.37 U |
| Fluorene | 0.21 J | 24 | 0.044 J | 0.056 J | 0.39 U | 0.39 U | 0.37 U |
| Hexachlorobenzene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Hexachlorobutadiene | 0.41 U | 4.0 U | 0.38 U | 0.52 UJ | 0.39 UJ | 0.39 UJ | 0.37 U |
| Hexachlorocyclopentadiene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Hexachloroethane | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Indeno(1,2,3-cd)pyrene | 0.078 J | 4.9 | 0.38 U | 0.13 J | 0.39 U | 0.39 U | 0.37 U |
| Isophorone | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| N-Nitrosodipropylamine | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| N-Nitrosodiphenylamine | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Naphthalene | 2.6 | 78 | 0.095 J | 1.8 | 0.92 | 0.39 U | 0.37 U |
| Nitrobenzene | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Pentachlorophenol | 1.0 U | 9.9 U | 0.96 U | 1.3 U | 0.97 U | 0.98 U | 0.92 U |
| Phenanthrene | 0.26 J | 68 | 0.17 J | 0.40 J | 0.065 J | 0.39 U | 0.37 U |
| Phenol | 0.41 U | 4.0 U | 0.38 U | 0.11 J | 0.39 U | 0.39 U | 0.37 U |
| Pyrene | 0.27 J | 38 | 0.087 J | 0.69 | 0.14 J | 0.39 U | 0.37 U |
| Bis(2-chloroethoxy)methane | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Bis(2-chloroethyl)ether | 0.41 U | 4.0 U | 0.38 U | 0.52 U | 0.39 U | 0.39 U | 0.37 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.072 J | 4.0 U | 0.060 J | 0.64 | 0.39 U | 0.39 U | 0.15 J |
| Total organic carbon (mg/Kg) | 6560 J | 2120 J | 519 J | 51900 B | 2890 B | 5830 B | 477 JB |
| Percent solids (%) | 81 | 84 | 87 | 64 | 86 | 85 | 91 |

NOTES: U - not detected, J - estimated value, B - blank contamination.

# Table 5-8c
## Three Star Anodizing Site
## Wappingers Falls, New York
## Deep Soil Boring Samples (2002)
## Semivolatile Organic Compound Data

| Sample ID | BMW-3 |
|---|---|
| Location Cross Reference | |
| Sample Date | 11/19/02 |
| Sample Depth | 18 - 20 ft. |
| Units | mg/Kg |
| Compound | |
| 1,2,4-Trichlorobenzene | 0.39 U |
| 1,2-Dichlorobenzene | 0.39 U |
| 1,3-Dichlorobenzene | 0.39 U |
| 1,4-Dichlorobenzene | 0.39 U |
| Bis(2-chloroisopropyl) ether | 0.39 U |
| 2,4,5-Trichlorophenol | 0.97 U |
| 2,4,6-Trichlorophenol | 0.39 U |
| 2,4-Dichlorophenol | 0.39 U |
| 2,4-Dimethylphenol | 0.39 U |
| 2,4-Dinitrophenol | 0.97 U |
| 2,4-Dinitrotoluene | 0.39 U |
| 2,6-Dinitrotoluene | 0.39 U |
| 2-Chloronaphthalene | 0.39 U |
| 2-Chlorophenol | 0.39 U |
| 2-Methylnaphthalene | 0.39 U |
| 2-Methylphenol | 0.39 U |
| 2-Nitroaniline | 0.97 U |
| 2-Nitrophenol | 0.39 U |
| 3,3-Dichlorobenzidine | 0.39 UJ |
| 3-Nitroaniline | 0.97 UJ |
| 4,6-Dinitro-2-methylphenol | 0.97 U |
| 4-Bromophenyl phenyl ether | 0.39 U |
| 4-Chloro-3-methylphenol | 0.39 U |
| 4-Chloroaniline | 0.39 UJ |
| 4-Chlorophenyl phenyl ether | 0.39 U |
| 4-Methylphenol | 0.39 U |
| 4-Nitroaniline | 0.97 U |
| 4-Nitrophenol | 0.97 U |
| Acenaphthene | 0.39 U |
| Acenaphthylene | 0.39 U |
| Anthracene | 0.39 U |
| Benzo(a)anthracene | 0.39 U |
| Benzo[a]pyrene | 0.39 U |
| Benzo(b)fluoranthene | 0.39 U |
| Benzo(ghi)perylene | 0.39 U |
| Benzo(k)fluoranthene | 0.39 U |
| Butyl benzyl phthalate | 0.39 U |
| Carbazole | 0.39 U |
| Chrysene | 0.39 U |
| Di-n-butyl phthalate | 0.067 J |

NOTES: U - not detected, J - estimated value, B - blank contamination.



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FXP File: Q:\10653_NYSDEC\27258_THREESTAR\TABLEPRS.FXP

File Number: 10653.27258

Table 5-8c
Three Star Anodizing Site
Wappingers Falls, New York
Deep Soil Boring Samples (2002)
Semivolatile Organic Compound Data

| Sample ID | BMW-3 |
|---|---|
| Location Cross Reference | |
| Sample Date | 11/19/02 |
| Sample Depth | 18 - 20 ft. |
| Units | mg/Kg |
| Compound | |
| Di-n-octyl phthalate | 0.39 U |
| Dibenzo(a,h)anthracene | 0.39 U |
| Dibenzofuran | 0.39 U |
| Diethyl phthalate | 0.39 U |
| Dimethyl phthalate | 0.39 U |
| Fluoranthene | 0.39 U |
| Fluorene | 0.39 U |
| Hexachlorobenzene | 0.39 U |
| Hexachlorobutadiene | 0.39 U |
| Hexachlorocyclopentadiene | 0.39 U |
| Hexachloroethane | 0.39 U |
| Indeno(1,2,3-cd)pyrene | 0.39 U |
| Isophorone | 0.39 U |
| N-Nitrosodipropylamine | 0.39 U |
| N-Nitrosodiphenylamine | 0.39 U |
| Naphthalene | 0.39 U |
| Nitrobenzene | 0.39 U |
| Pentachlorophenol | 0.97 U |
| Phenanthrene | 0.39 U |
| Phenol | 0.39 U |
| Pyrene | 0.39 U |
| Bis(2-chloroethoxy)methane | 0.39 U |
| Bis(2-chloroethyl)ether | 0.39 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.14 J |
| Total organic carbon (mg/Kg) | 2220 U |
| Percent solids (%) | 86 |

NOTES: U - not detected, J - estimated value, B - blank contamination.

# Table 5-9a
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2001)
## Inorganic Data

| Sample ID | TP-07 | TP-07 | TP-08 | MW-6 | MW-6 | MW-6 | MW-6 | MW-1 | MW-1 | MW-7 |
|---|---|---|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | | | | |
| Sample Date | 4/24/2001 | 4/24/2001 | 4/24/2001 | 5/2/2001 | 5/2/2001 | 5/2/2001 | 5/2/2001 | 4/26/2001 | 4/26/2001 | 5/3/2001 |
| Sample Depth | 4 - 6 ft. | 6 - 8 ft. | 6 - 7 ft. | 6 - 8 ft. | 12 - 14 ft. | 24 - 26 ft. | 36 - 38 ft. | 0.5 - 2.5 ft. | 6 - 8 ft. | 8 - 10 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | | | | |
| Aluminum | 6760 | 8110 | 13000 | 3010 | 9610 | 10400 | 10700 | 13800 | 12600 | 8170 |
| Antimony | 0.47 N | 1.4 JN | --- | 0.61 JN | --- | 0.36 JN | --- | --- | --- | --- |
| Arsenic | 7.0 | 12 | 11 | 46 | 5.6 | 2.6 | 3.5 | 5.2 | 4.2 | 3.1 |
| Barium | 54 | 21 J | 59 J | 21 J | 19 J | 36 J | 31 J | 42 J | 28 J | 45 J |
| Beryllium | 0.37 J | 0.40 J | 0.58 J | 0.40 J | 0.42 J | 0.44 J | 0.45 J | 0.55 J | 0.51 J | 0.54 J |
| Cadmium | 0.76 J | 0.46 J | 0.27 J | 0.64 J | 0.35 J | 0.33 J | 0.41 J | 0.55 J | 0.31 J | 0.78 J |
| Calcium | 2760 | 1300 | 2350 | 8690 | 1190 J | 1630 J | 1340 J | 4040 | 2070 | 2880 |
| Chromium | 18 | 41 | 57 | 393 J | 13 J | 14 J | 15 J | 17 | 16 | 20 J |
| Chromium (Hexavalent) | --- | --- | --- | 15 | --- | --- | --- | --- | --- | --- |
| Cobalt | 6.2J | 15 | 10 J | 4.4 J | 8.2 J | 8.3 J | 8.9 J | 9.3 J | 8.8 J | 6.6 J |
| Copper | 45 | 63 | 71 | 29 | 13 J | 15 J | 16 J | 36 | 25 | 21 |
| Iron | 19400 | 40000 | 27100 | 8190 | 23000 J | 24000 J | 26700 J | 31700 | 30000 | 15600 |
| Lead | 353 | 31 | 214 | 78 JN | 8.9 J | 10 J | 8.4 J | 127 | 13 | 15 |
| Magnesium | 3300 | 4100 | 5400 | 3920 | 5050 | 5270 | 6310 | 6490 | 5990 | 3630 |
| Manganese | 335 | 196 | 297 | 291 | --- | --- | --- | 746 JN | 341 JN | 155 JN |
| Mercury | 1.4 | --- | --- | --- | --- | --- | --- | 0.25 | --- | 0.85 |
| Nickel | 15 | 30 | 23 | 19 | 46 | 21 | 26 | 23 | 23 | 32 |
| Potassium | 583 J | 761 J | 789 J | 185 J | 711 J | 811 J | 764 J | 861 J | 716 J | 609 J |
| Selenium | 1.6 | 1.6 | 3.2 | 0.56 JN | 0.95 J | 1.0 J | 1.0 J | 1.4 | 1.3 | 1.4 |
| Silver | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sodium | 47 J | 46 J | 71 J | 109 J | 37 J | 59 J | 46 J | 58 J | 43 J | 70 J |
| Thallium | --- | --- | --- | --- | 1.2 J | 1.3 J | 1.3 J | --- | --- | 1.6 J |
| Vanadium | 14 | 15 | 15 | 13 | 10 J | 12 J | 12 | 17 | 15 | 10 J |
| Zinc | 100 | 141 | 96 | 33 | 66 | 68 | 59 | 115 | 84 | 60 |
| Cyanide, total | --- | --- | --- | 0.85 | --- | --- | --- | --- | --- | --- |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent solids (%) | 89 | 80 | 70 | 77 | 83 | 84 | 91 | 90 | 86 | 73 |
| % TOC | 1.6 J | 1.3 J | 0.6 J | 6.6 J | 0.4 JN | 1.0 J | 0.2 J | 1.0 JN | 0.1 JN | 2.4 J |
| Total organic carbon (mg/Kg) | 16100 J | 12900 J | 5500 J | 66000 J | 4210 | 9960 J | 1910 | 10400 JN | 1120 JN | 23500 J |

NOTES: U - not detected, J - estimated value, NC - no criterion, --- - no data.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.

Table 5-9a
Three Star Anodizing Site
Wappingers Falls, New York
Main Site Subsurface Soil Samples (2001)
Inorganic Data

| Sample ID | MW-7 | MW-7 | TP-10 | TP-10 | MW-8 | MW-8 | TP-09 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 5/3/2001 | 5/3/2001 | 4/24/2001 | 4/24/2001 | 5/3/2001 | 5/3/2001 | 4/24/2001 |
| Sample Depth | 12 -16 ft. | 28 - 30 ft. | 4 - 6 ft. | 7 - 9 ft. | 2 - 4 ft. | 8 - 10 ft. | 7 - 9 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 11000 | 7500 | 3870 | 10600 | 7440 | 10900 | 12200 |
| Antimony | --- | --- | 2.1 JN | 1.0 JN | 0.47 JN | 0.92 JN | --- |
| Arsenic | 2.2 J | 4.2 | 50 | 52 | 28 | 33 | 2.0 J |
| Barium | 23 J | 20 J | 85 | 32 J | 38 J | 49 | 43 J |
| Beryllium | 0.49 J | 0.38 J | 0.13 J | 0.39 J | 0.53 J | 0.75 J | 0.53 J |
| Cadmium | 0.36 J | 0.30 J | 0.28 J | 0.25 J | 0.56 J | 0.59 J | 0.24 J |
| Calcium | 1280 | 23100 | 8030 | 13000 | 19200 | 9610 | 1540 |
| Chromium | 18 J | 11 J | 15 | 27 | 13 J | 20 J | 15 |
| Chromium (Hexavalent) | --- | --- | --- | --- | --- | --- | --- |
| Cobalt | 8.4 J | 8.2 J | 2.4 J | 7.4 J | 7.3 J | 10 J | 9.2 J |
| Copper | 17 | 25 | 63 | 100 | 41 | 58 | 22 |
| Iron | 26800 | 21100 | 43700 | 29300 | 17200 | 27600 | 28100 |
| Lead | 12 | 11 | 487 | 155 | 129 | 236 | 27 |
| Magnesium | 6490 | 7190 | 2450 | 10100 | 6470 JN | 7300 | 5650 |
| Manganese | 223 JN | 524 JN | 143 JN | 202 | 393 | 603 JN | 335 |
| Mercury | --- | --- | 0.99 | 0.45 | 0.50 | 0.12 J | 0.37 |
| Nickel | 30 | 17 | 7.7 J | 19 | 22 | 25 | 21 |
| Potassium | 758 J | 764 J | 2750 | 574 J | 801 J | 798 J | 613 J |
| Selenium | --- | 0.76 J | 2.9 | 0.99 J | 2.2 | 1.5 | 1.3 |
| Silver | --- | --- | --- | --- | --- | --- | --- |
| Sodium | 52 J | 53 J | 790 J | 59 J | 203 J | 109 J | 49 J |
| Thallium | 1.8 J | 1.2 J | --- | --- | 1.4 J | 1.6 J | --- |
| Vanadium | 12 | 9.5 J | 33 | 14 | 18 | 20 | 14 |
| Zinc | 66 | 68 | 46 | 106 | 95 | 111 | 67 |
| Cyanide, total | --- | --- | --- | --- | --- | --- | --- |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | --- |
| Percent solids (%) | 88 | 84 | 78 | 87 | 88 | 86 | 82 |
| % TOC | 0.4 J | 0.1 J | 3.9 J | 3.1 J | 3.2 J | 1.9 J | 0.7 J |
| Total organic carbon (mg/Kg) | 3600 | 685 J | 38800 J | 30900 J | 31800 J | 18700 J | 6890 J |

NOTES: U - not detected, J - estimated value, NC - no criterion, --- - no data.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.

# Table 5-9b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Inorganic Data

| Sample ID | SB-3-02 | SB-4-02 | SB-4-02 | MW-9 | MW-9 | MW-9 | SB-6 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | (SB-3) | (SB-4) | (SB-4) | (SB-5) | (SB-5) | (SB-5) | |
| Sample Date | 12/10/02 | 11/21/02 | 11/21/02 | 11/20/02 | 11/20/02 | 11/20/02 | 11/21/02 |
| Sample Depth | 10 - 12 ft. | 10 - 12 ft. | 20 - 22 ft. | 6 - 8 ft. | 10 - 12 ft. | 16 - 18 ft. | 8 - 10 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 9190 | 8040 | 8930 | 11900 | 13400 | 12900 | 12500 |
| Antimony | 16.2 J | 0.65 UJ | 0.45 UJ | 0.5 UJ | 0.51 UJ | 0.48 UJ | 0.49 UJ |
| Arsenic | 17.2 | 3.8 | 4.7 | 4.8 | 13.9 | 4 | 9.8 |
| Barium | 174 | 37.5 J | 24 J | 33.6 J | 40.7 J | 25.2 J | 28 J |
| Beryllium | 0.42 J | 0.4 J | 0.4 J | 0.46 J | 0.58 J | 0.44 J | 0.72 J |
| Cadmium | 2 | 0.58 J | 0.67 J | 0.41 J | 0.54 J | 0.29 J | 0.49 J |
| Calcium | 7940 | 1930 | 1010 J | 1410 | 5200 | 1030 J | 1160 J |
| Chromium | 36.2 J | 58.1 | 34.1 | 32 | 37.4 | 17.5 | 49.3 |
| Chromium (Hexavalent) | 5 UJ | 4.7 UJ | 7.7 J | 4.1 J | 5.5 U | 4.4 U | 4.1 UJ |
| Cobalt | 11.1 J | 7.8 J | 7.7 J | 10.2 J | 13.4 | 10.6 J | 14.9 |
| Copper | 653 | 17.2 | 15.3 | 18.3 | 48.6 | 20.1 | 49.4 |
| Iron | 104000 | 17600 | 22200 | 29300 | 30800 | 30900 | 31100 |
| Lead | 2860 | 14.5 | 16.2 | 13.3 | 52.7 | 10.8 | 36.2 |
| Magnesium | 5110 | 3720 | 4610 | 5600 | 6450 | 6720 | 5530 |
| Manganese | 827 | 188 | 167 | 251 | 602 | 203 | 381 |
| Mercury | 0.53 | 0.06 J | 0.05 J | 0.38 J | 0.18 J | 0.025 J | 0.07 J |
| Nickel | 73.2 | 16 | 18.4 | 22.8 | 27.3 | 26 | 28.9 |
| Potassium | 578 J | 604 J | 640 J | 647 J | 841 J | 945 J | 633 J |
| Selenium | 0.46 UJ | 0.55 UJ | 0.39 UJ | 0.43 UJ | 0.51 J | 0.41 UJ | 0.42 UJ |
| Silver | 0.31 U | 0.37 U | 0.26 U | 0.29 U | 0.29 U | 0.27 U | 0.28 U |
| Sodium | 123 J | 87.6 J | 41.3 J | 54.4 J | 83 | 49.4 J | 44.3 J |
| Thallium | 0.92 U | 1.2 J | 0.96 J | 0.87 U | 0.88 U | 1.1 J | 1.2 J |
| Vanadium | 17.2 | 9.5 J | 11.2 | 14.9 | 16.5 | 15.4 | 14.2 |
| Zinc | 500 | 61.4 | 63 | 78.1 | 103 | 67.4 | 87.6 |
| Cyanide, total | 0.64 U | 0.77 U | 1.7 | 0.6 U | 0.61 U | 0.64 | 0.58 U |
| Cyanide, amenable to chlorination | --- | --- | 1.7 JN | --- | --- | 0.57 JN | --- |
| Percent solids (%) | 78.5 | 65 | 92.7 | 83.2 | 82.2 | 87.4 | 85.6 |
| Total organic carbon (mg/Kg) | 12200 J | 33600 J | 54600 J | 840 JB | 17400 B | 486 JB | 15000 J |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.



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# Table 5-9b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Inorganic Data

| Sample ID | SB-6 | SB-7 | SB-7 | MW-10 | MW-10 | MW-10 DUP | MW-10 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | (SB-8) | (SB-8) | (SB-8) | (SB-8) |
| Sample Date | 11/21/02 | 12/09/02 | 12/09/02 | 11/20/02 | 11/20/02 | 11/20/02 | 11/20/02 |
| Sample Depth | 18 - 20 ft. | 12 - 14 ft. | 18 - 20 ft. | 2 - 4 ft. | 10 - 12 ft. | 10 - 12 ft. | 16 - 18 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 10900 | 8780 | 9420 | 12300 | 9760 | 10200 | 11000 |
| Antimony | 0.48 UJ | 0.5 UJ | 0.48 UJ | 0.46 UJ | 0.5 UJ | 0.5 UJ | 0.69 UJ |
| Arsenic | 4.1 | 22.2 | 15.1 | 6 | 4.6 | 6.7 | 3.3 J |
| Barium | 25.4 J | 29.8 J | 24.4 J | 83.3 | 35.7 J | 37.2 J | 60.4 J |
| Beryllium | 0.45 J | 0.4 J | 0.42 J | 0.57 J | 0.37 J | 0.39 J | 0.54 J |
| Cadmium | 0.28 J | 0.36 J | 0.44 J | 0.29 J | 0.6 J | 0.57 J | 0.45 J |
| Calcium | 1190 | 48700 | 1080 J | 56600 | 4950 | 11700 | 4140 |
| Chromium | 20.7 | 14 J | 15.6 J | 36.2 | 475 | 574 | 115 |
| Chromium (Hexavalent) | 4.4 UJ | 2.2 J | 1.2 J | 4.4 U | 2.2 J | 15 J | 7.9 U |
| Cobalt | 9.5 J | 7.4 J | 8.7 J | 8.6 J | 8 J | 8 J | 8.8 J |
| Copper | 21.1 | 25.9 | 25.5 | 24.9 | 38.9 | 40.9 | 22.2 |
| Iron | 25500 | 28700 | 26800 | 25900 | 21500 | 23800 | 21600 |
| Lead | 17.1 | 20.8 | 13.1 | 69.7 | 404 | 534 | 87.4 |
| Magnesium | 5110 | 32000 | 4870 | 26000 | 6120 | 7600 | 5170 |
| Manganese | 246 | 246 | 210 | 1100 | 227 | 346 | 276 |
| Mercury | 0.01 UJ | 0.03 J | 0.01 U | 0.07 J | 0.03 J | 0.03 J | 0.03 J |
| Nickel | 22.3 | 62.8 | 48.2 | 20.9 | 24.9 | 23.4 | 20 |
| Potassium | 695 J | 591 J | 687 J | 1100 | 754 J | 853 J | 817 J |
| Selenium | 0.41 UJ | 0.43 UJ | 0.48 J | 0.4 UJ | 0.43 UJ | 0.43 UJ | 0.59 UJ |
| Silver | 0.27 U | 0.36 J | 0.61 J | 0.26 U | 0.28 U | 0.29 U | 0.39 U |
| Sodium | 39.5 J | 89.1 J | 62.2 J | 101 J | 47.8 J | 68.1 J | 168 J |
| Thallium | 0.82 U | 0.85 U | 0.82 U | 0.79 U | 0.87 J | 0.86 U | 1.8 J |
| Vanadium | 12.1 | 19.9 | 15.5 | 19 | 14 | 14.7 | 12.4 J |
| Zinc | 63.6 | 134 | 180 | 72.5 | 87.1 | 73.6 | 68.8 |
| Cyanide, total | 0.57 U | 0.59 U | 0.57 U | 0.55 U | 0.59 U | 1.2 | 0.82 U |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | 0.6 JN | --- |
| Percent solids (%) | 88.1 | 84.6 | 87.4 | 90.9 | 84.6 | 83.6 | 61 |
| Total organic carbon (mg/Kg) | 2300 UJ | 247000 | 5920 J | 6250 B | 2120 JB | 2500 B | 41800 B |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.



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# Table 5-9b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Inorganic Data

| Sample ID | SB-9 | SB-9 | MW-12 | MW-12 | MW-12 | SB-12 | SB-12 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | (SB-11) | (SB-11) | (SB-11) | | |
| Sample Date | 11/21/02 | 11/21/02 | 12/09/02 | 12/10/02 | 12/10/02 | 12/04/02 | 12/04/02 |
| Sample Depth | 4 - 6 ft. | 18 - 19.5 ft. | 0 - 2 ft. | 12 - 14 ft. | 18 - 20 ft. | 4 - 6 ft. | 14 - 16 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 4360 | 11200 | 9630 | 11700 | 11400 | 6850 | 12000 |
| Antimony | 0.48 UJ | 0.52 J | 0.5 UJ | 0.51 UJ | 0.48 UJ | 0.76 J | 0.48 UJ |
| Arsenic | 6.7 | 7.4 | 18.5 | 2.4 J | 3.2 | 13.9 | 2.4 |
| Barium | 88.5 | 31.4 J | 78.1 | 28.7 J | 20.8 J | 37.2 J | 27.6 J |
| Beryllium | 0.28 J | 0.58 J | 0.41 J | 0.45 J | 0.38 J | 0.36 J | 0.48 J |
| Cadmium | 0.36 J | 0.34 J | 1.8 | 0.26 J | 0.24 J | 0.3 J | 0.69 J |
| Calcium | 10100 | 2760 | 14500 | 1380 | 1180 | 57400 | 1260 |
| Chromium | 11.8 | 48.9 | 67.1 J | 16 J | 15.4 J | 176 | 20.7 |
| Chromium (Hexavalent) | 2.1 J | 10 J | 2.3 J | 4.9 UJ | 4.7 UJ | 14 | 5.1 U |
| Cobalt | 4.3 J | 9 J | 8.1 J | 8.6 J | 9.2 J | 5.6 J | 10 J |
| Copper | 45.2 | 27.1 | 147 | 18.4 | 16.3 | 68.3 | 29.1 |
| Iron | 12300 | 25500 | 26100 | 23700 | 25500 | 21200 | 28000 |
| Lead | 423 | 20.5 | 168 | 12.8 | 14.3 | 113 | 19.5 |
| Magnesium | 5630 | 5690 | 6210 | 6130 | 6350 | 35000 | 6060 |
| Manganese | 1340 | 241 | 733 | 181 | 189 | 670 | 228 |
| Mercury | 2.4 J | 0.09 J | 1.5 | 0.1 J | 0.01 J | 1 | 0.01 J |
| Nickel | 10.7 | 21.3 | 43.8 | 22.4 | 23 | 21.4 | 27.6 |
| Potassium | 336 J | 841 J | 653 J | 672 J | 642 J | 634 J | 703 J |
| Selenium | 1.1 J | 0.42 UJ | 0.43 UJ | 0.44 UJ | 0.41 UJ | 0.79 J | 0.41 U |
| Silver | 0.27 U | 0.28 U | 0.29 U | 0.29 U | 0.28 U | 0.29 U | 0.28 U |
| Sodium | 43.7 J | 46.7 J | 59.2 J | 118 J | 71.7 J | 93.7 J | 53.9 J |
| Thallium | 0.93 J | 0.84 U | 0.86 U | 0.87 U | 0.83 U | 0.88 U | 0.85 J |
| Vanadium | 9.7 J | 13.8 | 19.9 | 13.8 | 13.7 | 13.2 J | 16.5 J |
| Zinc | 36.1 | 62 | 145 | 63.8 | 61.3 | 114 | 83.6 |
| Cyanide, total | 0.64 | 1.2 | 0.6 U | 0.61 U | 0.57 U | 0.75 | 0.57 U |
| Cyanide, amenable to chlorination | 0.64 JN | 1.2 JN | --- | --- | --- | 0.75 U | --- |
| Percent solids (%) | 87.5 | 85.8 | 83.5 | 82.6 | 87.1 | 82.2 | 87.1 |
| Total organic carbon (mg/Kg) | 86000 J | 5620 J | 26000 | 4830 J | 552 J | 32800 B | 581 JB |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.



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# Table 5-9b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Inorganic Data

| Sample ID | SB-12 DUP | MW-11 | MW-11 | MW-11 | MW-13 | MW-13 | SB-16 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | (SB-13) | (SB-13) | (SB-13) | (SB-15) | (SB-15) | |
| Sample Date | 12/04/02 | 12/02/02 | 12/02/02 | 12/02/02 | 12/05/02 | 12/05/02 | 11/19/02 |
| Sample Depth | 14 - 16 ft. | 4 - 6 ft. | 16 - 18 ft. | 20 - 22 ft. | 18 - 20 ft. | 26 - 28 ft. | 10 - 12 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 12000 | 8920 | 6420 | 9480 | 10700 | 12400 | 11000 |
| Antimony | 0.51 J | 2.8 J | 377 J | 15.9 J | 0.53 UJ | 0.49 UJ | 14.7 J |
| Arsenic | 2.2 J | 29 | 54.6 | 40.5 | 6.2 | 7.8 | 26.8 |
| Barium | 30.4 J | 80.8 J | 71.7 J | 55.9 J | 42.3 J | 49.6 | 31.7 J |
| Beryllium | 0.41 J | 0.66 J | 0.33 J | 0.39 J | 0.48 J | 0.53 J | 0.63 J |
| Cadmium | 1.4 | 2.3 | 1.8 | 0.41 J | 0.41 J | 0.5 J | 0.47 J |
| Calcium | 1280 | 10700 | 12800 | 3840 | 6350 | 3200 | 1520 |
| Chromium | 22.6 | 33.5 | 142 | 46.5 | 16.7 J | 17.9 J | 150 |
| Chromium (Hexavalent) | 5 U | 5.2 U | 5.5 U | 5.9 U | 5.5 UJ | 5.1 UJ | 6.9 UJ |
| Cobalt | 9.1 J | 10.2 J | 6.4 J | 7.3 J | 7.4 J | 11.3 J | 11 J |
| Copper | 36.5 | 107 | 145 | 79 | 23 | 30.6 | 33.3 |
| Iron | 28100 | 28500 | 20200 | 28300 | 24700 | 30600 | 24100 |
| Lead | 24.2 | 526 | 365 | 196 | 39.2 | 18.1 | 58.1 |
| Magnesium | 6680 | 4680 | 5670 | 5160 | 5790 | 6620 | 5050 |
| Manganese | 217 | 400 | 231 | 796 | 322 | 947 | 150 |
| Mercury | 0.04 J | 1.1 | 40.9 | 15.9 | 0.19 | 0.06 J | 0.11 J |
| Nickel | 30.4 | 29.6 | 15.5 | 19.7 | 19.7 | 25.8 | 23.9 |
| Potassium | 696 J | 733 J | 709 J | 700 J | 698 J | 731 J | 689 J |
| Selenium | 0.43 U | 1.5 | 1.9 | 1.3 J | 0.46 UJ | 0.46 J | 0.66 J |
| Silver | 0.29 U | 0.3 U | 0.38 U | 0.37 U | 0.3 U | 0.28 U | 0.32 U |
| Sodium | 52.2 J | 73.5 J | 185 J | 124 J | 107 J | 83.9 J | 46.8 J |
| Thallium | 1.2 J | 0.91 U | 1.1 U | 1.1 U | 0.91 U | 0.84 U | 1.6 J |
| Vanadium | 15.7 J | 28.8 J | 11.4 J | 13.3 J | 17.5 | 15.8 | 14.2 |
| Zinc | 119 | 299 | 671 | 163 | 82.9 | 78.6 | 77.2 |
| Cyanide, total | 0.6 U | 0.63 U | 9.3 | 0.76 U | 0.63 U | 0.59 U | 0.94 |
| Cyanide, amenable to chlorination | --- | --- | 9.3 U | --- | --- | --- | 0.94 JN |
| Percent solids (%) | 82.8 | 79.4 | 64 | 65.7 | 79.1 | 85.3 | 74.9 |
| Total organic carbon (mg/Kg) | 1510 JB | 43000 B | 53700 B | 38100 B | 12500 B | 9570 B | 123000 B |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.



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# Table 5-9b
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site Subsurface Soil Samples (2002)
## Inorganic Data

| | |
|---|---|
| Sample ID | SB-16 |
| Location Cross Reference | |
| Sample Date | 11/19/02 |
| Sample Depth | 20 - 22 ft. |
| Units | mg/Kg |
| **Compound** | |
| Aluminum | 13900 |
| Antimony | 0.47 UJ |
| Arsenic | 2.3 |
| Barium | 38.9 J |
| Beryllium | 0.54 J |
| Cadmium | 0.33 J |
| Calcium | 1150 |
| Chromium | 20.1 |
| Chromium (Hexavalent) | 4.5 UJ |
| Cobalt | 11.7 |
| Copper | 20.4 |
| Iron | 35100 |
| Lead | 16 |
| Magnesium | 6470 |
| Manganese | 233 |
| Mercury | 0.02 J |
| Nickel | 27.5 |
| Potassium | 912 J |
| Selenium | 0.41 UJ |
| Silver | 0.27 U |
| Sodium | 66.5 J |
| Thallium | 0.86 J |
| Vanadium | 16 |
| Zinc | 72.6 |
| Cyanide, total | 0.56 U |
| Cyanide, amenable to chlorination | --- |
| Percent solids (%) | 88.8 |
| Total organic carbon (mg/Kg) | 1520 JB |

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.



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# Table 5-9c
## Three Star Anodizing Site
## Wappingers Falls, New York
## Deep Soil Boring Samples (2002)
## Inorganic Data

| Sample ID | BMW-1 | BMW-1 | BMW-1 | BMW-2 | BMW-2 | BMW-2 | BMW-3 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | (SB-14) | (SB-14) | (SB-14) | |
| Sample Date | 11/21/02 | 11/21/02 | 11/21/02 | 12/03/02 | 12/03/02 | 12/03/02 | 11/19/02 |
| Sample Depth | 20 - 22 ft. | 28 - 30 ft. | 38 - 40 ft. | 10 - 12 ft. | 22 - 24 ft. | 58 - 60 ft. | 12 - 13 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 11400 | 11900 | 10400 | 6680 | 10200 | 8790 | 11800 |
| Antimony | 0.52 UJ | 0.5 UJ | 0.48 UJ | 18 J | 1.5 J | 0.49 UJ | 0.71 J |
| Arsenic | 2.5 | 5.5 | 5.3 | 42.9 | 5.2 | 3.6 | 14.3 |
| Barium | 23 J | 35.2 J | 35 J | 60.5 J | 27.9 J | 17.9 J | 26.5 J |
| Beryllium | 0.41 J | 0.59 J | 0.46 J | 0.53 J | 0.43 J | 0.34 J | 0.69 J |
| Cadmium | 0.26 J | 0.33 J | 0.23 J | 1 J | 0.25 J | 0.19 J | 0.56 J |
| Calcium | 1050 J | 963 J | 17400 | 18100 | 18600 | 28300 | 3580 |
| Chromium | 20.6 | 22.5 | 14.4 | 54.5 | 15.8 | 12.4 | 20.9 |
| Chromium (Hexavalent) | 4.5 UJ | 4.3 UJ | 4.4 UJ | 6.3 U | 4.7 U | 4.6 U | 4.3 UJ |
| Cobalt | 9.3 J | 10.4 J | 9.4 J | 7.5 J | 9.8 J | 8.4 J | 10.4 J |
| Copper | 12.8 | 42.9 | 24.6 | 225 | 28.2 | 25.5 | 58.4 |
| Iron | 25200 | 31400 | 27100 | 69800 | 27600 | 23700 | 32400 |
| Lead | 12.3 | 16.6 | 11.2 | 197 | 14.3 | 9.3 J | 26.8 |
| Magnesium | 6040 | 6270 | 7640 | 6690 | 8940 | 9830 | 5810 |
| Manganese | 201 | 396 | 656 | 602 | 611 | 604 | 353 |
| Mercury | 0.03 J | 0.18 J | 0.03 J | 8.2 | 0.49 | 0.03 J | 0.05 J |
| Nickel | 22 | 24.4 | 21.4 | 98 | 22.5 | 18.3 | 24.9 |
| Potassium | 829 J | 913 J | 865 J | 517 J | 967 J | 830 J | 562 J |
| Selenium | 0.45 UJ | 0.43 UJ | 0.42 UJ | 1.4 J | 0.42 U | 0.42 U | 0.4 J |
| Silver | 0.3 U | 0.29 U | 0.28 U | 0.37 U | 0.28 U | 0.28 U | 0.26 U |
| Sodium | 47.2 J | 44.3 J | 51.1 J | 134 J | 66.5 J | 49.7 J | 49.3 J |
| Thallium | 1.5 J | 0.88 J | 0.83 U | 1.1 U | 0.84 U | 0.85 U | 0.79 U |
| Vanadium | 12.6 | 16.2 | 13.6 | 16.4 J | 13.2 J | 11.4 J | 14.6 |
| Zinc | 63.5 | 75.5 | 66.2 | 223 | 76.9 | 66.7 | 106 |
| Cyanide, total | 0.62 U | 0.6 U | 0.58 U | 2.4 | 0.58 U | 0.59 U | 0.55 U |
| Cyanide, amenable to chlorination | --- | --- | --- | 2.4 U | --- | --- | --- |
| Percent solids (%) | 80.8 | 83.6 | 86.6 | 64.1 | 86.2 | 85 | 91 |
| Total organic carbon (mg/Kg) | 6560 J | 2120 J | 519 J | 51900 B | 2890 B | 5830 B | 477 JB |

NOTES: U - not detected, J - estimated value, B - blank contamination

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Table 5-9c
Three Star Anodizing Site
Wappingers Falls, New York
Deep Soil Boring Samples (2002)
Inorganic Data

| Sample ID | BMW-3 |
|---|---|
| Location Cross Reference | |
| Sample Date | 11/19/02 |
| Sample Depth | 18 - 20 ft. |
| Units | mg/Kg |
| Compound | |
| Aluminum | 12700 |
| Antimony | 0.69 J |
| Arsenic | 14.8 |
| Barium | 29.6 J |
| Beryllium | 0.68 J |
| Cadmium | 0.43 J |
| Calcium | 5800 |
| Chromium | 31.3 |
| Chromium (Hexavalent) | 4.5 UJ |
| Cobalt | 11 J |
| Copper | 55.6 |
| Iron | 34300 |
| Lead | 30.7 |
| Magnesium | 6740 |
| Manganese | 392 |
| Mercury | 0.07 J |
| Nickel | 26.6 |
| Potassium | 825 J |
| Selenium | 0.42 UJ |
| Silver | 0.28 U |
| Sodium | 65 J |
| Thallium | 0.84 U |
| Vanadium | 18.4 |
| Zinc | 93.6 |
| Cyanide, total | 0.58 U |
| Cyanide, amenable to chlorination | --- |
| Percent solids (%) | 85.5 |
| Total organic carbon (mg/Kg) | 2220 U |

NOTES: U - not detected, J - estimated value, B - blank contamination



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# Table 5-10
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site: Shallow Ground Water Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br>ug/L | MW-9 (Axton-Cross) 12/08/02<br>ug/L | MW-6 (Building 21/22) 05/16/01<br>ug/L | MW-6 (Building 21/22) 12/08/02<br>ug/L | MW-10 (Building 21/22) 12/08/02<br>ug/L | MW-13 (Former Raceway) 12/08/02<br>ug/L | MW-1 (Building 15/16/17) 05/16/01<br>ug/L |
|---|---|---|---|---|---|---|---|
| Vinyl chloride | 2 | [9 J] | [3 J] | --- | 0.9 J | --- | [14 ] |
| Methylene chloride | 5* | --- | 1 J | --- | --- | --- | 2 J |
| Carbon disulfide | NC | --- | --- | --- | --- | 0.7 J | --- |
| 1,1-Dichloroethene | 5* | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | 5* | --- | 1 J | 2 J | 5 J | [7 J] | 2 J |
| cis-1,2-Dichloroethene | NC | 680 | 5 J | 9 J | 2 J | 3 J | 34 |
| trans-1,2-Dichloroethene | NC | --- | --- | --- | --- | --- | --- |
| Chloroform | 7 | --- | 3 J | --- | --- | --- | --- |
| 1,2-Dichloroethane | 0.6 | --- | --- | --- | --- | --- | --- |
| 2-Butanone (MEK) | NC | --- | --- | --- | --- | 2 J | --- |
| 1,1,1-Trichloroethane | 5* | [730 ] | 1 J | 3 J | 1 J | [6 J] | [6 J] |
| 1,2-Dichloropropane | 1 | --- | --- | --- | --- | --- | --- |
| Trichloroethene | 5* | [2900 D] | 4 J | [11 ] | 2 J | 2 J | [76 ] |
| Tetrachloroethene | 5* | [7900 D] | --- | 2 J | --- | --- | [23 ] |
| Toluene | 5* | [270 ] | --- | --- | 2 J | 1 J | --- |
| Chlorobenzene | 5* | [100 ] | --- | --- | --- | --- | --- |
| Ethylbenzene | 5* | [1500 ] | --- | --- | 3 J | --- | --- |
| Xylene (total) | 5* | [6600 D] | --- | --- | [40 ] | --- | --- |
| Total BTEX | NC | 8400 | --- | --- | 45 | 1.0 | --- |
| Total VOCs | NC | 21000 | 18 | 27 | 56 | 22 | 160 |
| Total Chlorinated VOCs | NC | 12000 | 15 | 27 | 11 | 18 | 160 |

NOTES: J - estimated value, NC = no criterion, — - analyte not detected. [ ] - exceeds Ground Water screening criterion. D - dilution result.
Samples analyzed by methods NY ASP 95-1. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.
* indicates a compound that was identified as a principle organic contaminant class, but does not have a specific maximum contaminant level.

# Table 5-10
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site: Shallow Ground Water Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br>ug/L | MW-1 (Building 15/16/17) 12/08/02<br>ug/L | MW-7 (Building 15/16/17) 05/16/01<br>ug/L | MW-7 (Building 15/16/17) 12/11/02<br>ug/L | MW-12 (Building 15/16/17) 12/11/02<br>ug/L | MW-8 (Building 12) 05/16/01<br>ug/L | MW-8 (Building 12) 12/08/02<br>ug/L |
|---|---|---|---|---|---|---|---|
| Vinyl chloride | 2 | [29 ] | 2 J | 2 J | 1 J | --- | --- |
| Methylene chloride | 5* | --- | 1 J | --- | --- | 1 J | --- |
| Carbon disulfide | NC | 1 J | --- | --- | 0.7 J | --- | --- |
| 1,1-Dichloroethene | 5* | --- | --- | 1 J | --- | --- | --- |
| 1,1-Dichloroethane | 5* | 4 J | [21 ] | [18 ] | [33 ] | 2 J | 3 J |
| cis-1,2-Dichloroethene | NC | 45 | 2 J | 5 J | 1 J | --- | 0.5 J |
| trans-1,2-Dichloroethene | NC | 0.5 J | --- | --- | --- | --- | --- |
| Chloroform | 7 | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | 0.6 | --- | --- | --- | 0.6 J | --- | --- |
| 2-Butanone (MEK) | NC | --- | --- | --- | 2 J | --- | --- |
| 1,1,1-Trichloroethane | 5* | 4 J | [9 J] | [23 ] | [62 ] | 2 J | 2 J |
| 1,2-Dichloropropane | 1 | --- | --- | --- | [3 J] | --- | --- |
| Trichloroethene | 5* | [25 ] | 1 J | [17 ] | 0.6 J | --- | 0.8 J |
| Tetrachloroethene | 5* | [8 J] | --- | --- | --- | --- | --- |
| Toluene | 5* | --- | --- | --- | 0.6 J | --- | --- |
| Chlorobenzene | 5* | 2 J | --- | --- | --- | --- | --- |
| Ethylbenzene | 5* | --- | --- | --- | --- | --- | --- |
| Xylene (total) | 5* | --- | --- | --- | --- | --- | --- |
| Total BTEX | NC | --- | --- | --- | 0.6 | --- | --- |
| Total VOCs | NC | 120 | 36 | 66 | 100 | 5.0 | 6.3 |
| Total Chlorinated VOCs | NC | 120 | 36 | 66 | 100 | 5.0 | 6.3 |

NOTES: J - estimated value, NC = no criterion, --- - analyte not detected. [ ] - exceeds Ground Water screening criterion. D - dilution result.
Samples analyzed by methods NY ASP 95-1. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.
* indicates a compound that was identified as a principle organic contaminant class, but does not have a specific maximum contaminant level.



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# Table 5-11
## Three Star Anodizing Site
## Wappingers Falls, New York
## Deep Ground Water Samples
## Detected Volatile Organic Compound Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br>ug/L | BMW-1<br>12/8/2002<br>ug/L | BMW-2<br>12/8/2002<br>ug/L | BMW-3<br>12/8/2002<br>ug/L |
|---|---|---|---|---|
| Vinyl Chloride | 2 | 2 J | --- | --- |
| 1,1-Dichloroethane | 5* | 0.6 J | --- | 0.6 J |
| cis-1,2-Dichloroethene | NC | 26 | --- | --- |
| Chloroform | 7 | --- | 0.7 J | --- |
| 1,1,1-Trichloroethane | 5* | --- | --- | 1 J |
| Trichloroethene | 5* | 4 J | | --- |
| Benzene | 1 | [3 J] | --- | [4 J] |
| Tetrachloroethene | 5* | 3 J | --- | --- |
| Toluene | 5* | 0.9 J | 2 J | --- |
| Chlorobenzene | 5* | --- | --- | [34] |
| Ethylbenzene | 5* | 1 J | --- | --- |
| Xylene (total) | 5* | 3 J | 2 J | --- |
| | | --- | --- | --- |
| Total BTEX | NC | 7.9 J | 4.0 J | 4.0 J |
| Total VOCs | NC | 44 J | 4.7 J | 40 J |
| Total Chlorinated VOCs | NC | 36 J | --- | 36 |

NOTES: J - estimated value, NC - no criterion, --- - no data; exceeds ground water screening criterion.
Samples analyzed by method NY ASP 95-1. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicateing guidance values.
* indicates a compound that was identified as a principle organic contaminant class, but does not have a specific maximum contaminant level.
Total BTEX = sum of the detected concentrations of Benzene, Toluene, Ethylbenzene, and Xylene. Total VOCs = sum of detected concentrations of volatile organic compounds.

# Table 5-12
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site: Shallow Ground Water Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br>ug/L | MW-9 (Axton-Cross) 12/08/02<br>ug/L | MW-6 (Building 21/22) 12/08/02<br>ug/L | MW-10 (Building 21/22) 12/08/02<br>ug/L | MW-11 (Former Raceway) 12/08/02<br>ug/L | MW-13 (Former Raceway) 12/08/02<br>ug/L | MW-1 (Building 15/16/17) 05/16/01<br>ug/L |
|---|---|---|---|---|---|---|---|
| Phenol | 1 total | --- | --- | --- | --- | [11 J] | --- |
| 1,3-Dichlorobenzene | 3 | 2 J | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | 3 | [13 ] | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | 3 | [170 D] | --- | --- | --- | --- | [4 J] |
| 2,4-Dimethylphenol | 1 total | [7 J] | --- | --- | --- | --- | 1 J |
| Naphthalene | 10 G | 3 J | --- | --- | [160 D] | --- | --- |
| 2-Methylnaphthalene | NC | --- | --- | --- | 1 J | --- | --- |
| 2-Nitroaniline | 5* | --- | --- | --- | 2 J | --- | --- |
| Acenaphthene | NC | --- | --- | 2 J | --- | --- | --- |
| Fluorene | 50G | --- | --- | 1 J | --- | --- | --- |
| 4-Nitroaniline | 5* | --- | --- | --- | 2 J | --- | --- |
| Phenanthrene | 50G | --- | 2 J | --- | 1 J | --- | --- |
| Anthracene | 50 | --- | --- | --- | 1 J | --- | --- |
| Fluoranthene | 50G | --- | 3 J | --- | --- | --- | --- |
| Pyrene | 50G | --- | 2 J | --- | --- | --- | --- |
| Benzo(a)anthracene | 0.002G | --- | [1 J] | --- | --- | --- | --- |
| Chrysene | 0.002G | --- | [1 J] | --- | --- | --- | --- |
| Bis(2-ethylhexyl)phthalate (BEHP) | 5 | --- | --- | 2 J | --- | --- | --- |
| Benzo(b)fluoranthene | 0.002G | --- | [2 J] | --- | --- | --- | --- |
| Benzo[a]pyrene | NC | --- | 1 J | --- | --- | --- | --- |
| Total PAHs | NC | 3.0 | 12 | 3.0 | 163 | --- | --- |
| Total SVOCs | NC | 195 | 12 | 5.0 | 167 | 11 | 5.0 |

NOTES: J - estimated value, NC = no criterion, — - analyte not detected. [ ] - exceeds Ground Water screening criterion. D - dilution result.
Samples analyzed by method NY ASP 95-2. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.
* indicates a compound that was identified as a principle organic contaminant class, but does not have a specific maximum contaminant level.



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# Table 5-12
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site: Shallow Ground Water Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br>ug/L | MW-1 (Building 15/16/17) 12/08/02<br>ug/L | MW-12 (Building 15/16/17) 12/11/02<br>ug/L |
|---|---|---|---|
| Phenol | 1 total | [2 J] | --- |
| 1,3-Dichlorobenzene | 3 | --- | --- |
| 1,4-Dichlorobenzene | 3 | --- | --- |
| 1,2-Dichlorobenzene | 3 | 2 J | --- |
| 2,4-Dimethylphenol | 1 total | --- | --- |
| Naphthalene | 10 G | --- | --- |
| 2-Methylnaphthalene | NC | --- | --- |
| 2-Nitroaniline | 5* | --- | --- |
| Acenaphthene | NC | --- | --- |
| Fluorene | 50G | --- | --- |
| 4-Nitroaniline | 5* | --- | --- |
| Phenanthrene | 50G | --- | --- |
| Anthracene | 50 | --- | --- |
| Fluoranthene | 50G | --- | --- |
| Pyrene | 50G | --- | --- |
| Benzo(a)anthracene | 0.002G | --- | --- |
| Chrysene | 0.002G | --- | --- |
| Bis(2-ethylhexyl)phthalate (BEHP) | 5 | 2 J | 2 J |
| Benzo(b)fluoranthene | 0.002G | --- | --- |
| Benzo[a]pyrene | NC | --- | --- |
| Total PAHs | NC | --- | --- |
| Total SVOCs | NC | 6.0 | 2.0 |

NOTES: J - estimated value, NC = no criterion, --- - analyte not detected. [ ] - exceeds Ground Water screening criterion. D - dilution result.
Samples analyzed by method NY ASP 95-2. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.
* indicates a compound that was identified as a principle organic contaminant class, but does not have a specific maximum contaminant level.



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# Table 5-13
## Three Star Anodizing Site
## Wappingers Falls, New York
## Deep Ground Water Samples
## Detected Semivolatile Organic Compound Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units | Ground Water Screening Criteria<br><br>ug/L | BMW-1<br><br>12/08/02<br><br>ug/L | BMW-2<br><br>12/11/02<br><br>ug/L | BMW-3<br><br>12/08/02<br><br>ug/L |
|---|---|---|---|---|
| Compound | | | | |
| Naphthalene | 10 G | [77] | 9 J | --- |
| 2-Methylnaphthalene | NC | 14 | --- | --- |
| Acenaphthylene | NC | 4 J | --- | --- |
| Acenaphthene | NC | 9 J | --- | --- |
| Dibenzofuran | NC | 5 J | --- | --- |
| Fluorene | 50G | 6 J | --- | --- |
| Phenanthrene | 50G | 8 J | --- | --- |
| Anthracene | 50 | 1 J | --- | --- |
| Carbazole | NC | 3 J | --- | --- |
| Fluoranthene | 50G | 1 J | --- | --- |
| Bis(2-ethylhexyl)phthalate (BEHP) | 5 | --- | --- | 2 J |
| Total PAHs | NC | 120 | 9.0 | --- |
| Total SVOCs | NC | 128 | 9.0 | 2.0 |

NOTES: J - estimated value, NC = no criterion, --- - analyte not detected, [ ] - exceeds Ground Water screening criterion.
Samples analyzed by method NY ASP 95-2. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.
* indicates a compound that was identified as a principle organic contaminant class, but does not have a specific maximum contaminant level.
Total PAHS = sum of the detected concentrations of PAH compounds. Total SVOCs = sum of the detected concentrations of semivolatile organic compounds.



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# Table 5-14
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site: Shallow Ground Water Samples
## Inorganic Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br>ug/L | MW-9 (Axton-Cross)<br>12/08/02<br>ug/L | MW-6 (Building 21/22)<br>05/16/01<br>ug/L | MW-10 (Building 21/22)<br>12/08/02<br>ug/L | MW-11 (Former Raceway)<br>12/08/02<br>ug/L | MW-13 (Former Raceway)<br>12/08/02<br>ug/L | MW-1 (Building 15/16/17)<br>05/16/01<br>ug/L |
|---|---|---|---|---|---|---|---|
| Aluminum | NC | 6800 | 61 J | 2300 | 100000 | 88000 | 390 |
| Antimony | 3.0 | [3.40 J] | --- | --- | [1400 ] | [6.30 J] | --- |
| Arsenic | 25 | 14 | 2.50 J | [59 ] | [1100 ] | [69 ] | 4.20 J |
| Barium | 1000 | 57 J | 11 J | 39 J | [1400 ] | 610 | 66 J |
| Beryllium | 3.0 | 0.33 J | --- | 0.10 J | [6.20 ] | [5.10 ] | --- |
| Cadmium | 5.0 | 0.57 J | --- | 0.70 J | [22 ] | 4.60 J | --- |
| Calcium | NC | 43000 | 38000 | 60000 | 270000 | 150000 | 85000 |
| Chromium | 50 | [68 ] | 5.50 J | [150 ] | [1700 ] | [150 ] | 1.20 J |
| Cobalt | NC | 4.30 J | --- | --- | 100 | 84 | --- |
| Copper | 200 | 31 | --- | 35 | [3400 ] | [370 ] | 1.80 J |
| Iron | 300 | [14000 ] | 200 | [9300 ] | [370000 ] | [190000 ] | [4000 ] |
| Lead | 25 | 25 | 0.66 J | [290 ] | [7400 ] | [230 ] | 4.70 |
| Magnesium | 35000 | 12000 | 8600 | 16000 | [81000 ] | [38000 ] | 14000 |
| Manganese | 300 | [510 ] | 93 J | [970 ] | [5400 ] | [6300 ] | [3600 J] |
| Mercury | 1.0 | 0.58 | --- | 0.21 | [270 D] | [1.20 ] | --- |
| Nickel | 100 | 10 J | 15 J | 7.60 J | [230 ] | [150 ] | 2.00 J |
| Potassium | NC | 2500 J | 7000 | 3500 J | 17000 | 9400 | 3700 J |
| Selenium | 10 | --- | --- | --- | [30 J] | 3.30 J | 2.40 J |
| Silver | 50 | --- | --- | --- | 1.20 J | --- | --- |
| Sodium | 20000 | [29000 ] | [61000 ] | [27000 ] | [58000 ] | [36000 ] | [25000 ] |
| Thallium | 0.5 | --- | --- | --- | [4.40 J] | [5.80 J] | --- |
| Vanadium | NC | 8.90 J | 1.80 J | 13 J | 260 | 130 | 0.62 J |
| Zinc | 2000 | 73 J | 6.40 J | 33 J | [6400 DJ] | 610 J | 5.40 J |
| Cyanide, total | 200 | 13 | --- | --- | [1300 ] | 22 | --- |
| Total suspended solids (mg/L) | NC | --- | --- | --- | --- | --- | 54 |

NOTES: J - estimated value, NC = no criterion, --- - analyte not detected. [ ] - exceeds ground water screening criterion. D - dilution result.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.



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# Table 5-14
## Three Star Anodizing Site
## Wappingers Falls, New York
## Main Site: Shallow Ground Water Samples
## Inorganic Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br>ug/L | MW-7 (Building 15/16/17) 05/16/01<br>ug/L | MW-12 (Building 15/16/17) 12/11/02<br>ug/L | MW-8 (Building 12) 05/16/01<br>ug/L |
|---|---|---|---|---|
| Aluminum | NC | --- | 22000 | 17 J |
| Antimony | 3.0 | --- | [3.60 J] | [4.60 J] |
| Arsenic | 25 | 14 | [31 ] | 2.30 J |
| Barium | 1000 | 22 J | 150 J | 19 J |
| Beryllium | 3.0 | --- | 0.98 J | 0.33 J |
| Cadmium | 5.0 | --- | 1.00 J | --- |
| Calcium | NC | 59000 | 96000 | 56000 |
| Chromium | 50 | --- | [72 ] | 5.10 J |
| Cobalt | NC | --- | 16 J | --- |
| Copper | 200 | --- | 74 | 2.00 J |
| Iron | 300 | [4500 ] | [42000 ] | 17 J |
| Lead | 25 | 1.60 J | [76 ] | 1.80 J |
| Magnesium | 35000 | 9300 | 25000 | 14000 |
| Manganese | 300 | [1100 J] | [2200 ] | 3.30 J |
| Mercury | 1.0 | --- | 0.05 J | --- |
| Nickel | 100 | 82 | 47 | 1.20 J |
| Potassium | NC | 2300 J | 7100 | 1600 J |
| Selenium | 10 | --- | --- | 2.30 J |
| Silver | 50 | --- | --- | --- |
| Sodium | 20000 | 9700 | [32000 ] | [26000 ] |
| Thallium | 0.5 | --- | --- | --- |
| Vanadium | NC | --- | 29 J | 0.95 J |
| Zinc | 2000 | 2.10 J | 160 | 1.90 J |
| Cyanide, total | 200 | 39 | --- | --- |
| Total suspended solids (mg/L) | NC | 5 | --- | --- |

NOTES: J - estimated value, NC = no criterion, --- - analyte not detected. [ ] - exceeds ground water screening criterion. D - dilution result.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.



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# Table 5-15
## Three Star Anodizing Site
## Wappingers Falls, New York
## Deep Ground Water Samples
## Inorganic Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br><br>ug/L | BMW-1<br><br>12/08/02<br><br>ug/L | BMW-2<br><br>12/11/02<br><br>ug/L | BMW-3<br><br>12/08/02<br><br>ug/L |
|---|---|---|---|---|
| Aluminum | NC | 120000 | 54000 | 260000 |
| Antimony | 3.0 | 2.10 U | [74 ] | 2.60 J |
| Arsenic | 25 | [100 ] | [47 ] | [540 ] |
| Barium | 1000 | 970 | 320 | [1200 ] |
| Beryllium | 3.0 | [8.20 ] | 2.80 J | [15 ] |
| Cadmium | 5.0 | 4.70 J | 2.80 J | [14 ] |
| Calcium | NC | 170000 | 190000 | 280000 |
| Chromium | 50 | [210 ] | [200 ] | [580 ] |
| Cobalt | NC | 140 | 46 J | 290 |
| Copper | 200 | [490 ] | [250 ] | [1200 ] |
| Iron | 300 | [300000 ] | [120000 ] | [680000 ] |
| Lead | 25 | [210 ] | [270 ] | [600 ] |
| Magnesium | 35000 | [87000 ] | [55000 ] | [170000 ] |
| Manganese | 300 | [8200 ] | [3600 ] | [23000 ] |
| Mercury | 1.0 | [1.50 ] | [28 D] | 1.00 |
| Nickel | 100 | [240 ] | [290 ] | [520 ] |
| Potassium | NC | 24000 | 12000 | 30000 |
| Selenium | 10 | 1.80 UJ | 1.80 UJ | [27 J] |
| Silver | 50 | 1.20 U | 1.20 U | 1.20 U |
| Sodium | 20000 | [40000 ] | [60000 ] | [290000 ] |
| Thallium | 0.5 | [4.10 J] | 3.60 U | [12 J] |
| Vanadium | NC | 160 | 75 | 380 |
| Zinc | 2000 | 870 J | 530 | 1900 J |
| Cyanide, total | 200 | 10.00 U | 37 | 12 |

NOTES: J - estimated value, NC = no criterion, — - analyte not detected, [ ] - exceeds ground water screening criterion. D - dilution result.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.



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# Table 5-16
## Three Star Anodizing Site
## Wappingers Falls, New York
## Lagoon Surface Water Samplse
## Detected Concentrations Compared to Screening Values

| Sample ID | Surface Water Screening Criteria | LG-SW |
|---|---|---|
| Location Cross Reference | | |
| Sample Date | | 11/18/02 |
| Sample Depth | | |
| Units | ug/L | ug/L |
| **Compound** | | |
| **Volatile Organic Compounds** | | |
| Trichloroethene | 5 W | 0.60 J |
| Total VOCs | NC | 0.6 |
| **Semi-Volatile Organic Compounds** | | |
| **Inorganics** | | |
| Aluminum | 100 AC | [190 J] |
| Barium | 1000 W | 17 J |
| Calcium | NC | 39000 |
| Chromium | 98 AC | 3.6 J |
| Copper | 12 AC | 2.8 J |
| Iron | 300 AC | [320 J] |
| Lead | 5 AC | 1.3 J |
| Magnesium | 35000 W | 10000 |
| Manganese | 300 E | 59 |
| Nickel | 69 AC | 2.4 J |
| Potassium | NC | 2200 J |
| Selenium | 4.6 AC | 2.6 J |
| Silver | 0.1 ionic AC | [1.6 J] |
| Sodium | NC | 27000 |
| Vanadium | 14 AC | 1.8 J |
| Zinc | 110 AC | 19 J |
| Hardness (mg/L) | NC | 140 |
| Total alkalinity (mg/l) | NC | 110 |
| Total organic carbon (mg/Kg) | NC | 4.4 U |
| Total suspended solids (mg/L) | NC | 5.0 UJ |

NOTES: U - analyte not detected, UJ - estimated value considered non-detect, J - estimated value, NC - no criteria, [ ] - concentration above screening criterion.
Samples analyzed by methods NY ASP 95-1 (VOCs) and 200.7 CLP-M (Metals). Surface water screening criteria are guidance values obtained from NYS Ambient Water Quality Standards and Guidance Values (TOGS 1.1.1)
Criteria for protection of best uses as cited: W = Human water source; AC = Propagation of fish; E = Aesthetics.



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Table 5-17
Three Star Anodizing Site
Wappingers Falls, New York
Lagoon Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Sediment Screening Values

| Sample ID | NYS Sediment Screening Value | LG-2 | | LG03 UP | | LG03 MID | | LG03 BOT | | LG-4U | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Date | | 11/19/2002 0 - 2.5 ft. | | 5/8/2001 | | 5/8/2001 | | 5/8/2001 | | 11/19/2002 0 - 3 ft. | |
| | | C | SC | C | SC | C | SC | C | SC | C | SC |
| Compound | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC |
| 2-Butanone (MEK) | NS | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Acetone | 0.03 (W) | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Benzene | 28 | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Carbon Disulfide | NS | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Chlorobenzene | 3.5 | 28 | **542** | 69 | **575** | | | 12 | **125** | 98 | **1082** |
| Ethylbenzene | 24 | --- | --- | --- | --- | | | 4 | **42** | --- | --- |
| Methylene Chloride | 0.09 (W) | --- | --- | --- | --- | | | --- | --- | 4 | **44** |
| Tetrachloroethene | 0.8 (H) | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Toluene | 49 | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Trichloroethene | 2.0 (H) | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Xylene (total) | 92 | --- | --- | --- | --- | | | 40 | **417** | 11 | **121** |
| cis-1,2-Dichloroethene | 0.6 (W) | 1 | **19** | 5 | **42** | | | --- | --- | --- | --- |
| Total BTEX | NS | 1 | --- | 5 | --- | | | 44 | --- | 11 | --- |
| Total Chlorinated VOCs | NS | 28 | --- | 69 | --- | | | 12 | --- | 102 | --- |
| Total VOCs | NS | 29 | --- | 74 | --- | | | 56 | --- | 110 | --- |
| Total Organic Carbon (TOC) | NA | 51700 | --- | 150000 | --- | 119000 | --- | 95900 | --- | 90600 | --- |
| %TOC | NA | 5.2 | --- | 15 | --- | 12 | --- | 9.6 | --- | 9.1 | --- |
| Percent Solids | NA | 27 | --- | 10 | --- | 22 | --- | 27 | --- | 20 | --- |

Notes:
NS = no screening value; NA = not applicable; --- = analyte not detected. Samples analyzed by method NY ASP 95-1.

NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1999). Screening values are for ecological protection, except as noted: H = human exposure by fish consumption; W = drinking water source.

Screening concentrations (SC) are the concentration (C) in mg/Kg normalized for organic carbon content. SC is calculated as the concentration (C)/ fraction of organic carbon (foc) in units of ug/gOC. SC were calculated for sediment samples with % TOC ranging from 0.2 to 12%. For samples with %TOC > than 12, a value of 12% was applied. For samples with %TOC < 0.2, SC were not calculated.

Table 5-17
Three Star Anodizing Site
Wappingers Falls, New York
Lagoon Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Sediment Screening Values

| Sample ID | NYS Sediment Screening Value | LG-4L | | LG-7M | | LG-7L | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Date | | 11/19/2002 | | 11/20/2002 | | 11/20/2002 | | | |
| | | 3 - 6 ft. | | | | | | | |
| | | C | SC | C | SC | C | SC | | |
| Compound | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC | | |
| 2-Butanone (MEK) | NS | --- | --- | --- | --- | 0.05 | 0.4 | | |
| Acetone | 0.03 (W) | --- | --- | --- | --- | 0.09 | **0.8** | | |
| Benzene | 28 | --- | --- | --- | --- | 0.006 | 0.05 | | |
| Carbon Disulfide | NS | --- | --- | --- | --- | 0.005 | 0.04 | | |
| Chlorobenzene | 3.5 | 110 | **917** | 130 | **1083** | 0.5 | **4.2** | | |
| Ethylbenzene | 24 | --- | --- | 3 | **25** | 0.003 | 0.03 | | |
| Methylene Chloride | 0.09 (W) | --- | --- | --- | --- | --- | --- | | |
| Tetrachloroethene | 0.8 (H) | --- | --- | --- | --- | 0.003 | 0.03 | | |
| Toluene | 49 | --- | --- | --- | --- | 0.01 | 0.08 | | |
| Trichloroethene | 2.0 (H) | --- | --- | --- | --- | 0.005 | 0.04 | | |
| Xylene (total) | 92 | 130 | **1083** | 140 | **1167** | 0.2 | 1.7 | | |
| cis-1,2-Dichloroethene | 0.6 (W) | --- | --- | --- | --- | 0.002 | 0.02 | | |
| | | | | | | | | | |
| Total BTEX | NS | 130 | --- | 143 | --- | 0.2 | --- | | |
| Total Chlorinated VOCs | NS | 110 | --- | 130 | --- | 0.5 | --- | | |
| Total VOCs | NS | 240 | --- | 273 | --- | 0.9 | --- | | |
| Total Organic Carbon (TOC) | NS | 191000 | --- | 200000 | --- | 187000 | --- | | |
| %TOC | NS | 19 | --- | 20 | --- | 19 | --- | | |
| Percent Solids | NS | 25 | --- | 23 | --- | 46 | --- | | |

Notes:
NS = no screening value; NA = not applicable; --- = analyte not detected. Samples analyzed by method NY ASP 95-1.

NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1999). Screening values are for ecological protection, except as noted: H = human exposure by fish consumption; W = drinking water source.

Screening concentrations (SC) are the concentration (C) in mg/Kg normalized for organic carbon content. SC is calculated as the concentration (C)/ fraction of organic carbon (foc) in units of ug/gOC. SC were calculated for sediment samples with % TOC ranging from 0.2 to 12%. For samples with %TOC > than 12, a value of 12% was applied. For samples with %TOC < 0.2, SC were not calculated.
Sample LG03 MID was extracted by TCLP. Analytical results are reported in Table 5-20.

Table 5-18
Three Star Anodizing Site
Wappingers Falls, New York
Lagoon Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Sediment Screening Values

| Smple ID | NYS Sediment Screening Value | Alternative Screening Value | LG-2 | | LG03 UP | | LG03 MID | | LG03 BOT | | LG-4U | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Date | | | 11/19/2002 0 - 2.5 ft. | | 5/8/2001 | | 5/8/2001 | | 5/8/2001 | | 11/19/2002 0 - 3 ft. | |
| | | | C | SC | C | SC | C | SC | C | SC | C | SC |
| Compound | ug/gOC | mg/Kg | mg/Kg | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC |
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | --- | --- | | | --- | --- | 2 | **22** |
| 1,3-Dichlorobenzene | 12 | --- | 2 | **39** | 10 | **83** | | | 5 | **52** | 12 | **132** |
| 1,4-Dichlorobenzene | 12 | --- | 3 | **58** | 9 | **75** | | | 20 | **209** | 51 | **563** |
| 2,4-Dimethylphenol | 0.5 (t) | --- | --- | --- | --- | --- | | | --- | --- | --- | --- |
| 2-Methylnaphthalene | 34 | --- | --- | --- | 12 | **100** | | | --- | --- | --- | --- |
| Anthracene | 107 | --- | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Benzo(a)anthracene | 12 | --- | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Benzo(a)pyrene | 1.3 (H) | 0.44 (1) | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Benzo(ghi)perlyene | NS | 3.8 (1) | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Chrysene | 1.3 (H) | --- | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Fluoranthene | 1020 | --- | --- | --- | --- | --- | | | --- | --- | 2 | 22 |
| Fluorene | 8 | --- | --- | --- | 10 | **83** | | | --- | --- | --- | --- |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Naphthalene | 30 | --- | --- | --- | 15 | **125** | | | 4 | **42** | 8 | **88** |
| Phenanthrene | 120 | --- | 3 | 58 | 51 | **425** | | | 3 | 31 | 6 | 66 |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Pyrene | 961 | --- | --- | --- | --- | --- | | | --- | --- | --- | --- |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 28 | **542** | 120 | **800** | | | 26 | **271** | 33 | **364** |
| Total SVOCs | | | 36 | --- | 227 | --- | | | 58 | --- | 116 | --- |
| Total PAHs | 4.0 (m/Kg, L) | 85 (1) | 3 | --- | 88 | --- | | | 7 | --- | 18 | --- |
| Total Organic Carbon (TOC) | | NS | 51700 | --- | 150000 | --- | 119000 | --- | 95900 | --- | 90600 | --- |
| %TOC | | NS | 5.2 | --- | 15 | --- | 12 | --- | 9.6 | --- | 9.1 | --- |
| Percent Solids | | NS | 27 | --- | 10 | --- | 22 | --- | 27 | --- | 20 | --- |

Notes on Page 3.

Table 5-18
Three Star Anodizing Site
Wappingers Falls, New York
Lagoon Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Sediment Screening Values

| Sample ID | NYS Sediment Screening Value | Alternative Screening Value | LG-4L | | LG-7M | | LG-7L | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Date | | | 11/19/2002 3 - 6 ft. | | 11/20/2002 | | 11/20/2002 | | | |
| | | | C | SC | C | SC | C | SC | | |
| Compound | ug/gOC | mg/Kg | mg/Kg | ug/gOC | mg/Kg | ug/gOC | mg/Kg | ug/gOC | | |
| 1,2-Dichlorobenzene | 12 | --- | --- | --- | 2 | **17** | 0.8 | 7 | | |
| 1,3-Dichlorobenzene | 12 | --- | 6 | **50** | 4 | **33** | --- | --- | | |
| 1,4-Dichlorobenzene | 12 | --- | 24 | **200** | 13 | **108** | 3 | **25** | | |
| 2,4-Dimethylphenol | 0.5 (t) | --- | --- | --- | --- | --- | 1 | **8** | | |
| 2-Methylnaphthalene | 34 | --- | --- | --- | --- | --- | --- | --- | | |
| Anthracene | 107 | --- | --- | --- | --- | --- | 4 | 33 | | |
| Benzo(a)anthracene | 12 | --- | --- | --- | 2 | **17** | 5 | **42** | | |
| Benzo(a)pyrene | 1.3 (H) | 0.44 (1) | --- | --- | --- | --- | 4 | **33** | | |
| Benzo(b)fluoranthene | 1.3 (H) | 4.0 (1) | 1 | **8** | 2 | **17** | 6 | **50** | | |
| Benzo(ghi)perlyene | NS | 3.8 (1) | --- | --- | --- | --- | 2 | 17 | | |
| Benzo(k)fluoranthene | 1.3 (H) | 4.0 (1) | --- | --- | --- | --- | 2 | **17** | | |
| Chrysene | 1.3 (H) | --- | --- | --- | 2 | **17** | 5 | **42** | | |
| Dibenzofuran | NS | 5.1 (2) | --- | --- | --- | --- | 0.8 | 7 | | |
| Fluoranthene | 1020 | --- | 2 | 17 | 3 | 25 | 11 | 92 | | |
| Fluorene | 8 | --- | --- | --- | --- | --- | 1 | 8 | | |
| Indeno(1,2,3-cd)pyrene | 1.3 (H) | --- | --- | --- | --- | --- | 2 | **17** | | |
| Naphthalene | 30 | --- | 4 | **33** | 4 | **33** | 7 | **58** | | |
| Phenanthrene | 120 | --- | 3 | 25 | 3 | 25 | 5 | 42 | | |
| Phenol | 0.5 (t) | --- | --- | --- | --- | --- | 2 | **17** | | |
| Pyrene | 961 | --- | 2 | 17 | 3 | 25 | 11 | 92 | | |
| Bis(2-ethylhexyl)phthalate (BEHP) | 200 | --- | 19 | 158 | 10 | 83 | --- | --- | | |
| | | | | | | | | | | |
| Total SVOCs | | | 62 | --- | 49 | --- | 71 | --- | | |
| Total PAHs | 4.0 (m/Kg, L) | 85 (1) | 12 | --- | 19 | --- | 65 | --- | | |
| | | | | | | | | | | |
| Total Organic Carbon (TOC) | | | 191000 | --- | 200000 | --- | 187000 | --- | | |
| %TOC | | | 19 | --- | 20 | --- | 19 | --- | | |
| Percent Solids | | | 25 | --- | 23 | --- | 46 | --- | | |

Notes on Page 3.

Table 5-18
Three Star Anodizing Site
Wappingers Falls, New York
Lagoon Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Sediment Screening Values

Notes:
NS = no screening value; NA = not applicable; --- = analyte not detected. Samples analyzed by method NY ASP 95-1.
NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1999).
Screening concentrations (SC) are the concentration (C) in mg/Kg normalized for organic carbon content. SC is calculated as the concentration (C)/ fraction of organic carbon (foc) in units of ug/gOC. SC were calculated for sediment samples with % TOC ranging from 0.2 to 12%. For samples with %TOC > than 12, a value of 12% was applied. For samples with %TOC < 0.2, SC were not calculated.
Sample LG03 MID was extracted by TCLP. Analytical results are reported in Table 5-20.
Alternative Screening References:
(1) = EPA ARCS No Effects concentrations.
(2) = NOAA upper effects threshold concentration (1999).

# Table 5-19
## Three Star Anodizing Site
## Wappingers Falls, New York
## Lagoon Sediment Samplse
## Inorganic Concentrations Compared to Screening Values

| Sample ID | Sediment Severe Effect Level (SEL) | Sediment Lowest Effect Level (LEL) | LG-2 | LG03 UP | LG03 MID | LG03 BOT | LG-4U |
|---|---|---|---|---|---|---|---|
| Sample Date | | | 11/19/02 | 05/08/01 | 05/08/01 | 05/08/01 | 11/19/02 |
| Sample Depth | | | 0 - 2.5 ft. | | | | 0 - 3 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | NC | 73200 (1) | 37500 | (124000 J) | --- | 16500 J | 50700 |
| Antimony | 25.0 (L) | 2.0 (L) | --- | (8.5 JN) | --- | (11 JN) | --- |
| Arsenic | 33.0 (P) | 6.0 (P) | (25 ) | (13 J) | --- | (16 J) | (18 ) |
| Barium | NC | NC | 313 | 432 J | --- | 339 J | 267 |
| Beryllium | NC | NC | 1.3 J | 0.98 J | --- | 0.62 J | 0.86 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (41 *) | (122 J*) | --- | (12 J*) | (64 *) |
| Calcium | NC | NC | 16400 | 22100 J | --- | 5860 J | 22800 |
| Chromium | 110.0 (P) | 26.0 (P) | (8040 *) | (26300 J*) | --- | (1440 J*) | (9100 *) |
| Chromium (Hexavalent) | NC | NC | --- | --- | --- | --- | 310 J |
| Cobalt | NC | NC | 16 J | 10 J | --- | 8.3 J | 25 J |
| Copper | 110.0 (P) | 16.0 (P) | (691 *) | (1070 J*) | --- | (10600 J*) | (1060 *) |
| Iron | 4% (P) | 2% (P) | (4.09 *) | (2.77 J) | --- | (4.06 J*) | (3.47 ) |
| Lead | 110.0 (L) | 31.0 (P) | (3850 *) | (5790 J*) | --- | (806 J*) | (9650 *) |
| Magnesium | NC | NC | 7280 | 6150 J | --- | 5210 J | 10200 |
| Manganese | 1100 (L) | 460 (P) | (583 ) | (861 JN) | --- | 269 JN | (775 ) |
| Mercury | 1.3 (L) | 0.15 (L) | (1.9 *) | --- | --- | (5.1 J*) | (2.1 *) |
| Nickel | 50 (L) | 16 (P) | (313 *) | (263 J*) | --- | (248 J*) | (3890 *) |
| Potassium | NC | NC | 1170 J | 1040 J | --- | 1060 J | 1440 J |
| Selenium | NC | NC | 2.4 J | 5.2 J | --- | 2.6 J | --- |
| Silver | 2.2 (L) | 1.0 (L) | 0.96 J | (1.9 J) | --- | (1.1 J) | (1.5 J) |
| Sodium | NC | NC | 299 J | 508 J | --- | 171 J | 371 J |
| Thallium | NC | NC | 4.7 J | --- | --- | --- | 5.8 J |
| Vanadium | NC | NC | 55 | 101 J | --- | 31 J | 120 |
| Zinc | 270 (L) | 120 (P/L) | (1530 *) | (3010 J*) | --- | (1220 J*) | (1510 *) |
| Cyanide, total | NC | 0.1 (Eisler 1991) | (6.6 ) | (39 J) | --- | (2.6 J) | (69 ) |
| Cyanide, amenable to chlorination | NC | NC | 0.70 JN | --- | --- | --- | 69 JN |
| Percent solids (%) | NA | NA | 27 | 10 | 22 | 27 | 20 |
| pH | NA | NA | 8.2 | 7.8 | --- | 7.7 | 7.5 |
| % TOC | NC | NC | 5.17 B | 15.0 | 11.9 | 9.59 | 9.06 B |
| Total organic carbon (mg/Kg) | NC | NC | 51700 B | 150000 | 119000 | 95900 | 90600 B |

NOTES: J - estimated value, NC = no criterion, NA = not applicable, — - no data. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening criteria are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide criterion obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening Criteria. ( ) - exceeds Sediment (LEL) screening Criteria. Data are presented in units of mg/Kg, except iron and %TOC which are presented as percent (%) concentrations.



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File Number: 10653.27258

# Table 5-19
## Three Star Anodizing Site
## Wappingers Falls, New York
## Lagoon Sediment Samplse
## Inorganic Concentrations Compared to Screening Values

| Sample ID<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Sediment Severe Effect Level (SEL)<br>mg/Kg | Sediment Lowest Effect Level (LEL)<br>mg/Kg | LG-4L<br>11/19/02<br>3 - 6 ft.<br>mg/Kg | LG-7M<br>11/19/02<br>0 - 0 ft.<br>mg/Kg | LG-7L<br>11/19/02<br>0 - 0 ft.<br>mg/Kg |
|---|---|---|---|---|---|
| Aluminum | NC | 73200 (1) | 46700 | 17200 | 10200 |
| Antimony | 25.0 (L) | 2.0 (L) | --- | (14 J) | (362 J*) |
| Arsenic | 33.0 (P) | 6.0 (P) | (10 ) | (37 *) | (141 *) |
| Barium | NC | NC | 1160 | 270 | 110 |
| Beryllium | NC | NC | 1.4 J | 0.96 J | 0.64 J |
| Cadmium | 9.0 (P) | 0.6 (P) | (33 *) | (40 *) | (7.8 ) |
| Calcium | NC | NC | 7080 | 8940 | 9130 |
| Chromium | 110.0 (P) | 26.0 (P) | (10600 *) | (1280 *) | (934 *) |
| Chromium (Hexavalent) | NC | NC | --- | --- | --- |
| Cobalt | NC | NC | 14 J | 13 J | 8.6 J |
| Copper | 110.0 (P) | 16.0 (P) | (654 *) | (3290 *) | (1380 *) |
| Iron | 4% (P) | 2% (P) | (2.26 ) | (4.64 *) | (2.62 ) |
| Lead | 110.0 (L) | 31.0 (P) | (1080 *) | (844 *) | (1150 *) |
| Magnesium | NC | NC | 2910 J | 7240 | 6030 |
| Manganese | 1100 (L) | 460 (P) | 253 | (517 ) | 358 |
| Mercury | 1.3 (L) | 0.15 (L) | (2.2 *) | (5.7 *) | (54 *) |
| Nickel | 50 (L) | 16 (P) | (727 *) | (183 *) | (23 ) |
| Potassium | NC | NC | 973 J | 1410 J | 852 J |
| Selenium | NC | NC | --- | --- | 1.7 J |
| Silver | 2.2 (L) | 1.0 (L) | (2.9 J*) | (1.1 J) | --- |
| Sodium | NC | NC | 267 J | 291 J | 173 J |
| Thallium | NC | NC | 4.3 J | --- | 2.4 J |
| Vanadium | NC | NC | 44 | 50 | 16 J |
| Zinc | 270 (L) | 120 (P/L) | (2010 *) | (3710 *) | (3010 *) |
| Cyanide, total | NC | 0.1 (Eisler 1991) | (7.9 ) | (3.2 ) | (29 ) |
| Cyanide, amenable to chlorination | NC | NC | 7.9 JN | 3.2 JN | 29 JN |
| Percent solids (%) | NA | NA | 25 | 23 | 46 |
| pH | NA | NA | 7.9 | 8.0 | 8.0 |
| % TOC | NC | NC | 19.1 B | 20.0 B | 18.7 B |
| Total organic carbon (mg/Kg) | NC | NC | 191000 B | 200000 B | 187000 B |

NOTES: J - estimated value, NC = no criterion, NA = not applicable, --- - no data. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening criteria are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide criterion obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening Criteria. ( ) - exceeds Sediment (LEL) screening Criteria. Data are presented in units of mg/Kg, except iron and %TOC which are presented as percent (%) concentrations.

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Table 5-20
Three Star Anodizing Site
Wappingers Falls, New York
Lagoon Sediment Samples
Detected Pesticides Concentrations Compared to Screening Values

| | Screening Value (ug/gOC) | | Sediment Concentration | ug/gOC | |
|---|---|---|---|---|---|
| Pesticide | Wildlife | Chronic | mg/Kg | Min TOC | Max TOC |
| DDD | 1.0 | 1.0 | 0.054 | 1.0 | 0.45 |
| DDE | 1.0 | 1.0 | 0.052 | 1.0 | 0.43 |
| DDT | 1.0 | 1.0 | 0.058 | 1.1 | 0.48 |
| Total DDT | 1.0 | 1.0 | 0.11 | **2.1** | 0.9 |
| Dieldrin | --- | 9 | 0.024 | 0.5 | 0.20 |
| Endosulfan II | --- | 0.03* | 0.0087 | **0.2** | **0.07** |
| Endosulfan sulfate | --- | --- | 0.057 | 1.1 | 0.48 |
| Heptachlor epoxide | 0.03 | 0.1 | 0.018 | **0.3** | **0.15** |
| alpha-Chlordane | 0.006 | 0.03 | 0.015 | **0.3** | **0.13** |
| gamma-Chlordane | 0.006 | 0.03 | 0.016 | **0.3** | **0.13** |
| Total Chlordane | 0.006 | 0.03 | 0.031 | **0.6** | **0.3** |

Notes:
Pesticides were detected in one of two samples collected from the Three Star lagoon.

Sediment analytical data reported by laboratory in units of mg/Kg, dry weight were converted to units of ug/gOC for comparison to NYSDEC screening values. Both results are presented.

Sediment concentrations in units of ug/gOC require total organic carbon (TOC) data. However, TOC data were not collected from the sediment samples analyzed for PCBs and pesticides.The concentration range reported in the units of ug/gOC was estimated from the minimum total organic carbon (TOC) concentration detected in the lagoon sediment (5.17%) and the maximum concentration allowable for evaluation using the equilibrium partititioning approach (12%), consistent with NYSDEC guidance. The maximum TOC concentration detected in lagoon sediment (20%) exceeded the NYSDEC maximum.
Sediment concentrations presented in **bold font** exceeded the screening value.
Screening values presented are for the protection of wildlife bioacccumulation (wildlife) and chronic toxicity to benthic organisms (chronic).
* The sediment screening value for Endosulfan was applied.
--- = no screening value available.

# Table 5-21

O'BRIEN & GERE ENGINEERS, INC.

Three Star Anodizing Site
Wappingers Falls, New York
Lagoon Sediment Samplse
Detected Results of TCLP Extraction and Analysis

| Analyte | Sample ID / Sample Date / Units | Regulatory Levels mg/L | LG03 MID 05/08/01 mg/L |
|---|---|---|---|
| Volatiles | | | |
| Chlorobenzene | | 100 | 0.36 |
| Semi-Volatile Organic Compounds | | | |
| 1,4-Dichlorobenzene | | 7.5 | 0.0051 J |
| Inorganic Compounds | | | |
| TCLP Cadmium | | 1.0 | 0.10 |
| TCLP Chromium | | 5.0 | 1.3 |
| TCLP Lead | | 5.0 | 3.3 |
| Pesticide Compounds | | | |
| Herbicide Compounds | | | |

NOTES: J - estimated value, NC = no criterion.
Regulatory levels cited in Federal Register, March 29, 1990; 40 CFR 261.24.

O'BRIEN & GERE ENGINEERS, INC.

# Table 6-1a
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Surface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Sample ID | SS-13 | SS-14 |
|---|---|---|
| Sample Date | 07/11/01 | 07/11/01 |
| | 0 - 2 in. | 0 - 2 in. |
| Units | mg/Kg | mg/Kg |
| Compound | | |
| 1,2,4-Trichlorobenzene | 4.8 U | 3.8 U |
| 1,2-Dichlorobenzene | 4.8 U | 3.8 U |
| 1,3-Dichlorobenzene | 4.8 U | 3.8 U |
| 1,4-Dichlorobenzene | 4.8 U | 3.8 U |
| Bis(2-chloroisopropyl) ether | 4.8 U | 3.8 U |
| 2,4,5-Trichlorophenol | 12 U | 9.2 U |
| 2,4,6-Trichlorophenol | 4.8 U | 3.8 U |
| 2,4-Dichlorophenol | 4.8 U | 3.8 U |
| 2,4-Dimethylphenol | 4.8 U | 3.8 U |
| 2,4-Dinitrophenol | 12 U | 9.2 U |
| 2,4-Dinitrotoluene | 4.8 U | 3.8 U |
| 2,6-Dinitrotoluene | 4.8 U | 3.8 U |
| 2-Chloronaphthalene | 4.8 U | 3.8 U |
| 2-Chlorophenol | 4.8 U | 3.8 U |
| 2-Methylnaphthalene | 1.3 J | 3.8 U |
| 2-Methylphenol | 4.8 U | 3.8 U |
| 2-Nitroaniline | 12 U | 9.2 U |
| 2-Nitrophenol | 4.8 U | 3.8 U |
| 3,3-Dichlorobenzidine | 4.8 U | 3.8 U |
| 3-Nitroaniline | 12 U | 9.2 U |
| 4,6-Dinitro-2-methylphenol | 12 U | 9.2 U |
| 4-Bromophenyl phenyl ether | 4.8 U | 3.8 U |
| 4-Chloro-3-methylphenol | 4.8 U | 3.8 U |
| 4-Chloroaniline | 4.8 U | 3.8 U |
| 4-Chlorophenyl phenyl ether | 4.8 U | 3.8 U |
| 4-Methylphenol | 0.51 J | 3.8 U |
| 4-Nitroaniline | 12 U | 9.2 U |
| 4-Nitrophenol | 12 U | 9.2 U |
| Acenaphthene | 0.81 J | 0.48 J |
| Acenaphthylene | 14 | 3.8 U |
| Anthracene | 20 | 3 J |
| Benzo(a)anthracene | 79 | 11 |
| Benzo[a]pyrene | 87 | 13 |
| Benzo(b)fluoranthene | 100 | 16 |
| Benzo(ghi)perylene | 49 | 4.7 |
| Benzo(k)fluoranthene | 42 | 4.9 |
| Butyl benzyl phthalate | 4.8 U | 3.8 U |
| Carbazole | 2.2 J | 1.4 J |
| Chrysene | 80 | 11 |
| Di-n-butyl phthalate | 4.8 U | 3.8 U |

NOTES: U - not detected, J - estimated value.



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O'BRIEN & GERE ENGINEERS, INC.

# Table 6-1a
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Surface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Sample ID | SS-13 | SS-14 |
|---|---|---|
| Sample Date | 07/11/01 | 07/11/01 |
| | 0 - 2 in. | 0 - 2 in. |
| Units | mg/Kg | mg/Kg |
| Compound | | |
| Di-n-octyl phthalate | 4.8 U | 3.8 U |
| Dibenzo(a,h)anthracene | 18 | 1.6 J |
| Dibenzofuran | 2 J | 0.4 J |
| Diethyl phthalate | 4.8 U | 3.8 U |
| Dimethyl phthalate | 4.8 U | 3.8 U |
| Fluoranthene | 81 | 15 |
| Fluorene | 2.9 J | 0.5 J |
| Hexachlorobenzene | 4.8 U | 3.8 U |
| Hexachlorobutadiene | 4.8 U | 3.8 U |
| Hexachlorocyclopentadiene | 4.8 U | 3.8 U |
| Hexachloroethane | 4.8 U | 3.8 U |
| Indeno(1,2,3-cd)pyrene | 53 | 5.2 |
| Isophorone | 4.8 U | 3.8 U |
| N-Nitrosodipropylamine | 4.8 U | 3.8 U |
| N-Nitrosodiphenylamine | 4.8 U | 3.8 U |
| Naphthalene | 4.6 J | 2.2 J |
| Nitrobenzene | 4.8 U | 3.8 U |
| Pentachlorophenol | 12 U | 9.2 U |
| Phenanthrene | 31 | 7.6 |
| Phenol | 4.8 U | 3.8 U |
| Pyrene | 170 | 13 |
| Bis(2-chloroethoxy)methane | 4.8 U | 3.8 U |
| Bis(2-chloroethyl)ether | 4.8 U | 3.8 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 4.8 U | 1.8 J |
| Total organic carbon (mg/Kg) | 97900 | 42200 |
| Percent solids (%) | 69 | 87.4 |

NOTES: U - not detected, J - estimated value

# Table 6-1b
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Surface Soil Samples
## Semivolatile Organic Compound Data

| Sample ID | SS-MGP1 | SS-MGP1 | SS-MGP2 | SS-MGP2 | SS-MGP3 | SS-MGP3 | SS-MGP4 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 12/06/02 | 12/06/02 | 12/06/02 | 12/06/02 | 12/07/02 | 12/07/02 | 12/07/02 |
| Sample Depth | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 1,2-Dichlorobenzene | 0.54 U | 0.66 | 1.1 J | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 1,3-Dichlorobenzene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 1,4-Dichlorobenzene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Bis(2-chloroisopropyl) ether | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 2,4,5-Trichlorophenol | 1.3 U | 1.1 U | 26 U | 5.0 U | 12 U | 10 U | 0.94 U |
| 2,4,6-Trichlorophenol | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 2,4-Dichlorophenol | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 2,4-Dimethylphenol | 0.54 U | 0.24 J | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 2,4-Dinitrophenol | 1.3 U | 1.1 U | 26 U | 5.0 U | 12 U | 10 U | 0.94 U |
| 2,4-Dinitrotoluene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 2,6-Dinitrotoluene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 2-Chloronaphthalene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 2-Chlorophenol | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 2-Methylnaphthalene | 0.068 J | 0.063 J | 10 U | 0.49 J | 4.6 U | 0.73 J | 0.37 U |
| 2-Methylphenol | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 2-Nitroaniline | 1.3 U | 1.1 U | 26 U | 5.0 U | 12 U | 10 U | 0.94 U |
| 2-Nitrophenol | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 3,3-Dichlorobenzidine | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 3-Nitroaniline | 1.3 U | 1.1 U | 26 U | 5.0 U | 12 UJ | 10 UJ | 0.94 UJ |
| 4,6-Dinitro-2-methylphenol | 1.3 U | 1.1 U | 26 U | 5.0 U | 12 U | 10 U | 0.94 U |
| 4-Bromophenyl phenyl ether | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 4-Chloro-3-methylphenol | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 4-Chloroaniline | 0.54 UJ | 0.45 UJ | 10 UJ | 2.0 UJ | 4.6 UJ | 4.1 UJ | 0.37 UJ |
| 4-Chlorophenyl phenyl ether | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 4-Methylphenol | 0.54 U | 0.079 J | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| 4-Nitroaniline | 1.3 U | 1.1 U | 26 U | 5.0 U | 12 U | 10 U | 0.94 U |
| 4-Nitrophenol | 1.3 U | 1.1 U | 26 U | 5.0 U | 12 U | 10 U | 0.94 U |
| Acenaphthene | 0.11 J | 0.45 U | 10 U | 0.56 J | 4.6 U | 4.1 U | 0.37 U |
| Acenaphthylene | 0.11 J | 0.45 U | 10 U | 0.41 J | 1.0 J | 1.9 J | 0.073 J |
| Anthracene | 0.32 J | 0.45 U | 10 U | 2.7 | 1.1 J | 2.8 J | 0.099 J |
| Benzo(a)anthracene | 0.92 | 0.083 J | 10 U | 15 | 6.7 | 11 | 0.41 |
| Benzo[a]pyrene | 0.86 | 0.073 J | 10 U | 13 | 5.8 | 9.7 | 0.45 |
| Benzo(b)fluoranthene | 1.3 | 0.19 J | 10 U | 17 D | 9.5 | 15 | 0.66 |
| Benzo(ghi)perylene | 0.49 J | 0.060 J | 10 U | 4.8 | 3.0 J | 3.5 J | 0.24 J |
| Benzo(k)fluoranthene | 0.33 J | 0.45 U | 10 U | 7.3 | 2.6 J | 6.2 | 0.24 J |
| Butyl benzyl phthalate | 0.066 J | 0.052 J | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Carbazole | 0.16 J | 0.45 U | 10 U | 1.3 J | 4.6 U | 1.3 J | 0.15 J |
| Chrysene | 0.89 | 0.20 J | 10 U | 13 | 5.9 | 11 | 0.54 |
| Di-n-butyl phthalate | 0.54 U | 0.081 J | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.



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Table 6-1b
Three Star Anodizing Site
Wappingers Falls, New York
MGP Site Surface Soil Samples
Semivolatile Organic Compound Data

| Sample ID | SS-MGP1 | SS-MGP1 | SS-MGP2 | SS-MGP2 | SS-MGP3 | SS-MGP3 | SS-MGP4 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 12/06/02 | 12/06/02 | 12/06/02 | 12/06/02 | 12/07/02 | 12/07/02 | 12/07/02 |
| Sample Depth | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.54 U | 0.056 J | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Dibenzo(a,h)anthracene | 0.14 J | 0.45 U | 10 U | 2.1 | 1.1 J | 1.4 J | 0.069 J |
| Dibenzofuran | 0.12 J | 0.45 U | 10 U | 0.86 J | 4.6 U | 1.2 J | 0.057 J |
| Diethyl phthalate | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Dimethyl phthalate | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Fluoranthene | 1.7 | 0.14 J | 10 U | 21 D | 12 | 24 | 1.3 |
| Fluorene | 0.13 J | 0.45 U | 10 U | 0.74 J | 4.6 U | 1.2 J | 0.072 J |
| Hexachlorobenzene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Hexachlorobutadiene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Hexachlorocyclopentadiene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 UJ | 4.1 UJ | 0.37 UJ |
| Hexachloroethane | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Indeno(1,2,3-cd)pyrene | 0.45 J | 0.049 J | 10 U | 5.8 | 3.1 J | 4.1 | 0.23 J |
| Isophorone | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| N-Nitrosodipropylamine | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| N-Nitrosodiphenylamine | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Naphthalene | 0.10 J | 0.065 J | 10 U | 0.94 J | 4.6 U | 1.2 J | 0.37 U |
| Nitrobenzene | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Pentachlorophenol | 1.3 U | 1.1 U | 26 U | 5.0 U | 12 U | 10 U | 0.94 U |
| Phenanthrene | 1.5 | 0.19 J | 10 U | 11 | 4.3 J | 15 | 1.2 |
| Phenol | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Pyrene | 1.9 | 0.15 J | 10 U | 17 D | 11 | 20 | 1.2 |
| Bis(2-chloroethoxy)methane | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Bis(2-chloroethyl)ether | 0.54 U | 0.45 U | 10 U | 2.0 U | 4.6 U | 4.1 U | 0.37 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 5.4 D | 20 D | 36 | 0.47 J | 0.47 J | 0.44 J | 0.073 J |
| Total organic carbon (mg/Kg) | 112000 B | 261000 B | 48800 B | 88100 B | 49400 | 34400 | 11600 |
| Percent solids (%) | 62.2 | 73.9 | 64.9 | 82.6 | 71.8 | 80.6 | 88.5 |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

# Table 6-1b
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Surface Soil Samples
## Semivolatile Organic Compound Data

| Sample ID | SS-MGP4 | SS-MGP4 DUP | SS-MGP5 | SS-MGP5 | SS-MGP6 | SS-MGP6 | SS-MGP7 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 |
| Sample Depth | 0 - 24 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 1,2-Dichlorobenzene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 1,3-Dichlorobenzene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 1,4-Dichlorobenzene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Bis(2-chloroisopropyl) ether | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2,4,5-Trichlorophenol | 0.93 U | 0.93 U | 0.91 U | 0.97 U | 1.0 U | 9.7 U | 9.7 U |
| 2,4,6-Trichlorophenol | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2,4-Dichlorophenol | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2,4-Dimethylphenol | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2,4-Dinitrophenol | 0.93 U | 0.93 U | 0.91 U | 0.97 U | 1.0 U | 9.7 U | 9.7 U |
| 2,4-Dinitrotoluene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2,6-Dinitrotoluene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2-Chloronaphthalene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2-Chlorophenol | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2-Methylnaphthalene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2-Methylphenol | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 2-Nitroaniline | 0.93 U | 0.93 U | 0.91 U | 0.97 U | 1.0 U | 9.7 U | 9.7 U |
| 2-Nitrophenol | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 3,3-Dichlorobenzidine | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 3-Nitroaniline | 0.93 UJ | 0.93 UJ | 0.91 UJ | 0.97 UJ | 1.0 UJ | 9.7 UJ | 9.7 UJ |
| 4,6-Dinitro-2-methylphenol | 0.93 U | 0.93 U | 0.91 U | 0.97 U | 1.0 U | 9.7 U | 9.7 U |
| 4-Bromophenyl phenyl ether | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 4-Chloro-3-methylphenol | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 4-Chloroaniline | 0.37 UJ | 0.37 UJ | 0.36 UJ | 0.39 UJ | 0.42 UJ | 3.9 UJ | 3.9 UJ |
| 4-Chlorophenyl phenyl ether | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 4-Methylphenol | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| 4-Nitroaniline | 0.93 U | 0.93 U | 0.91 U | 0.97 U | 1.0 U | 9.7 U | 9.7 U |
| 4-Nitrophenol | 0.93 U | 0.93 U | 0.91 U | 0.97 U | 1.0 U | 9.7 U | 9.7 U |
| Acenaphthene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 0.40 J | 3.9 U |
| Acenaphthylene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.10 J | 3.3 J | 1.6 J |
| Anthracene | 0.085 J | 0.048 J | 0.36 U | 0.39 U | 0.28 J | 14 | 3.6 J |
| Benzo(a)anthracene | 0.29 J | 0.19 J | 0.36 U | 0.060 J | 0.97 | 19 | 14 |
| Benzo[a]pyrene | 0.26 J | 0.18 J | 0.36 U | 0.056 J | 0.88 | 15 D | 14 |
| Benzo(b)fluoranthene | 0.42 | 0.28 J | 0.36 U | 0.069 J | 1.3 | 19 D | 18 |
| Benzo(ghi)perylene | 0.099 J | 0.074 J | 0.36 U | 0.050 J | 0.41 J | 8.4 D | 6.3 |
| Benzo(k)fluoranthene | 0.11 J | 0.089 J | 0.36 U | 0.39 U | 0.35 J | 6.4 J | 6.4 |
| Butyl benzyl phthalate | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Carbazole | 0.043 J | 0.37 U | 0.36 U | 0.39 U | 0.060 J | 1.7 J | 0.40 J |
| Chrysene | 0.26 J | 0.18 J | 0.36 U | 0.055 J | 0.78 | 15 | 12 |
| Di-n-butyl phthalate | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

Table 6-1b
Three Star Anodizing Site
Wappingers Falls, New York
MGP Site Surface Soil Samples
Semivolatile Organic Compound Data

| Sample ID | SS-MGP4 | SS-MGP4 DUP | SS-MGP5 | SS-MGP5 | SS-MGP6 | SS-MGP6 | SS-MGP7 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 |
| Sample Depth | 0 - 24 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 UJ | 3.9 U |
| Dibenzo(a,h)anthracene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.14 J | 2.7 J | 2.2 J |
| Dibenzofuran | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 1.2 J | 3.9 U |
| Diethyl phthalate | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Dimethyl phthalate | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Fluoranthene | 0.58 | 0.37 J | 0.36 U | 0.095 J | 1.9 | 48 D | 25 |
| Fluorene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.080 J | 2.6 J | 0.52 J |
| Hexachlorobenzene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Hexachlorobutadiene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Hexachlorocyclopentadiene | 0.37 UJ | 0.37 UJ | 0.36 UJ | 0.39 UJ | 0.42 UJ | 3.9 UJ | 3.9 UJ |
| Hexachloroethane | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Indeno(1,2,3-cd)pyrene | 0.10 J | 0.075 J | 0.36 U | 0.39 U | 0.44 | 8.7 D | 6.6 |
| Isophorone | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| N-Nitrosodipropylamine | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| N-Nitrosodiphenylamine | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Naphthalene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 0.88 J |
| Nitrobenzene | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Pentachlorophenol | 0.93 U | 0.93 U | 0.91 U | 0.97 U | 1.0 U | 9.7 U | 9.7 U |
| Phenanthrene | 0.41 | 0.24 J | 0.36 U | 0.072 J | 1.0 | 30 | 6.6 |
| Phenol | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Pyrene | 0.51 | 0.33 J | 0.36 U | 0.11 J | 1.6 | 34 D | 22 |
| Bis(2-chloroethoxy)methane | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Bis(2-chloroethyl)ether | 0.37 U | 0.37 U | 0.36 U | 0.39 U | 0.42 U | 3.9 U | 3.9 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.064 J | 0.071 J | 0.060 J | 0.046 J | 0.075 J | 3.9 U | 3.9 U |
| Total organic carbon (mg/Kg) | 5760 | 7190 | 6260 | 20900 | 8250 | 11400 | 14100 B |
| Percent solids (%) | 90.1 | 89.7 | 91.7 | 85.5 | 79.5 | 86 | 86.3 |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

Table 6-1b
Three Star Anodizing Site
Wappingers Falls, New York
MGP Site Surface Soil Samples
Semivolatile Organic Compound Data

| Sample ID | SS-MGP7 | SS-MGP7 DUP | SS-MGP7 DUP |
|---|---|---|---|
| Location Cross Reference | | | |
| Sample Date | 12/07/02 | 12/07/02 | 12/07/02 |
| Sample Depth | 0 - 24 in. | 0 - 24 in. | 0 - 24 in. |
| Units | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | |
| 1,2,4-Trichlorobenzene | 4.0 U | 0.40 U | --- |
| 1,2-Dichlorobenzene | 4.0 U | 0.40 U | --- |
| 1,3-Dichlorobenzene | 4.0 U | 0.40 U | --- |
| 1,4-Dichlorobenzene | 4.0 U | 0.40 U | --- |
| Bis(2-chloroisopropyl) ether | 4.0 U | 0.40 U | --- |
| 2,4,5-Trichlorophenol | 9.9 U | 1.0 U | --- |
| 2,4,6-Trichlorophenol | 4.0 U | 0.40 U | --- |
| 2,4-Dichlorophenol | 4.0 U | 0.40 U | --- |
| 2,4-Dimethylphenol | 4.0 U | 0.40 U | --- |
| 2,4-Dinitrophenol | 9.9 U | 1.0 U | --- |
| 2,4-Dinitrotoluene | 4.0 U | 0.40 U | --- |
| 2,6-Dinitrotoluene | 4.0 U | 0.40 U | --- |
| 2-Chloronaphthalene | 4.0 U | 0.40 U | --- |
| 2-Chlorophenol | 4.0 U | 0.40 U | --- |
| 2-Methylnaphthalene | 4.0 U | 0.17 J | --- |
| 2-Methylphenol | 4.0 U | 0.40 U | --- |
| 2-Nitroaniline | 9.9 U | 1.0 U | --- |
| 2-Nitrophenol | 4.0 U | 0.40 U | --- |
| 3,3-Dichlorobenzidine | 4.0 U | 0.40 U | --- |
| 3-Nitroaniline | 9.9 UJ | 1.0 UJ | --- |
| 4,6-Dinitro-2-methylphenol | 9.9 U | 1.0 U | --- |
| 4-Bromophenyl phenyl ether | 4.0 U | 0.40 U | --- |
| 4-Chloro-3-methylphenol | 4.0 U | 0.40 U | --- |
| 4-Chloroaniline | 4.0 UJ | 0.40 UJ | --- |
| 4-Chlorophenyl phenyl ether | 4.0 U | 0.40 U | --- |
| 4-Methylphenol | 4.0 U | 0.046 J | --- |
| 4-Nitroaniline | 9.9 U | 1.0 U | --- |
| 4-Nitrophenol | 9.9 U | 1.0 U | --- |
| Acenaphthene | 4.0 U | 0.098 J | --- |
| Acenaphthylene | 0.80 J | 0.77 | --- |
| Anthracene | 2.0 J | 1.8 | --- |
| Benzo(a)anthracene | 7.7 | 9.0 D | --- |
| Benzo[a]pyrene | 7.5 | 8.1 D | --- |
| Benzo(b)fluoranthene | 9.7 | 11 D | --- |
| Benzo(ghi)perylene | 3.5 J | 3.2 | --- |
| Benzo(k)fluoranthene | 3.8 J | 3.0 DJ | --- |
| Butyl benzyl phthalate | 4.0 U | 0.40 U | --- |
| Carbazole | 0.56 J | 0.40 | --- |
| Chrysene | 6.6 | 7.8 D | --- |
| Di-n-butyl phthalate | 4.0 U | 0.40 U | --- |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.



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Table 6-1b
Three Star Anodizing Site
Wappingers Falls, New York
MGP Site Surface Soil Samples
Semivolatile Organic Compound Data

| Sample ID | SS-MGP7 | SS-MGP7 DUP | SS-MGP7 DUP |
|---|---|---|---|
| Location Cross Reference | | | |
| Sample Date | 12/07/02 | 12/07/02 | 12/07/02 |
| Sample Depth | 0 - 24 in. | 0 - 24 in. | 0 - 24 in. |
| Units | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | |
| Di-n-octyl phthalate | 4.0 U | 0.40 UJ | --- |
| Dibenzo(a,h)anthracene | 1.1 J | 1.1 | --- |
| Dibenzofuran | 4.0 U | 0.17 J | --- |
| Diethyl phthalate | 4.0 U | 0.40 U | --- |
| Dimethyl phthalate | 4.0 U | 0.40 U | --- |
| Fluoranthene | 13 | 14 D | --- |
| Fluorene | 4.0 U | 0.24 J | --- |
| Hexachlorobenzene | 4.0 U | 0.40 U | --- |
| Hexachlorobutadiene | 4.0 U | 0.40 U | --- |
| Hexachlorocyclopentadiene | 4.0 UJ | 0.40 UJ | --- |
| Hexachloroethane | 4.0 U | 0.40 U | --- |
| Indeno(1,2,3-cd)pyrene | 3.6 J | 4.9 D | --- |
| Isophorone | 4.0 U | 0.40 U | --- |
| N-Nitrosodipropylamine | 4.0 U | 0.40 U | --- |
| N-Nitrosodiphenylamine | 4.0 U | 0.40 U | --- |
| Naphthalene | 0.65 J | 0.54 | --- |
| Nitrobenzene | 4.0 U | 0.40 U | --- |
| Pentachlorophenol | 9.9 U | 1.0 U | --- |
| Phenanthrene | 5.3 | 4.3 D | --- |
| Phenol | 4.0 U | 0.052 J | --- |
| Pyrene | 12 | 14 D | --- |
| Bis(2-chloroethoxy)methane | 4.0 U | 0.40 U | --- |
| Bis(2-chloroethyl)ether | 4.0 U | 0.40 U | --- |
| Bis(2-ethylhexyl)phthalate (BEHP) | 4.0 U | 0.70 | --- |
| Total organic carbon (mg/Kg) | 21100 B | --- | 104000 |
| Percent solids (%) | 83.5 | 83.2 | --- |

NOTES: U - not detected, J - estimated value, B - blank contamination, D - dilution.

# Table 6-2a
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Surface Soil Samples (2001)
## Inorganic Data

| Sample ID | SS-13 | SS-14 | TP-04 | TP-12 |
|---|---|---|---|---|
| Location Cross Reference | | | | |
| Sample Date | 7/11/2001 | 7/11/2001 | 4/24/2001 | 4/25/2001 |
| Sample Depth | 0 - 2 in. | 0 - 2 in. | 6 - 30 in. | 0 - 24 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | |
| Aluminum | 9830 | 8570 | 12200 | 9080 |
| Antimony | 2.6 J | 7.4 J | 1.1 JN | 0.32 JN |
| Arsenic | 9.6 | 14 | 5.3 | 6.3 |
| Barium | 126 | 275 | 41 J | 77 |
| Beryllium | 0.52 J | 0.47 J | 0.53 J | 0.44 J |
| Cadmium | 2.1 | 2.8 | 0.78 J | 0.23 J |
| Calcium | 8750 | 13700 | 2940 | 5690 |
| Chromium | 24 | 31 | 21 | 12 |
| Chromium (Hexavalent) | --- | 4.8 U | 4.4 U | 4.5 U |
| Cobalt | 8.5 J | 8.8 J | 7.2 J | 5.7 J |
| Copper | 75 | 441 | 38 | 22 |
| Iron | 31100 | 63100 | 30200 | 20200 |
| Lead | 224 | 666 | 53 | 27 |
| Magnesium | 5660 | 6810 | 6420 | 3680 |
| Manganese | 643 | 715 | 520 | 408 JN |
| Mercury | 0.95 | 0.84 | 0.24 | 0.10 U |
| Nickel | 39 | 40 | 22 | 15 |
| Potassium | 1120 J | 923 J | 808 J | 673 J |
| Selenium | 1.7 | 2.1 | 1.1 | 0.80 J |
| Silver | --- | 0.25 J | 0.16 U | 0.17 U |
| Sodium | 49 J | 116 J | 36 J | 142 J |
| Thallium | --- | 0.82 U | 0.79 U | 0.82 U |
| Vanadium | 58 | 34 | 17 | 41 |
| Zinc | 451 | 752 | 114 | 62 |
| Cyanide, total | 2.6 | 0.57 U | 0.55 U | 0.67 |
| Cyanide, amenable to chlorination | --- | --- | --- | 0.67 U |
| | | | | |
| Percent solids (%) | 71 | 84 | 91 | 90 |
| % TOC | 9.8 | 4.2 | 1.7 J | 3.1 JN |
| Total organic carbon (mg/Kg) | 97900 | 42200 | 16500 J | 30700 JN |

NOTES: U - not detected, J - estimated value, NC - no criterion, --- - no data.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.

# Table 6-2b
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Surface Soil Samples (2002)
## Inorganic Data

| Sample ID | SS-MGP1 | SS-MGP1 | SS-MGP2 | SS-MGP2 | SS-MGP3 | SS-MGP3 | SS-MGP4 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 12/06/02 | 12/06/02 | 12/06/02 | 12/06/02 | 12/07/02 | 12/07/02 | 12/07/02 |
| Sample Depth | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 3820 | 2120 | 2990 | 2340 | 11800 | 12400 | 11600 |
| Antimony | 0.68 U | 1.2 J | 4.3 J | 0.51 U | 0.73 J | 1.3 J | 0.47 UJ |
| Arsenic | 14.4 | 37.1 | 41.3 | 17.8 | 10.7 | 11.2 | 8.3 |
| Barium | 241 | 255 | 160 | 89.5 | 91.4 J | 118 J | 46 J |
| Beryllium | 0.32 J | 0.46 J | 0.42 J | 0.32 J | 0.56 J | 0.59 J | 0.52 J |
| Cadmium | 7.2 | 5.7 | 55.3 | 4.3 | 5.7 | 2.9 | 0.54 J |
| Calcium | 8000 | 4570 | 9040 | 2590 | 4780 | 5000 | 14000 |
| Chromium | 27.8 | 85.4 | 158 | 15.9 | 23.8 | 22.6 | 17.2 |
| Chromium (Hexavalent) | 12 J | 5.3 UJ | 12 J | 4.9 UJ | 28 UJ | 4.8 UJ | 4.5 UJ |
| Cobalt | 7.1 J | 5.3 J | 7.9 J | 5.3 J | 11.3 J | 12 J | 10.5 J |
| Copper | 102 | 94 | 72.8 | 93.8 | 111 | 141 | 39 |
| Iron | 20200 | 41000 | 68900 | 9920 | 37200 | 39700 | 32600 |
| Lead | 1160 | 184 | 462 | 266 | 225 J | 233 J | 44.6 J |
| Magnesium | 1970 | 419 J | 1210 J | 945 J | 5650 | 6990 | 7470 |
| Manganese | 314 | 110 | 201 | 115 | 748 J | 706 J | 886 J |
| Mercury | 1.5 | 0.26 | 2.3 | 0.96 | 1.4 J | 1.3 J | 0.09 J |
| Nickel | 31 | 16.9 | 29.6 | 13.9 | 39.3 | 35.1 | 28.7 |
| Potassium | 595 J | 321 J | 410 J | 347 J | 1200 J | 948 J | 1070 J |
| Selenium | 2.2 | 1.6 | 1.7 | 0.47 J | 0.66 J | 0.45 U | 0.41 U |
| Silver | 0.43 J | 0.55 J | 1.4 J | 0.5 J | 0.33 J | 0.3 U | 0.3 J |
| Sodium | 176 J | 60.4 J | 65.1 J | 71.4 J | 62.6 J | 61.2 J | 43.3 J |
| Thallium | 1.2 U | 0.97 U | 1.1 U | 1.4 J | 1 U | 0.89 U | 0.81 U |
| Vanadium | 70.7 | 33.9 | 57.3 | 26.8 | 60.3 | 47.1 | 33 |
| Zinc | 2570 | 236 | 606 | 456 | 263 J | 263 J | 101 J |
| Cyanide, total | 0.8 U | 0.68 U | 0.89 | 0.91 | 0.7 U | 0.62 U | 0.56 U |
| Cyanide, amenable to chlorination | --- | --- | 0.89 U | 0.91 | --- | --- | --- |
| Percent solids (%) | 62.2 | 73.9 | 64.9 | 82.6 | 71.8 | 80.6 | 88.5 |
| Total organic carbon (mg/Kg) | 112000 B | 261000 B | 48800 B | 88100 B | 49400 | 34400 | 11600 |

NOTES: U - not detected, J - estimated value, B - blank contamination



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Table 6-2b
Three Star Anodizing Site
Wappingers Falls, New York
MGP Site Surface Soil Samples (2002)
Inorganic Data

| Sample ID | SS-MGP4 | SS-MGP4 DUP | SS-MGP5 | SS-MGP5 | SS-MGP6 | SS-MGP6 | SS-MGP7 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 | 12/07/02 |
| Sample Depth | 0 - 24 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. | 0 - 24 in. | 0 - 2 in. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 11500 | 10200 | 10800 | 12400 | 16100 | 14000 | 12500 |
| Antimony | 0.47 UJ | 0.47 UJ | 0.46 UJ | 0.49 UJ | 0.53 UJ | 0.49 UJ | 1.2 J |
| Arsenic | 7.4 | 7 | 7 | 7.7 | 8.3 | 7.5 | 11.1 |
| Barium | 46.5 J | 37.2 J | 58.5 J | 61.9 J | 74.8 J | 71.2 J | 111 J |
| Beryllium | 0.5 J | 0.43 J | 0.5 J | 0.6 J | 0.63 J | 0.56 J | 0.53 J |
| Cadmium | 0.47 J | 0.41 J | 0.5 J | 0.51 J | 0.66 J | 0.7 J | 2.1 |
| Calcium | 14000 | 17200 | 29100 | 10300 | 1880 | 4670 | 5000 |
| Chromium | 15.3 | 14.5 | 13.7 | 17.5 | 21.1 | 18.2 | 27.2 |
| Chromium (Hexavalent) | 1.5 J | 4.5 UJ | 4.4 UJ | 2.1 J | 5.8 UJ | 4.8 UJ | 4.6 UJ |
| Cobalt | 10.5 J | 11.3 | 9.2 J | 12.1 | 13.1 | 12.4 | 9.6 J |
| Copper | 40.1 | 34.8 | 29.8 | 39.4 | 62.9 | 58.9 | 124 |
| Iron | 30700 | 28000 | 29700 | 31200 | 36700 | 33600 | 38100 |
| Lead | 38.9 J | 38.8 J | 41.6 J | 55.2 J | 97.4 J | 99.9 J | 244 J |
| Magnesium | 7560 | 6890 | 7490 | 8250 | 6550 | 7140 | 7100 |
| Manganese | 949 J | 843 J | 1320 J | 926 J | 741 J | 936 J | 645 J |
| Mercury | 0.13 J | 0.12 J | 0.05 J | 0.2 J | 0.2 J | 0.21 J | 0.67 J |
| Nickel | 25.9 | 23.9 | 24.1 | 27.7 | 33.5 | 28.7 | 35.7 |
| Potassium | 930 J | 817 J | 878 J | 1020 J | 1070 J | 888 J | 1060 J |
| Selenium | 0.4 U | 0.4 U | 0.39 U | 0.42 U | 0.45 U | 0.58 J | 0.52 J |
| Silver | 0.27 U | 0.31 J | 0.26 U | 0.28 U | 0.3 U | 0.28 U | 0.35 J |
| Sodium | 44 J | 41.8 J | 39.1 J | 51.5 J | 51.3 J | 49.3 J | 98.1 J |
| Thallium | 0.8 U | 0.8 U | 0.79 U | 0.84 U | 0.91 U | 0.94 J | 0.83 U |
| Vanadium | 24.5 | 18.6 | 18.4 | 23.4 | 31.5 | 21.5 | 42.4 |
| Zinc | 104 J | 80.1 J | 126 J | 122 J | 146 J | 148 J | 396 J |
| Cyanide, total | 0.55 U | 0.56 U | 0.55 U | 0.58 U | 0.63 U | 0.58 U | 0.64 |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | 0.64 U |
| Percent solids (%) | 90.1 | 89.7 | 91.7 | 85.5 | 79.5 | 86 | 86.3 |
| Total organic carbon (mg/Kg) | 5760 | 7190 | 6260 | 20900 | 8250 | 11400 | 14100 B |

NOTES: U - not detected, J - estimated value, B - blank contamination



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Table 6-2b
Three Star Anodizing Site
Wappingers Falls, New York
MGP Site Surface Soil Samples (2002)
Inorganic Data

| Sample ID | SS-MGP7 | SS-MGP7 DUP | SS-MGP7 DUP |
|---|---|---|---|
| Location Cross Reference | | | |
| Sample Date | 12/07/02 | 12/07/02 | 12/07/02 |
| Sample Depth | 0 - 24 in. | 0 - 24 in. | 0 - 24 in. |
| Units | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | |
| Aluminum | 10300 | --- | 10700 |
| Antimony | 3.2 J | --- | 2 J |
| Arsenic | 13.9 | --- | 15.1 |
| Barium | 145 J | --- | 248 J |
| Beryllium | 0.5 J | --- | 0.61 J |
| Cadmium | 3.2 | --- | 4.4 |
| Calcium | 6670 | --- | 23000 |
| Chromium | 22.5 | --- | 26 |
| Chromium (Hexavalent) | 3.5 J | --- | 4.8 UJ |
| Cobalt | 9.7 J | --- | 11.4 J |
| Copper | 148 | --- | 202 |
| Iron | 30500 | --- | 34700 |
| Lead | 310 J | --- | 376 J |
| Magnesium | 5150 | --- | 5690 |
| Manganese | 569 J | --- | 2450 J |
| Mercury | 1.1 J | --- | 1.4 J |
| Nickel | 27.3 | --- | 35.6 |
| Potassium | 782 J | --- | 818 J |
| Selenium | 0.43 U | --- | 1.4 |
| Silver | 0.64 J | --- | 0.31 J |
| Sodium | 104 J | --- | 124 J |
| Thallium | 0.86 U | --- | 1.4 J |
| Vanadium | 28.4 | --- | 29.3 |
| Zinc | 392 J | --- | 411 J |
| Cyanide, total | 0.83 | --- | 1 |
| Cyanide, amenable to chlorination | 0.83 U | --- | 1 U |
| Percent solids (%) | 83.5 | 83.2 | --- |
| Total organic carbon (mg/Kg) | 21100 B | --- | 104000 |

NOTES: U - not detected, J - estimated value, B - blank contamination



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Table 6-3
Three Star Anodizing Site
Wappingers Falls, New York
Observations during soil boring activities on the MGP Site

| Site Area | Sample ID | Description |
|---|---|---|
| Former gas holders | SB-3-01, SB-4-01 | Soil borings SB-3-01 and SB-4-01 were completed in the center of the former gas holders. Both SB-3-01 and SB-4-01 encountered what appeared to be the bottom of the gas holders at depths of 6.5 and 9.2 feet below grade, respectively. Split-spoon refusal was recorded at these depths and red/orange brick fragments were recovered from the samples. Both soil borings were advanced to bedrock. Borings did not encounter structural bottoms in either of the gas holders.<br><br>Although no odors were noticed, the PID headspace screening detected trace readings of approximately 3 to 4 ppm from the 8 to 10 foot depth interval in SB-3-01; just below the bottom of the gas holder. A mothball-type odor, commonly indicative of naphthalene, was noticed from the weathered bedrock surface from 26.0 to 26.8 feet below grade. A PID reading of 0.2 ppm was noted in the headspace screening from this interval.<br><br>Soil boring SB-4-01, completed in the northern-most gas holder, encountered fill material and native soil with a strong mothball odor from approximately 6 feet to the weathered bedrock surface at a depth of approximately 12 feet below grade. Headspace screening detected a PID reading of 0.5 ppm in surface soil to approximately 27 ppm in soil obtained from the 8- to 10-foot depth interval. Naphthalene odors and PID headspace readings ranging from approximately 8 to 11 ppm were observed in the weathered bedrock from approximately 12 to 14 feet below grade. |
| Area adjacent to the creek | MW-4, MW-5 | During the installation of both MW-4 and MW-5, naphthalene odors were observed in soil encountered at a depth of approximately 14 feet below grade. In both MW-4 and MW-5, the highest PID headspace measurements were obtained from the 14- to 16-foot depth interval. Soil from MW-4 had the highest PID headspace reading (108 ppm). Soils at this interval included a change from apparent fill material consisting of gravel and sandy silt to native material consisting of clayey silt. Furthermore, soil collected from this interval contained small globules of free product. Although a napthalene odor persisted from 16 feet to 24 feet below grade, PID headspace readings declined from approximately 63 ppm to<br><br>During the installation of MW-5, napthalene odors were detected from 14 feet to 18 feet below grade and soil headspace PID readings ranged from 8.0 to 1.5 ppm. At depths greater than 18 feet below grade, no odors were observed and soil headspace concentrations were not detected by the PID. |
| | BMW-1 | During installation of BMW-1, naphthalene odors were encountered in soils observed between 18 to 38 ft below ground surface. Soils at these intervals included medium to coarse grained sand and fine grained gravel with several layers of less permeable fine to medium grained sand. The soils with the strongest odors, highest headspace PID readings and globules of free product occurred in the coarser grained sand and gravel layers. PID readings ranged from 1.2 ppm in the finer layers to 98.1 ppm between 28 to 29.6 ft below ground surface. Globules of free product were observed in the coarser material between 26 to 29.6 ft and 34 to 36 ft below ground surface. |

Table 6-3
Three Star Anodizing Site
Wappingers Falls, New York
Observations during soil boring activities on the MGP Site

| Site Area | Sample ID | Description |
|---|---|---|
| Area between the former gass holders and the Three Star lagoon | MW-2, MW-3 | No evidence of contamination was observed in soil samples collected during the installation of MW-2 and MW-3, nor was fill material encountered in the wells. A brown coarse to fine sand unit with variable amounts of gravel was encountered from grade to a depth of 10 and 12 feet below grade in MW-2 and MW-3, respectively. The sand unit was consistently underlain by a lower permeability gray/brown sand unit, but with a higher fraction of silty clay. In both MW-2 and MW-3, this unit was approximately two feet thick and was underlain by brown coarse to fine sand with variable amounts of coarse to fine sand and trace levels of clayey silt. |

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# Table 6-4
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Subsurface Soil Samples (2001)
## Volatile Organic Compound Data

| Sample ID | MW-2 | MW-2 | MW-3 | MW-3 | MW-4 | MW-4 | MW-4 |
|---|---|---|---|---|---|---|---|
| Sample Date | 04/26/01 | 04/26/01 | 04/27/01 | 04/27/01 | 04/30/01 | 04/30/01 | 04/30/01 |
| | 10 - 12 ft. | 14 - 16 ft. | 8 - 10 ft. | 12 - 14 ft. | 12 - 14 ft. | 14 - 16 ft. | 18 - 20 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| 1,1,2,2-Tetrachloroethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| 1,1,2-Trichloroethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| 1,1-Dichloroethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| 1,1-Dichloroethene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| 1,2-Dichloroethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| 1,2-Dichloroethene | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| 2-Butanone (MEK) | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.013 J |
| 2-Hexanone | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| 4-Methyl-2-pentanone (MIBK) | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Acetone | 0.011 U | 0.011 U | 0.01 U | 0.014 J | 0.003 J | 0.054 J | 0.037 J |
| Benzene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.25 | 0.065 J |
| Bromodichloromethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Bromoform | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Bromomethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Carbon disulfide | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Carbon tetrachloride | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Chlorobenzene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Chloroethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Chloroform | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Chloromethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Dibromochloromethane | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Ethylbenzene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.063 J | 0.06 J |
| Methylene chloride | 0.004 J | 0.008 J | 0.006 J | 0.004 J | 0.01 U | 0.016 J | 0.068 U |
| Styrene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Tetrachloroethene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.002 J | 0.12 U | 0.068 U |
| Toluene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Trichloroethene | 0.011 U | 0.011 U | 0.001 J | 0.011 U | 0.003 J | 0.12 U | 0.068 U |
| Vinyl chloride | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Xylene (total) | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.056 J | 0.055 J |
| cis-1,2-Dichloroethene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.007 J | 0.12 U | 0.068 U |
| cis-1,3-Dichloropropylene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| trans-1,2-Dichloroethene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| trans-1,3-Dichloropropene | 0.011 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.12 U | 0.068 U |
| Total organic carbon (mg/Kg) | 4180 JN | 3380 JN | 1470 JN | 4580 JN | 41200 J | 103000 JN | 37400 JN |
| Percent solids (%) | 92.6 | 86.9 | 95.2 | 85.2 | 70 | 64.2 | 72.1 |

NOTES: U - not detected, J - estimated value.



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O'BRIEN & GERE ENGINEERS, INC.

# Table 6-4
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Subsurface Soil Samples (2001)
## Volatile Organic Compound Data

| Compound | Sample ID | MW-5 | MW-5 | MW-5 | MW-5 | SB-2 | SB-3 | SB-3 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 04/30/01 | 04/30/01 | 04/30/01 | 04/30/01 | 04/27/01 | 05/01/01 | 05/01/01 |
| | | 2 - 4 ft. | 12 - 14 ft. | 14 - 16 ft. | 16 - 18 ft. | 6 - 8 ft. | 8 - 10 ft. | 10 - 14 ft. |
| | Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| 1,1,1-Trichloroethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| 1,1,2,2-Tetrachloroethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| 1,1,2-Trichloroethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| 1,1-Dichloroethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| 1,1-Dichloroethene | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| 1,2-Dichloroethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| 1,2-Dichloroethene | | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| 2-Butanone (MEK) | | 0.068 U | 0.021 U | 0.007 J | 0.033 J | 0.011 U | 0.011 U | 0.01 U |
| 2-Hexanone | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| 4-Methyl-2-pentanone (MIBK) | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Acetone | | 0.025 J | 0.003 J | 0.033 J | 0.094 | 0.011 U | 0.011 U | 0.01 U |
| Benzene | | 0.028 J | 0.004 J | 0.015 U | 0.067 U | 0.011 U | 0.002 J | 0.01 U |
| Bromodichloromethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Bromoform | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Bromomethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Carbon disulfide | | 0.068 U | 0.021 U | 0.003 J | 0.012 J | 0.011 U | 0.011 U | 0.01 U |
| Carbon tetrachloride | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Chlorobenzene | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Chloroethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Chloroform | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Chloromethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Dibromochloromethane | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Ethylbenzene | | 0.068 U | 0.021 U | 0.002 J | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Methylene chloride | | 0.009 J | 0.002 J | 0.002 J | 0.067 U | 0.009 J | 0.011 U | 0.01 U |
| Styrene | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Tetrachloroethene | | 0.008 J | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Toluene | | 0.034 J | 0.003 J | 0.015 U | 0.067 U | 0.011 U | 0.002 J | 0.01 U |
| Trichloroethene | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Vinyl chloride | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Xylene (total) | | 0.032 J | 0.021 U | 0.01 J | 0.04 J | 0.011 U | 0.011 U | 0.01 U |
| cis-1,2-Dichloroethene | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.002 J | 0.011 U | 0.01 U |
| cis-1,3-Dichloropropylene | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| trans-1,2-Dichloroethene | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| trans-1,3-Dichloropropene | | 0.068 U | 0.021 U | 0.015 U | 0.067 U | 0.011 U | 0.011 U | 0.01 U |
| Total organic carbon (mg/Kg) | | 113000 J | 29700 | 82700 JN | 109000 JN | 4460 JN | 1170 J | 2170 J |
| Percent solids (%) | | 84.4 | 79.1 | 56.8 | 56.2 | 92 | 94.4 | 95.7 |

NOTES: U - not detected, J - estimated value



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O'BRIEN & GERE ENGINEERS, INC.

# Table 6-4
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Subsurface Soil Samples (2001)
## Volatile Organic Compound Data

| Sample ID | SB-3 | SB-4 | SB-4 | SB-4 | TP-01 | TP-02 | TP-03 |
|---|---|---|---|---|---|---|---|
| Sample Date | 05/01/01 | 05/01/01 | 05/01/01 | 05/01/01 | 04/24/01 | 04/24/01 | 04/24/01 |
| | 24 - 28 ft. | 6 - 8 ft. | 8 - 9.2 ft. | 10 - 12 ft. | 2 - 4 ft. | 3 - 5 ft. | 6 - 8 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,1,1-Trichloroethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| 1,1,2,2-Tetrachloroethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| 1,1,2-Trichloroethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| 1,1-Dichloroethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| 1,1-Dichloroethene | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| 1,2-Dichloroethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| 1,2-Dichloroethene | --- | --- | --- | --- | 0.011 U | 0.011 U | 0.011 U |
| 1,2-Dichloropropane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| 2-Butanone (MEK) | 0.011 U | 0.015 U | 0.013 | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| 2-Hexanone | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Acetone | 0.002 J | 0.015 U | 0.056 | 0.11 J | 0.011 U | 0.011 U | 0.011 U |
| Benzene | 0.011 U | 0.011 J | 0.042 | 0.17 J | 0.011 U | 0.011 U | 0.011 U |
| Bromodichloromethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Bromoform | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Bromomethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Carbon disulfide | 0.011 U | 0.015 U | 0.024 | 0.13 J | 0.011 U | 0.011 U | 0.011 U |
| Carbon tetrachloride | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Chlorobenzene | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Chloroethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Chloroform | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Chloromethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Dibromochloromethane | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Ethylbenzene | 0.011 U | 0.002 J | 0.1 | 0.13 | 0.011 U | 0.011 U | 0.011 U |
| Methylene chloride | 0.011 U | 0.015 U | 0.001 J | 0.002 J | 0.011 U | 0.011 U | 0.011 U |
| Styrene | 0.011 U | 0.003 J | 0.013 | 0.023 | 0.011 U | 0.011 U | 0.011 U |
| Tetrachloroethene | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Toluene | 0.011 U | 0.014 J | 0.08 | 0.15 | 0.011 U | 0.011 U | 0.011 U |
| Trichloroethene | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Vinyl chloride | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Xylene (total) | 0.011 U | 0.008 J | 0.23 | 0.37 | 0.011 U | 0.011 U | 0.011 U |
| cis-1,2-Dichloroethene | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| cis-1,3-Dichloropropylene | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| trans-1,2-Dichloroethene | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| trans-1,3-Dichloropropene | 0.011 U | 0.015 U | 0.013 U | 0.013 U | 0.011 U | 0.011 U | 0.011 U |
| Total organic carbon (mg/Kg) | 946 J | 79800 J | 7970 J | 10900 J | 3690 J | 3690 J | 3180 J |
| Percent solids (%) | 94.2 | 65 | 78.9 | 77.7 | 91.9 | 86.7 | 88.7 |

NOTES: U - not detected, J - estimated value.



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# Table 6-4
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Subsurface Soil Samples (2001)
## Volatile Organic Compound Data

| Sample ID | TP-04 | TP-04 Cinders | TP-05 | TP-05 | TP-06 | TP-12 |
|---|---|---|---|---|---|---|
| Sample Date | 04/24/01 | 04/24/01 | 04/24/01 | 04/24/01 | 04/24/01 | 04/25/01 |
| | 0.5 - 2.5 ft. | | 4 - 6 ft. | 9.5 - 10.5 ft. | 5 - 7 ft. | 0 - 2 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | |
| 1,1,1-Trichloroethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| 1,1,2,2-Tetrachloroethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| 1,1,2-Trichloroethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| 1,1-Dichloroethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| 1,1-Dichloroethene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| 1,2-Dichloroethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| 1,2-Dichloroethene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | --- |
| 1,2-Dichloropropane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| 2-Butanone (MEK) | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| 2-Hexanone | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Acetone | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Benzene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Bromodichloromethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Bromoform | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Bromomethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Carbon disulfide | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Carbon tetrachloride | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Chlorobenzene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Chloroethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Chloroform | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Chloromethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Dibromochloromethane | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Ethylbenzene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Methylene chloride | 0.001 J | 0.003 J | 0.004 J | 0.013 U | 0.002 J | 0.011 U |
| Styrene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Tetrachloroethene | 0.011 U | 0.011 U | 0.024 | 0.005 J | 0.001 J | 0.011 U |
| Toluene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Trichloroethene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Vinyl chloride | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Xylene (total) | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| cis-1,2-Dichloroethene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| cis-1,3-Dichloropropylene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| trans-1,2-Dichloroethene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| trans-1,3-Dichloropropene | 0.011 U | 0.011 U | 0.012 U | 0.013 U | 0.011 U | 0.011 U |
| Total organic carbon (mg/Kg) | 16500 J | 53100 J | 94500 J | 42400 J | 67400 J | 30700 JN |
| Percent solids (%) | 90.7 | 96 | 81.4 | 76.7 | 88.7 | 89.9 |

NOTES: U - not detected, J - estimated value.



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# Table 6-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Suburface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Compound | Sample ID | MW-2 | MW-2 | MW-3 | MW-3 | MW-4 | MW-4 | MW-4 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 04/26/01 | 04/26/01 | 04/27/01 | 04/27/01 | 04/30/01 | 04/30/01 | 04/30/01 |
| | | 10 - 12 ft. | 14 - 16 ft. | 8 - 10 ft. | 12 - 14 ft. | 12 - 14 ft. | 14 - 16 ft. | 18 - 20 ft. |
| | Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| 1,2,4-Trichlorobenzene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 1,2-Dichlorobenzene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 1,3-Dichlorobenzene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 1,4-Dichlorobenzene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Bis(2-chloroisopropyl) ether | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 2,4,5-Trichlorophenol | | 0.85 U | 0.92 U | 0.83 U | 0.89 U | 41 U | 190 U | 1.1 UJ |
| 2,4,6-Trichlorophenol | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 2,4-Dichlorophenol | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 2,4-Dimethylphenol | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 2,4-Dinitrophenol | | 0.85 U | 0.92 U | 0.83 U | 0.89 U | 41 U | 190 U | 1.1 UJ |
| 2,4-Dinitrotoluene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 2,6-Dinitrotoluene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 2-Chloronaphthalene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 2-Chlorophenol | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 2-Methylnaphthalene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 66 J | 0.45 UJ |
| 2-Methylphenol | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 2-Nitroaniline | | 0.85 U | 0.92 U | 0.83 U | 0.89 U | 41 U | 190 U | 1.1 UJ |
| 2-Nitrophenol | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 3,3-Dichlorobenzidine | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 3-Nitroaniline | | 0.85 U | 0.92 U | 0.83 U | 0.89 U | 41 U | 190 U | 1.1 UJ |
| 4,6-Dinitro-2-methylphenol | | 0.85 U | 0.92 U | 0.83 U | 0.89 U | 41 U | 190 U | 1.1 UJ |
| 4-Bromophenyl phenyl ether | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 4-Chloro-3-methylphenol | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 4-Chloroaniline | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 4-Chlorophenyl phenyl ether | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 4-Methylphenol | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| 4-Nitroaniline | | 0.85 U | 0.92 U | 0.83 U | 0.89 U | 41 U | 190 U | 1.1 UJ |
| 4-Nitrophenol | | 0.85 U | 0.92 U | 0.83 U | 0.89 U | 41 U | 190 U | 1.1 UJ |
| Acenaphthene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 100 | 0.45 UJ |
| Acenaphthylene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Anthracene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 14 J | 65 J | 0.077 J |
| Benzo(a)anthracene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 33 | 49 J | 0.49 J |
| Benzo[a]pyrene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 16 J | 36 J | 0.53 J |
| Benzo(b)fluoranthene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 22 | 45 J | 0.75 J |
| Benzo(ghi)perylene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 4.1 J | 16 J | 0.24 J |
| Benzo(k)fluoranthene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 8.3 J | 15 J | 0.22 J |
| Butyl benzyl phthalate | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Carbazole | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 3.5 J | 27 J | 0.05 J |
| Chrysene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 25 | 42 J | 0.5 J |
| Di-n-butyl phthalate | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |

NOTES: U - not detected, J - estimated value.

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# Table 6-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Suburface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Compound | Sample ID | MW-2 | MW-2 | MW-3 | MW-3 | MW-4 | MW-4 | MW-4 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 04/26/01 | 04/26/01 | 04/27/01 | 04/27/01 | 04/30/01 | 04/30/01 | 04/30/01 |
| | Units | 10 - 12 ft. mg/Kg | 14 - 16 ft. mg/Kg | 8 - 10 ft. mg/Kg | 12 - 14 ft. mg/Kg | 12 - 14 ft. mg/Kg | 14 - 16 ft. mg/Kg | 18 - 20 ft. mg/Kg |
| Di-n-octyl phthalate | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Dibenzo(a,h)anthracene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 2 J | 79 U | 0.069 J |
| Dibenzofuran | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 54 J | 0.45 UJ |
| Diethyl phthalate | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Dimethyl phthalate | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Fluoranthene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 72 | 130 | 0.81 J |
| Fluorene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 62 J | 0.45 UJ |
| Hexachlorobenzene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Hexachlorobutadiene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Hexachlorocyclopentadiene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 UJ | 79 U | 0.45 UJ |
| Hexachloroethane | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Indeno(1,2,3-cd)pyrene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 5.2 J | 16 J | 0.24 J |
| Isophorone | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| N-Nitrosodipropylamine | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| N-Nitrosodiphenylamine | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Naphthalene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 2 J | 290 | 0.45 UJ |
| Nitrobenzene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Pentachlorophenol | | 0.85 U | 0.92 U | 0.83 U | 0.89 U | 41 U | 190 U | 1.1 UJ |
| Phenanthrene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 34 | 210 | 0.33 J |
| Phenol | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Pyrene | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 50 | 100 | 0.78 J |
| Bis(2-chloroethoxy)methane | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Bis(2-chloroethyl)ether | | 0.35 U | 0.38 U | 0.35 U | 0.37 U | 17 U | 79 U | 0.45 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | | 0.14 J | 0.27 J | 0.31 J | 0.083 J | 17 U | 79 U | 0.065 J |
| Total organic carbon (mg/Kg) | | 4180 JN | 3380 JN | 1470 JN | 4580 JN | 41200 J | 103000 JN | 37400 JN |
| Percent solids (%) | | 92.6 | 86.9 | 95.2 | 85.2 | 70 | 64.2 | 72.1 |

NOTES: U - not detected, J - estimated value.

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# Table 6-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Subsurface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Compound | Sample ID | MW-5 | MW-5 | MW-5 | MW-5 | SB-2 | SB-3 | SB-3 |
|---|---|---|---|---|---|---|---|---|
| | Sample Date | 04/30/01 | 04/30/01 | 04/30/01 | 04/30/01 | 04/27/01 | 05/01/01 | 05/01/01 |
| | Units | 2 - 4 ft. mg/Kg | 12 - 14 ft. mg/Kg | 14 - 16 ft. mg/Kg | 16 - 18 ft. mg/Kg | 6 - 8 ft. mg/Kg | 8 - 10 ft. mg/Kg | 10 - 14 ft. mg/Kg |
| 1,2,4-Trichlorobenzene | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 1,2-Dichlorobenzene | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 1,3-Dichlorobenzene | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 1,4-Dichlorobenzene | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Bis(2-chloroisopropyl) ether | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2,4,5-Trichlorophenol | | 110 UJ | 85 UJ | 61 U | 27 U | 0.86 U | 0.85 UJ | 0.83 UJ |
| 2,4,6-Trichlorophenol | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2,4-Dichlorophenol | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2,4-Dimethylphenol | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2,4-Dinitrophenol | | 110 UJ | 85 UJ | 61 U | 27 U | 0.86 U | 0.85 UJ | 0.83 UJ |
| 2,4-Dinitrotoluene | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2,6-Dinitrotoluene | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2-Chloronaphthalene | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2-Chlorophenol | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2-Methylnaphthalene | | 17 J | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2-Methylphenol | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 2-Nitroaniline | | 110 UJ | 85 UJ | 61 U | 27 U | 0.86 U | 0.85 UJ | 0.83 UJ |
| 2-Nitrophenol | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 3,3-Dichlorobenzidine | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 3-Nitroaniline | | 110 UJ | 85 UJ | 61 U | 27 U | 0.86 U | 0.85 UJ | 0.83 UJ |
| 4,6-Dinitro-2-methylphenol | | 110 UJ | 85 UJ | 61 U | 27 U | 0.86 U | 0.85 UJ | 0.83 UJ |
| 4-Bromophenyl phenyl ether | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 4-Chloro-3-methylphenol | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 4-Chloroaniline | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 4-Chlorophenyl phenyl ether | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 4-Methylphenol | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| 4-Nitroaniline | | 110 UJ | 85 UJ | 61 U | 27 U | 0.86 U | 0.85 UJ | 0.83 UJ |
| 4-Nitrophenol | | 110 UJ | 85 UJ | 61 U | 27 U | 0.86 U | 0.85 UJ | 0.83 UJ |
| Acenaphthene | | 4.8 J | 10 J | 7 J | 5.6 J | 0.36 U | 0.35 UJ | 0.35 UJ |
| Acenaphthylene | | 28 J | 8.3 J | 5.9 J | 3.5 J | 0.36 U | 0.35 UJ | 0.35 UJ |
| Anthracene | | 56 J | 53 J | 19 J | 16 | 0.36 U | 0.35 UJ | 0.35 UJ |
| Benzo(a)anthracene | | 140 J | 69 J | 42 | 17 | 0.36 U | 0.35 UJ | 0.35 UJ |
| Benzo[a]pyrene | | 110 J | 52 J | 29 | 12 | 0.36 U | 0.35 UJ | 0.35 UJ |
| Benzo(b)fluoranthene | | 130 J | 58 J | 35 | 13 | 0.36 U | 0.35 UJ | 0.35 UJ |
| Benzo(ghi)perylene | | 48 J | 24 J | 8.7 J | 3.3 J | 0.36 U | 0.35 UJ | 0.35 UJ |
| Benzo(k)fluoranthene | | 47 J | 21 J | 11 J | 5.3 J | 0.36 U | 0.35 UJ | 0.35 UJ |
| Butyl benzyl phthalate | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Carbazole | | 15 J | 5.4 J | 25 U | 1.3 J | 0.36 U | 0.35 UJ | 0.35 UJ |
| Chrysene | | 120 J | 58 J | 36 | 14 | 0.36 U | 0.35 UJ | 0.35 UJ |
| Di-n-butyl phthalate | | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |

NOTES: U - not detected, J - estimated value.

O'BRIEN & GERE ENGINEERS, INC.

# Table 6-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Suburface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Sample ID | MW-5 | MW-5 | MW-5 | MW-5 | SB-2 | SB-3 | SB-3 |
|---|---|---|---|---|---|---|---|
| Sample Date | 04/30/01 | 04/30/01 | 04/30/01 | 04/30/01 | 04/27/01 | 05/01/01 | 05/01/01 |
| Units | 2 - 4 ft. mg/Kg | 12 - 14 ft. mg/Kg | 14 - 16 ft. mg/Kg | 16 - 18 ft. mg/Kg | 6 - 8 ft. mg/Kg | 8 - 10 ft. mg/Kg | 10 - 14 ft. mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Dibenzo(a,h)anthracene | 21 J | 10 J | 3.6 J | 1.4 J | 0.36 U | 0.35 UJ | 0.35 UJ |
| Dibenzofuran | 25 J | 16 J | 2.8 J | 3.9 J | 0.36 U | 0.35 UJ | 0.35 UJ |
| Diethyl phthalate | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Dimethyl phthalate | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Fluoranthene | 240 J | 140 J | 82 | 38 | 0.36 U | 0.35 UJ | 0.036 J |
| Fluorene | 32 J | 28 J | 9.7 J | 9.1 J | 0.36 U | 0.35 UJ | 0.35 UJ |
| Hexachlorobenzene | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Hexachlorobutadiene | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Hexachlorocyclopentadiene | 45 UJ | 35 UJ | 25 UJ | 11 UJ | 0.36 U | 0.35 UJ | 0.35 UJ |
| Hexachloroethane | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Indeno(1,2,3-cd)pyrene | 64 J | 29 J | 9.6 J | 3.7 J | 0.36 U | 0.35 UJ | 0.35 UJ |
| Isophorone | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| N-Nitrosodipropylamine | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| N-Nitrosodiphenylamine | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Naphthalene | 30 J | 4.6 J | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Nitrobenzene | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.13 J | 0.052 J |
| Pentachlorophenol | 110 UJ | 85 UJ | 61 U | 27 U | 0.86 U | 0.85 UJ | 0.83 UJ |
| Phenanthrene | 170 J | 130 J | 24 J | 36 | 0.36 U | 0.35 UJ | 0.35 UJ |
| Phenol | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Pyrene | 190 J | 100 J | 72 | 35 | 0.36 U | 0.35 UJ | 0.35 UJ |
| Bis(2-chloroethoxy)methane | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Bis(2-chloroethyl)ether | 45 UJ | 35 UJ | 25 U | 11 U | 0.36 U | 0.35 UJ | 0.35 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | 45 UJ | 35 UJ | 25 U | 11 U | 0.1 J | 0.14 J | 0.16 J |
| Total organic carbon (mg/Kg) | 113000 J | 29700 | 82700 JN | 109000 JN | 4460 JN | 1170 J | 2170 J |
| Percent solids (%) | 84.4 | 79.1 | 56.8 | 56.2 | 92 | 94.4 | 95.7 |

NOTES: U - not detected, J - estimated value.



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# Table 6-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Suburface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Sample ID | SB-3 | SB-4 | SB-4 | SB-4 | TP-01 | TP-02 | TP-03 |
|---|---|---|---|---|---|---|---|
| Sample Date | 05/01/01 | 05/01/01 | 05/01/01 | 05/01/01 | 04/24/01 | 04/24/01 | 04/24/01 |
| | 24 - 28 ft. | 6 - 8 ft. | 8 - 9.2 ft. | 10 - 12 ft. | 2 - 4 ft. | 3 - 5 ft. | 6 - 8 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 1,2-Dichlorobenzene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 1,3-Dichlorobenzene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 1,4-Dichlorobenzene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Bis(2-chloroisopropyl) ether | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 2,4,5-Trichlorophenol | 0.85 UJ | 120 UJ | 51 UJ | 10 UJ | 0.85 U | 0.91 U | 0.89 U |
| 2,4,6-Trichlorophenol | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 2,4-Dichlorophenol | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 2,4-Dimethylphenol | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 2,4-Dinitrophenol | 0.85 UJ | 120 UJ | 51 UJ | 10 UJ | 0.85 U | 0.91 U | 0.89 U |
| 2,4-Dinitrotoluene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 2,6-Dinitrotoluene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 2-Chloronaphthalene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 2-Chlorophenol | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 2-Methylnaphthalene | 0.35 UJ | 5.2 J | 2.8 J | 2.5 J | 0.35 U | 0.38 U | 0.37 U |
| 2-Methylphenol | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 2-Nitroaniline | 0.85 UJ | 120 UJ | 51 UJ | 10 UJ | 0.85 U | 0.91 U | 0.89 U |
| 2-Nitrophenol | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 3,3-Dichlorobenzidine | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 3-Nitroaniline | 0.85 UJ | 120 UJ | 51 UJ | 10 UJ | 0.85 U | 0.91 U | 0.89 U |
| 4,6-Dinitro-2-methylphenol | 0.85 UJ | 120 UJ | 51 UJ | 10 UJ | 0.85 U | 0.91 U | 0.89 U |
| 4-Bromophenyl phenyl ether | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 4-Chloro-3-methylphenol | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 4-Chloroaniline | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 4-Chlorophenyl phenyl ether | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| 4-Methylphenol | 0.35 UJ | 51 UJ | 21 UJ | 0.62 J | 0.35 U | 0.38 U | 0.37 U |
| 4-Nitroaniline | 0.85 UJ | 120 UJ | 51 UJ | 10 UJ | 0.85 U | 0.91 U | 0.89 U |
| 4-Nitrophenol | 0.85 UJ | 120 UJ | 51 UJ | 10 UJ | 0.85 U | 0.91 U | 0.89 U |
| Acenaphthene | 0.35 UJ | 12 J | 5.2 J | 6.9 J | 0.35 U | 0.38 U | 0.37 U |
| Acenaphthylene | 0.35 UJ | 36 J | 5.5 J | 11 J | 0.35 U | 0.38 U | 0.37 U |
| Anthracene | 0.044 J | 150 J | 33 J | 38 J | 0.35 U | 0.38 U | 0.37 U |
| Benzo(a)anthracene | 0.35 UJ | 200 J | 27 J | 47 J | 0.35 U | 0.084 J | 0.37 U |
| Benzo[a]pyrene | 0.35 UJ | 170 J | 23 J | 38 J | 0.35 U | 0.076 J | 0.37 U |
| Benzo(b)fluoranthene | 0.35 UJ | 180 J | 27 J | 52 J | 0.35 U | 0.1 J | 0.37 U |
| Benzo(ghi)perylene | 0.35 UJ | 89 J | 9.9 J | 8.6 J | 0.35 U | 0.051 J | 0.37 U |
| Benzo(k)fluoranthene | 0.35 UJ | 80 J | 7.1 J | 19 J | 0.35 U | 0.38 U | 0.37 U |
| Butyl benzyl phthalate | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Carbazole | 0.35 UJ | 10 J | 4.8 J | 4.7 J | 0.35 U | 0.38 U | 0.37 U |
| Chrysene | 0.35 UJ | 180 J | 30 J | 39 J | 0.35 U | 0.073 J | 0.37 U |
| Di-n-butyl phthalate | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |

NOTES: U - not detected, J - estimated value

O'BRIEN & GERE ENGINEERS, INC.

# Table 6-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Suburface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Sample ID | SB-3 | SB-4 | SB-4 | SB-4 | TP-01 | TP-02 | TP-03 |
|---|---|---|---|---|---|---|---|
| Sample Date | 05/01/01 | 05/01/01 | 05/01/01 | 05/01/01 | 04/24/01 | 04/24/01 | 04/24/01 |
| | 24 - 28 ft. | 6 - 8 ft. | 8 - 9.2 ft. | 10 - 12 ft. | 2 - 4 ft. | 3 - 5 ft. | 6 - 8 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Di-n-octyl phthalate | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Dibenzo(a,h)anthracene | 0.35 UJ | 31 J | 4 J | 3.4 J | 0.35 U | 0.38 U | 0.37 U |
| Dibenzofuran | 0.35 UJ | 15 J | 8.2 J | 9.5 J | 0.35 U | 0.38 U | 0.37 U |
| Diethyl phthalate | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Dimethyl phthalate | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Fluoranthene | 0.068 J | 410 J | 62 J | 89 J | 0.35 U | 0.15 J | 0.37 U |
| Fluorene | 0.35 UJ | 34 J | 14 J | 18 J | 0.35 U | 0.38 U | 0.37 U |
| Hexachlorobenzene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Hexachlorobutadiene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Hexachlorocyclopentadiene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Hexachloroethane | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Indeno(1,2,3-cd)pyrene | 0.35 UJ | 110 J | 13 J | 11 J | 0.35 U | 0.048 J | 0.37 U |
| Isophorone | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| N-Nitrosodipropylamine | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| N-Nitrosodiphenylamine | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Naphthalene | 0.35 UJ | 14 J | 5 J | 6.1 J | 0.35 U | 0.38 U | 0.37 U |
| Nitrobenzene | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Pentachlorophenol | 0.85 UJ | 120 UJ | 51 UJ | 10 UJ | 0.85 U | 0.91 U | 0.89 U |
| Phenanthrene | 0.068 J | 220 J | 65 J | 85 J | 0.35 U | 0.074 J | 0.37 U |
| Phenol | 0.35 UJ | 51 UJ | 21 UJ | 1 J | 0.35 U | 0.38 U | 0.37 U |
| Pyrene | 0.052 J | 340 J | 54 J | 100 J | 0.35 U | 0.13 J | 0.37 U |
| Bis(2-chloroethoxy)methane | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Bis(2-chloroethyl)ether | 0.35 UJ | 51 UJ | 21 UJ | 4.3 UJ | 0.35 U | 0.38 U | 0.37 U |
| Bis(2-ethylhexyl)phthalate (BEHP) | 0.4 J | 51 UJ | 21 UJ | 1.8 J | 0.35 U | 0.38 U | 0.37 U |
| Total organic carbon (mg/Kg) | 946 J | 79800 J | 7970 J | 10900 J | 3690 J | 3690 J | 3180 J |
| Percent solids (%) | 94.2 | 65 | 78.9 | 77.7 | 91.9 | 86.7 | 88.7 |

NOTES: U - not detected, J - estimated value.

O'BRIEN & GERE ENGINEERS, INC.

# Table 6-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Suburface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Compound | Sample ID | TP-04 | TP-04 Cinders | TP-05 | TP-05 | TP-06 | TP-12 |
|---|---|---|---|---|---|---|---|
| | Sample Date | 04/24/01 | 04/24/01 | 04/24/01 | 04/24/01 | 04/24/01 | 04/25/01 |
| | | 0.5 - 2.5 ft. | | 4 - 6 ft. | 9.5 - 10.5 ft. | 5 - 7 ft. | 0 - 2 ft. |
| | Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| 1,2,4-Trichlorobenzene | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 1,2-Dichlorobenzene | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 1,3-Dichlorobenzene | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 1,4-Dichlorobenzene | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Bis(2-chloroisopropyl) ether | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 2,4,5-Trichlorophenol | | 44 U | 170 U | 25 UJ | 1 U | 0.88 U | 23 UJ |
| 2,4,6-Trichlorophenol | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 2,4-Dichlorophenol | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 2,4-Dimethylphenol | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 2,4-Dinitrophenol | | 44 U | 170 U | 25 UJ | 1 U | 0.88 U | 23 UJ |
| 2,4-Dinitrotoluene | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 2,6-Dinitrotoluene | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 2-Chloronaphthalene | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 2-Chlorophenol | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 2-Methylnaphthalene | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 1.1 J |
| 2-Methylphenol | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 2-Nitroaniline | | 44 U | 170 U | 25 UJ | 1 U | 0.88 U | 23 UJ |
| 2-Nitrophenol | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 3,3-Dichlorobenzidine | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 3-Nitroaniline | | 44 U | 170 U | 25 UJ | 1 U | 0.88 U | 23 UJ |
| 4,6-Dinitro-2-methylphenol | | 44 U | 170 U | 25 UJ | 1 U | 0.88 U | 23 UJ |
| 4-Bromophenyl phenyl ether | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 4-Chloro-3-methylphenol | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 4-Chloroaniline | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 4-Chlorophenyl phenyl ether | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 4-Methylphenol | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| 4-Nitroaniline | | 44 U | 170 U | 25 UJ | 1 U | 0.88 U | 23 UJ |
| 4-Nitrophenol | | 44 U | 170 U | 25 UJ | 1 U | 0.88 U | 23 UJ |
| Acenaphthene | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Acenaphthylene | | 14 J | 46 J | 1.8 J | 0.42 U | 0.041 J | 1.2 J |
| Anthracene | | 4.9 J | 21 J | 7.5 J | 0.42 U | 0.14 J | 4.3 J |
| Benzo(a)anthracene | | 44 | 200 | 41 J | 0.11 J | 0.54 | 28 J |
| Benzo[a]pyrene | | 38 | 190 | 43 J | 0.12 J | 0.48 | 29 J |
| Benzo(b)fluoranthene | | 62 | 250 | 57 J | 0.14 J | 0.65 | 37 J |
| Benzo(ghi)perylene | | 16 J | 63 J | 19 J | 0.059 J | 0.21 J | 9.8 J |
| Benzo(k)fluoranthene | | 17 J | 100 | 21 J | 0.053 J | 0.25 J | 15 J |
| Butyl benzyl phthalate | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Carbazole | | 18 U | 7.1 J | 3.9 J | 0.42 U | 0.076 J | 1.5 J |
| Chrysene | | 38 | 170 | 38 J | 0.096 J | 0.49 | 23 J |
| Di-n-butyl phthalate | | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |

NOTES: U - not detected, J - estimated value.

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O'BRIEN & GERE ENGINEERS, INC.

# Table 6-5
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Suburface Soil Samples (2001)
## Semivolatile Organic Compound Data

| Sample ID | TP-04 | TP-04 Cinders | TP-05 | TP-05 | TP-06 | TP-12 |
|---|---|---|---|---|---|---|
| Sample Date | 04/24/01 | 04/24/01 | 04/24/01 | 04/24/01 | 04/24/01 | 04/25/01 |
| | 0.5 - 2.5 ft. | | 4 - 6 ft. | 9.5 - 10.5 ft. | 5 - 7 ft. | 0 - 2 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | |
| Di-n-octyl phthalate | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Dibenzo(a,h)anthracene | 5.4 J | 23 J | 5.4 J | 0.42 U | 0.068 J | 3.2 J |
| Dibenzofuran | 18 U | 70 U | 1.3 J | 0.42 U | 0.047 J | 9.5 UJ |
| Diethyl phthalate | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Dimethyl phthalate | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Fluoranthene | 77 | 240 | 48 J | 0.15 J | 1 | 26 J |
| Fluorene | 18 U | 70 U | 1.5 J | 0.42 U | 0.065 J | 9.5 UJ |
| Hexachlorobenzene | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Hexachlorobutadiene | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Hexachlorocyclopentadiene | 18 UJ | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Hexachloroethane | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Indeno(1,2,3-cd)pyrene | 18 J | 73 | 19 J | 0.061 J | 0.21 J | 10 J |
| Isophorone | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| N-Nitrosodipropylamine | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| N-Nitrosodiphenylamine | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Naphthalene | 18 U | 70 U | 1.7 J | 0.42 U | 0.049 J | 1.1 J |
| Nitrobenzene | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Pentachlorophenol | 44 U | 170 U | 25 UJ | 1 U | 0.88 U | 23 UJ |
| Phenanthrene | 11 J | 14 J | 20 J | 0.082 J | 0.71 | 12 J |
| Phenol | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Pyrene | 80 | 280 | 55 J | 0.15 J | 0.88 | 34 J |
| Bis(2-chloroethoxy)methane | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Bis(2-chloroethyl)ether | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Bis(2-ethylhexyl)phthalate (BEHP) | 18 U | 70 U | 10 UJ | 0.42 U | 0.37 U | 9.5 UJ |
| Total organic carbon (mg/Kg) | 16500 J | 53100 J | 94500 J | 42400 J | 67400 J | 30700 JN |
| Percent solids (%) | 90.7 | 96 | 81.4 | 76.7 | 88.7 | 89.9 |

NOTES: U - not detected, J - estimated value.



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# Table 6-6
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Subsurface Soil Samples (2001)
## Inorganic Data

| Sample ID | MW-2 | MW-2 | MW-3 | MW-3 | MW-4 | MW-4 | MW-4 | MW-5 | MW-5 | MW-5 |
|---|---|---|---|---|---|---|---|---|---|---|
| Location Cross Reference | 4/26/2001 | 4/26/2001 | 4/27/2001 | 4/27/2001 | 4/30/2001 | 4/30/2001 | 4/30/2001 | | | |
| Sample Date | 10 - 12 ft. | 14 - 16 ft. | 8 - 10 ft. | 12 - 14 ft. | 12 - 14 ft. | 14 - 16 ft. | 18 - 20 ft. | 2 - 4 ft. | 12 - 14 ft. | 14 - 16 ft. |
| Sample Depth | | | | | | | | | | |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | | | | |
| Aluminum | 8320 | 10900 | 9730 | 9340 | 3830 | 7520 | 12000 | 7790 | 19300 J | 12600 |
| Antimony | --- | --- | --- | --- | 1.2 JN | 180 JN | 1.2 JN | 1.1 JN | 0.65 JN | --- |
| Arsenic | 6.3 | 7.7 | 4.5 | 5.6 | 9.0 | 39 | 10 | 15 | 14 J | 6.6 |
| Barium | 28 J | 37 J | 37 J | 52 | 61 | 112 | 43 J | 98 | 69 J | 36 J |
| Beryllium | 0.41 J | 0.56 J | 0.45 J | 0.46 J | 0.25 J | 0.41 J | 0.54 J | 0.52 J | 0.91 J | 0.57 J |
| Cadmium | 0.26 J | 0.21 J | 0.18 J | 0.17 J | 14 | 18 | 1.1 J | 1.1 J | 0.79 J | 0.41 J |
| Calcium | 32500 | 23300 | 31400 | 35900 | 2730 | 9050 | 16900 | 5710 | 2600 J | 2460 |
| Chromium | 13 J | 16 J | 14 J | 19 J | 12 J | 257 J | 129 J | 37 J | 150 J | 33 J |
| Chromium (Hexavalent) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cobalt | 9.9 J | 9.1 J | 9.0 J | 9.1 J | 3.4 J | 5.8 J | 9.7 J | 6.9 J | 15 J | 10 J |
| Copper | 25 | 31 | 25 | 24 | 85 | 201 | 50 | 63 | 54 J | 27 |
| Iron | 24400 | 30600 | 25200 | 25000 | 14800 | 18300 | 29700 | 26500 | 50000 J | 31400 |
| Lead | 15 JN | 14 JN | 10 JN | 11 JN | 115 JN | 506 JN | 86 JN | 191 JN | 90 JN | 23 JN |
| Magnesium | 10200 | 8770 | 10100 | 9940 | 2060 | 5440 | 8280 | 4050 | 9640 J | 6670 |
| Manganese | 667 | 683 | 676 | 1570 | 234 | 246 | 579 | 512 | 634 J | 411 |
| Mercury | --- | --- | --- | --- | 6.7 | 249 | 16 | 2.1 | 3.7 J | 1.8 |
| Nickel | 21 | 22 | 19 | 19 | 12 | 14 | 24 | 19 | 35 J | 24 |
| Potassium | 671 J | 868 J | 697 J | 778 J | 352 JN | 672 J | 930 J | 983 J | 1530 J | 952 JN |
| Selenium | 0.77 JN | 0.50 JN | 0.39 JN | 0.61 JN | 1.0 JN | 0.79 JN | 0.93 JN | 1.3 JN | 1.6 JN | 1.1 JN |
| Silver | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sodium | 51 J | 48 J | 53 J | 58 J | 102 J | 82 J | 70 J | 76 J | 98 J | 79 J |
| Thallium | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vanadium | 9.6 J | 15 | 11 | 12 | 9.3 J | 9.9 J | 15 | 21 | 24 J | 14 J |
| Zinc | 64 | 75 | 66 | 61 | 473 | 2000 | 243 | 253 | 174 J | 88 |
| Cyanide, total | --- | --- | --- | --- | --- | 39 | 2.1 | --- | 1.2 J | --- |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent solids (%) | 93 | 87 | 95 | 85 | 70 | 64 | 72 | 84 | 79 | 57 |
| % TOC | 0.4 JN | 0.3 JN | 0.1 JN | 0.5 JN | 4.1 J | 10 JN | 3.7 JN | 11 J | 3.0 | 8.3 JN |
| Total organic carbon (mg/Kg) | 4180 JN | 3380 JN | 1470 JN | 4580 JN | 41200 J | 10300 JN | 37400 JN | 113000 J | 29700 | 82700 JN |

NOTES: U - not detected, J - estimated value, NC - no criterion, --- - no data.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.

Table 6-6
Three Star Anodizing Site
Wappingers Falls, New York
MGP Site Subsurface Soil Samples (2001)
Inorganic Data

| Sample ID | MW-5 | SB-2 | SB-3-01 | SB-3-01 | SB-3-01 | SB-4-01 | SB-4-01 | SB-4-01 | TP-01 | TP-02 |
|---|---|---|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | (SB-3) | (SB-3) | (SB-3) | (SB-4) | (SB-4) | (SB-4) | | |
| Sample Date | 4/30/2001 | 4/27/2001 | 5/1/2001 | 5/1/2001 | 5/1/2001 | 5/1/2001 | 5/1/2001 | 5/1/2001 | 4/24/2001 | 4/24/2001 |
| Sample Depth | 16 - 18 ft. | 6 - 8 ft. | 8 - 10 ft. | 10 - 14 ft. | 24 - 28 ft. | 6 - 8 ft. | 8 - 8.2 ft. | 10 - 12 ft. | 2 - 4 ft. | 3 - 5 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | | | | |
| Aluminum | 8180 | 11500 | 11500 | 10400 | 8120 | 8090 | 11900 | 9890 | 9780 | 14700 |
| Antimony | --- | --- | --- | 0.34 JN | --- | 2.5 JN | --- | 0.56 JN | --- | --- |
| Arsenic | 3.9 | 7.8 | 5.8 | 5.3 | 4.1 | 13 | 7.4 | 6.8 | 4.8 | 6.6 |
| Barium | 36 J | 36 J | 56 | 50 | 38 J | 160 | 175 | 149 | 36 J | 45 J |
| Beryllium | 0.41 J | 0.55 J | 0.52 J | 0.47 J | 0.38 J | 0.41 J | 0.52 J | 0.47 J | 0.50 J | 0.67 J |
| Cadmium | 0.22 J | 0.24 J | 0.22 J | 0.23 J | 0.15 J | 0.62 J | 0.34 J | 0.27 J | 0.18 J | 0.30 J |
| Calcium | 3210 | 19900 | 32200 | 28700 | 55400 | 37600 | 44000 | 45500 | 33400 | 3000 |
| Chromium | 12 J | 16 J | 15 J | 14 J | 14 J | 57 J | 19 J | 23 J | 13 | 17 |
| Chromium (Hexavalent) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cobalt | 6.8 J | 13 | 9.6 J | 9.1 J | 6.9 J | 7.3 J | 6.2 J | 6.1 J | 8.7 J | 11 J |
| Copper | 16 | 29 | 29 | 27 | 18 | 94 | 19 | 25 | 26 | 35 |
| Iron | 18700 | 31200 | 28800 | 27900 | 22300 | 43900 | 37500 | 32200 | 26200 | 37100 |
| Lead | 9.3 JN | 15 JN | 16 JN | 14 JN | 9.5 JN | 1750 JN | 155 JN | 520 JN | 13 | 26 |
| Magnesium | 3620 | 10600 | 12200 | 11000 | 8710 | 10800 | 56100 | 34600 | 11400 | 6510 |
| Manganese | 153 | 972 | 1200 | 1070 | 949 | 1240 | 1180 | 1210 | 632 | 946 |
| Mercury | --- | --- | --- | --- | --- | 1.3 | --- | --- | --- | --- |
| Nickel | 15 | 24 | 21 | 21 | 16 | 18 | 15 | 15 | 19 | 26 |
| Potassium | 695 J | 863 J | 1210 | 951 J | 762 J | 823 J | 815 J | 867 J | 848 J | 730 J |
| Selenium | 1.4 JN | 0.58 JN | 0.76 JN | 0.85 JN | 0.69 JN | 1.5 JN | 0.71 JN | 0.55 JN | 1.1 J | 1.7 |
| Silver | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sodium | 122 J | 51 J | 112 J | 60 J | 50 J | 346 J | 329 J | 551 J | 41 J | 29 J |
| Thallium | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.94 J |
| Vanadium | 9.5 J | 15 | 15 | 13 | 9.8 J | 17 | 19 | 16 | 12 | 17 |
| Zinc | 46 | 82 | 72 | 74 | 51 | 278 | 68 | 81 | 76 | 111 |
| Cyanide, total | --- | --- | --- | --- | --- | 16 | 12 | 11 | --- | --- |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | 0.71 | --- | --- | --- | --- |
| Percent solids (%) | 56 | 92 | 94 | 96 | 94 | 65 | 79 | 78 | 92 | 87 |
| % TOC | 11 JN | 0.4 JN | 0.1 J | 0.2 J | 0.1 J | 8.0 J | 0.8 J | 1.1 J | 0.4 J | 0.4 J |
| Total organic carbon (mg/Kg) | 109000 JN | 4460 JN | 1170 J | 2170 J | 946 J | 79800 | 7970 | 10900 J | 3690 J | 3690 J |

NOTES: U - not detected, J - estimated value, NC - no criterion, --- - no data.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.

# Table 6-6
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Subsurface Soil Samples (2001)
## Inorganic Data

| Sample ID | TP-03 | TP-04 | TP-04 Cinders | TP-05 | TP-05 | TP-06 | TP-12 |
|---|---|---|---|---|---|---|---|
| Location Cross Reference | | | | | | | |
| Sample Date | 4/24/2001 | 4/24/2001 | 4/24/2001 | 4/24/2001 | 4/24/2001 | 4/24/2001 | 4/25/2001 |
| Sample Depth | 6 - 8 ft. | 0.5 - 2.5 ft. | | 4 - 6 ft. | 9.5 - 10.5 ft. | 5 - 7 ft. | 0 - 2 ft. |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Compound | | | | | | | |
| Aluminum | 9910 | 12200 | 12300 | 5840 | 11900 | 9880 | 9080 |
| Antimony | --- | 1.1 JN | --- | --- | --- | 0.78 JN | --- |
| Arsenic | 5.5 | 5.3 | 5.1 | 8.8 | 3.6 | 10 | 6.3 |
| Barium | 30 J | 41 J | 27 J | 65 | 69 | 80 | 77 |
| Beryllium | 0.48 J | 0.53 J | 0.49 J | 0.42 J | 0.59 J | 0.46 J | 0.44 J |
| Cadmium | 0.24 J | 0.78 J | 0.25 J | 0.27 J | 0.31 J | 2.9 | 0.23 J |
| Calcium | 5450 | 2940 | 741 J | 5040 | 2190 | 10600 | 5690 |
| Chromium | 14 | 21 | 19 | 8.2 | 30 | 16 | 12 |
| Chromium (Hexavalent) | --- | --- | --- | --- | --- | --- | --- |
| Cobalt | 9.8 J | 7.2 J | 5.9 J | 5.5 J | 8.4 J | 7.9 J | 5.7 J |
| Copper | 30 | 38 | 26 | 29 | 32 | 85 | 22 |
| Iron | 27300 | 30200 | 30600 | 15100 | 26500 | 29100 | 20200 |
| Lead | 13 | 53 | 12 | 80 | 101 | 242 | 27 |
| Magnesium | 6150 | 6420 | 6370 | 2100 | 4840 | 7530 | 3680 |
| Manganese | 765 | 520 | 382 | 249 | 905 | 580 | 408 JN |
| Mercury | --- | 0.24 | --- | --- | --- | 0.29 | --- |
| Nickel | 21 | 22 | 22 | 16 | 19 | 20 | 15 |
| Potassium | 814 J | 808 J | 957 J | 484 J | 622 J | 588 J | 673 J |
| Selenium | 0.81 J | 1.1 | 0.98 J | 0.58 J | 1.5 | 1.6 | 0.80 J |
| Silver | --- | --- | --- | --- | --- | --- | --- |
| Sodium | 79 J | 36 J | 23 J | 155 J | 44 J | 61 J | 142 J |
| Thallium | --- | --- | 0.98 J | --- | --- | --- | --- |
| Vanadium | 13 | 17 | 15 | 13 | 14 | 14 | 41 |
| Zinc | 85 | 114 | 74 | 132 | 67 | 272 | 62 |
| Cyanide, total | --- | --- | --- | --- | --- | --- | 0.67 |
| Cyanide, amenable to chlorination | --- | --- | --- | --- | --- | --- | --- |
| Percent solids (%) | 89 | 91 | 96 | 81 | 77 | 89 | 90 |
| % TOC | 0.3 J | 1.7 J | 5.3 J | 9.5 J | 4.2 J | 6.7 J | 3.1 JN |
| Total organic carbon (mg/Kg) | 3180 J | 16500 J | 53100 J | 94500 J | 42400 J | 67400 J | 30700 JN |

NOTES: U - not detected. J - estimated value. NC - no criterion, --- - no data.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.

# Table 6-7
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Shallow Ground Water Samples
## Detected Volotile Organic Compound Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br>ug/L | MW-2<br>05/16/01<br>ug/L | MW-2<br>12/08/02<br>ug/L | MW-3<br>05/16/01<br>ug/L | MW-3<br>12/08/02<br>ug/L | MW-4<br>05/16/01<br>ug/L | MW-4<br>12/08/02<br>ug/L |
|---|---|---|---|---|---|---|---|
| Vinyl chloride | 2 | [20 ] | [24 ] | [8 J] | [3 J] | --- | [8 J] |
| Methylene chloride | 5* | --- | --- | 2 J | --- | --- | --- |
| 1,1-Dichloroethane | 5* | 2 J | 3 J | --- | --- | --- | 0.8 J |
| cis-1,2-Dichloroethene | NC | 67 | 110 | 16 | 8 J | 2 J | 3 J |
| Trichloroethene | 5* | [8 J] | [17 ] | --- | 0.6 J | --- | 0.8 J |
| Benzene | 1 | --- | 0.5 J | --- | --- | [3 J] | [2 J] |
| Tetrachloroethene | 5* | --- | 1 J | --- | --- | --- | --- |
| Chlorobenzene | 5* | --- | --- | 1 J | --- | --- | --- |
| Ethylbenzene | 5* | --- | --- | --- | --- | 3 J | --- |
| Xylene (total) | 5* | --- | --- | --- | --- | 2 J | --- |
| Total BTEX | NC | --- | 0.5 | --- | --- | 8.0 | 2.0 |
| Total VOCs | NC | 97 | 160 | 27 | 12 | 10 | 15 |
| Total Chlorinated VOCs | NC | 97 | 160 | 26 | 12 | 2.0 | 13 |

NOTES: J - estimated value, NC = no criterion, --- - analyte not detected. RE - indicates results are from lab re-analysis of sample. Table includes only those wells for which volatile organic compounds were detected.
Samples analyzed by methods NY ASP 95-1. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.
* indicates a compound that was identified as a principle organic contaminant class, but does not have a specific maximum contaminant level.
[ ] - exceeds Ground Water screening criterion.



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FXP File: Q:\10653_NYSDEC\27258_THREESTAR\PH2TABLEPR.FXP

Table 6-7
Three Star Anodizing Site
Wappingers Falls, New York
MGP Site Shallow Ground Water Samples
Detected Volotile Organic Compound Concentrations Compared to Screening Values

| Sample ID | Ground Water | MW-5 |
|---|---|---|
| Location Cross Reference | Screening | |
| Sample Date | Criteria | 05/16/01 |
| Sample Depth | | |
| Units | ug/L | ug/L |
| Compound | | |
| Vinyl chloride | 2 | --- |
| Methylene chloride | 5* | 1 J |
| 1,1-Dichloroethane | 5* | --- |
| cis-1,2-Dichloroethene | NC | --- |
| Trichloroethene | 5* | --- |
| Benzene | 1 | --- |
| Tetrachloroethene | 5* | --- |
| Chlorobenzene | 5* | --- |
| Ethylbenzene | 5* | --- |
| Xylene (total) | 5* | --- |
| Total BTEX | NC | --- |
| Total VOCs | NC | 1.0 |
| Total Chlorinated VOCs | NC | 1.0 |

NOTES: J - estimated value, NC = no criterion, --- - analyte not detected. RE - indicates results are from lab re-analysis of sample. Table includes only those wells for which volatile organic compounds were detected.
Samples analyzed by methods NY ASP 95-1. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.
* indicates a compound that was identified as a principle organic contaminant class, but does not have a specific maximum contaminant level.
[ ] - exceeds Ground Water screening criterion.



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Table 6-8
Three Star Anodizing Site
Wappingers Falls, New York
MGP Site Shallow Ground Water Samples
Detected Semivolotile Organic Compound Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria<br>ug/L | MW-4<br>05/16/01<br>ug/L | MW-4<br>12/08/02<br>ug/L | MW-5<br>12/08/02<br>ug/L |
|---|---|---|---|---|
| Naphthalene | 10 G | --- | [28 ] | --- |
| 2-Methylnaphthalene | NC | --- | 4 J | --- |
| Acenaphthylene | NC | --- | --- | 2 J |
| Acenaphthene | NC | 32 | 31 | 7 J |
| Dibenzofuran | NC | 8 J | 9 J | 6 J |
| Fluorene | 50G | 7 J | 12 | 6 J |
| Phenanthrene | 50G | --- | 19 | 12 |
| Anthracene | 50 | 3 J | 7 J | 2 J |
| Carbazole | NC | 11 | 6 J | 3 J |
| Fluoranthene | 50G | 5 J | 27 | 8 J |
| Pyrene | 50G | 3 J | 21 | 6 J |
| Benzo(a)anthracene | 0.002G | --- | [9 J] | [2 J] |
| Chrysene | 0.002G | --- | [9 J] | [2 J] |
| Bis(2-ethylhexyl)phthalate (BEHP) | 5 | --- | 1 J | 1 J |
| Benzo(b)fluoranthene | 0.002G | --- | [8 J] | [2 J] |
| Benzo(k)fluoranthene | 0.002G | --- | [3 J] | --- |
| Benzo[a]pyrene | NC | --- | 6 J | 2 J |
| Indeno(1,2,3-cd)pyrene | 0.002G | --- | [2 J] | --- |
| Benzo(ghi)perylene | NC | --- | 2 J | --- |
| Total PAHs | NC | 50 | 188 | 51 |
| Total SVOCs | NC | 69 | 204 | 61 |

NOTES: J - estimated value, NC = no criterion, --- - analyte not detected. Table includes only those wells for which semivolatile organic compounds were detected.
Samples analyzed by method NY ASP 95-2. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.
* indicates a compound that was identified as a principle organic contaminant class, but does not have a specific maximum contaminant level.
[ ] - exceeds Ground Water screening criterion.



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FXP File: Q:\10653_NYSDEC\27258_THREESTAR\PH2TABLEPR.FXP

File Number: 10653.27258

# Table 6-9
## Three Star Anodizing Site
## Wappingers Falls, New York
## MGP Site Shallow Ground Water Samples
## Inorganic Concentrations Compared to Screening Values

| Sample ID<br>Location Cross Reference<br>Sample Date<br>Sample Depth<br>Units<br>Compound | Ground Water Screening Criteria | MW-2<br><br>05/16/01<br><br>ug/L | MW-3<br><br>05/16/01<br><br>ug/L | MW-4<br><br>05/16/01<br><br>ug/L | MW-5<br><br>05/16/01<br><br>ug/L |
|---|---|---|---|---|---|
| Aluminum | NC | 61 J | 3200 | 27 J | 75 J |
| Antimony | 3.0 | --- | --- | [15 J] | --- |
| Arsenic | 25 | --- | 3.50 J | 4.60 J | --- |
| Barium | 1000 | 33 J | 72 J | 89 J | 46 J |
| Beryllium | 3.0 | --- | 0.64 J | --- | --- |
| Calcium | NC | 93000 | 89000 | 59000 | 90000 |
| Chromium | 50 | 2.80 J | 11 | 2.80 J | 6.00 J |
| Cobalt | NC | --- | 7.50 J | --- | --- |
| Copper | 200 | --- | 14 J | --- | 1.60 J |
| Iron | 300 | 92 J | [6500 ] | 160 | 86 J |
| Lead | 25 | 0.74 J | 15 | --- | 1.80 J |
| Magnesium | 35 | [23000 ] | [21000 ] | [11000 ] | [18000 ] |
| Manganese | 300 | [580 J] | [2200 J] | 250 J | 25 J |
| Nickel | 100 | 2.50 J | 8.70 J | 1.70 J | 1.20 J |
| Potassium | NC | 2200 J | 15000 | 1200 J | 2200 J |
| Silver | 50 | --- | --- | 0.94 J | --- |
| Sodium | 20000 | 19000 | [78000 ] | [27000 ] | [27000 ] |
| Vanadium | NC | --- | 4.60 J | 0.59 J | 0.58 J |
| Zinc | 2000 | 1.50 J | 26 | 130 | 4.60 J |
| Cyanide, total | 200 | --- | --- | --- | 14 |
| Total suspended solids (mg/L) | NC | --- | 200 | --- | 6 |

NOTES: J - estimated value, NC = no criterion, --- - analyte not detected.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening criteria obtained from NYSDEC (1998) TOGS 1.1.1. Standards are presented, except those values noted with a 'G' indicating guidance values.
[ ] - exceeds ground water screening criterion.

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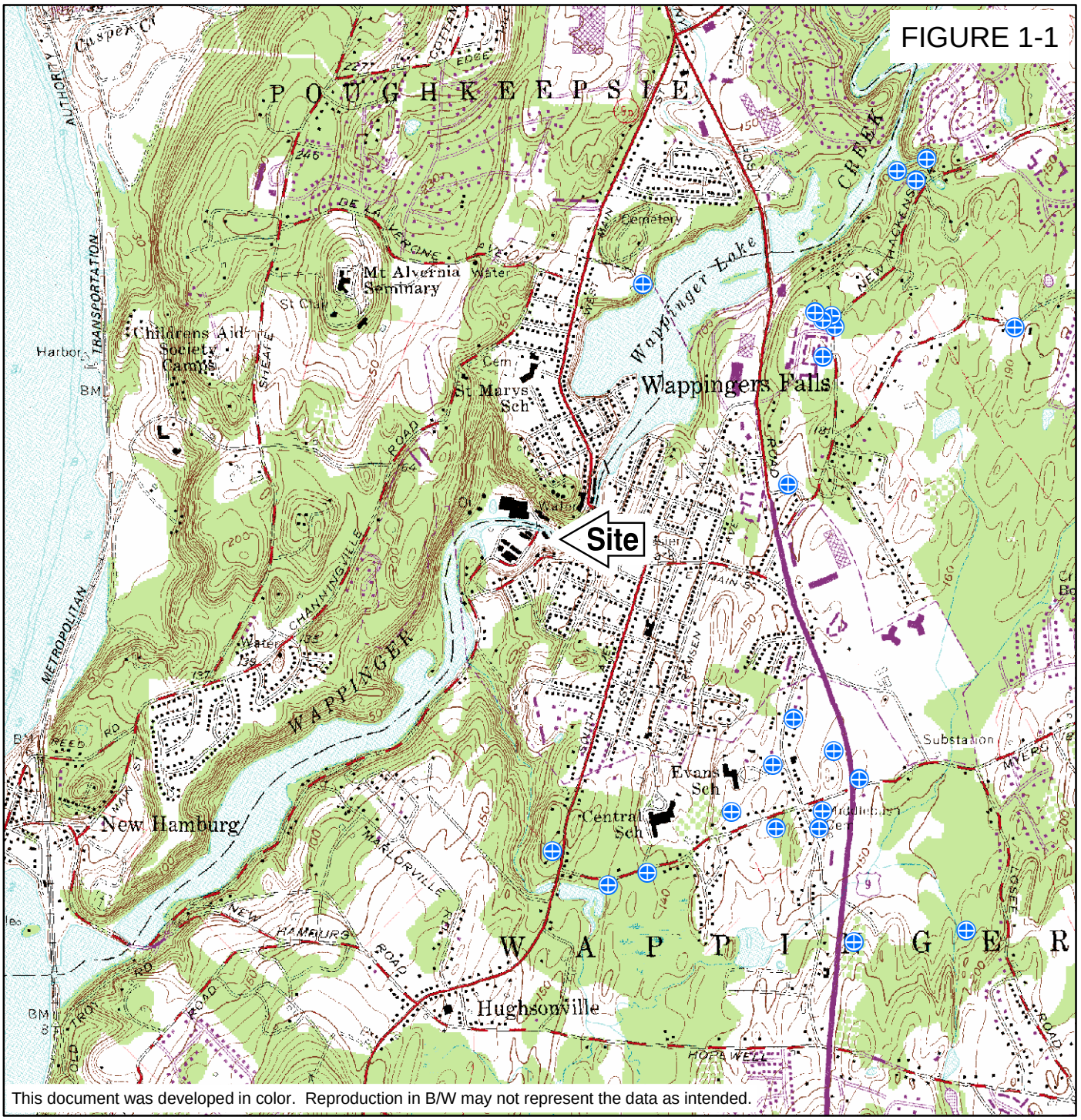


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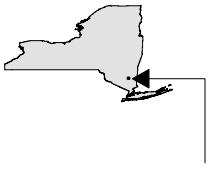
PLOT DATE: 09/25/06 DIV. 732 JPS

ADAPTED FROM: WAPPINGER FALLS,NY USGS QUADRANGLE



QUADRANGLE LOCATION

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

**LEGEND**

PUBLIC WATER SUPPLY WELL

# SITE LOCATION

0 1,000 2,000 4,000 6,000 8,000

Feet

FILE NO.: 10653.27258
OCTOBER 2007

1:24,000



O'BRIEN & GERE ENGINEERS, INC.

FIGURE 1–2

Key to building uses at the site.

| *Building No.* | *Company* | *Description of activities* |
|---|---|---|
| P | Page Print | printing, including photographic |
| 11 | Dutchess Bleachery<br>J. L. Rie Co. | boiler house, auto parking<br>injection molding – plastics |
| 12 | Dutchess Bleachery<br>J.L. Rie Co. | case storage<br>injection molding – plastics |
| 15 | Dutchess Bleachery<br><br>Three Star Anodizing | lapping, packaging<br>sewing, sheet tearing, case storage<br>paper storage |
| 16 | Dutchess Bleachery<br>Three Star Anodizing | store house<br>metal anodizing |
| 17 | Dutchess Bleachery<br>Three Star Anodizing | store house<br>metal anodizing |
| 21 | Dutchess Bleachery<br>Three Star Anodizing<br>Sears Mail Order | salvage department, paper storage<br>miscellaneous storage<br>mail order store |
| 22 | Dutchess Bleachery<br><br>Three Star Anodizing | miscellaneous storage<br>auto parking<br>miscellaneous storage |
| A-C | Axton-Cross<br>Fabricare | chemical storage and repackaging<br>unknown |

Some other industrial uses at site:
coal storage, and felt hat, ammunition, and leather manufacturing.

References: Sanborn maps 1945 and 1960; EA 1986; Popper 1991.

LEGEND

21 BUILDING IDENTIFICATION

(11) FORMER BUILDING LOCATION

SUSPECTED FILL AREAS

FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

SITE LOCATION

100 0 100
1"=100'

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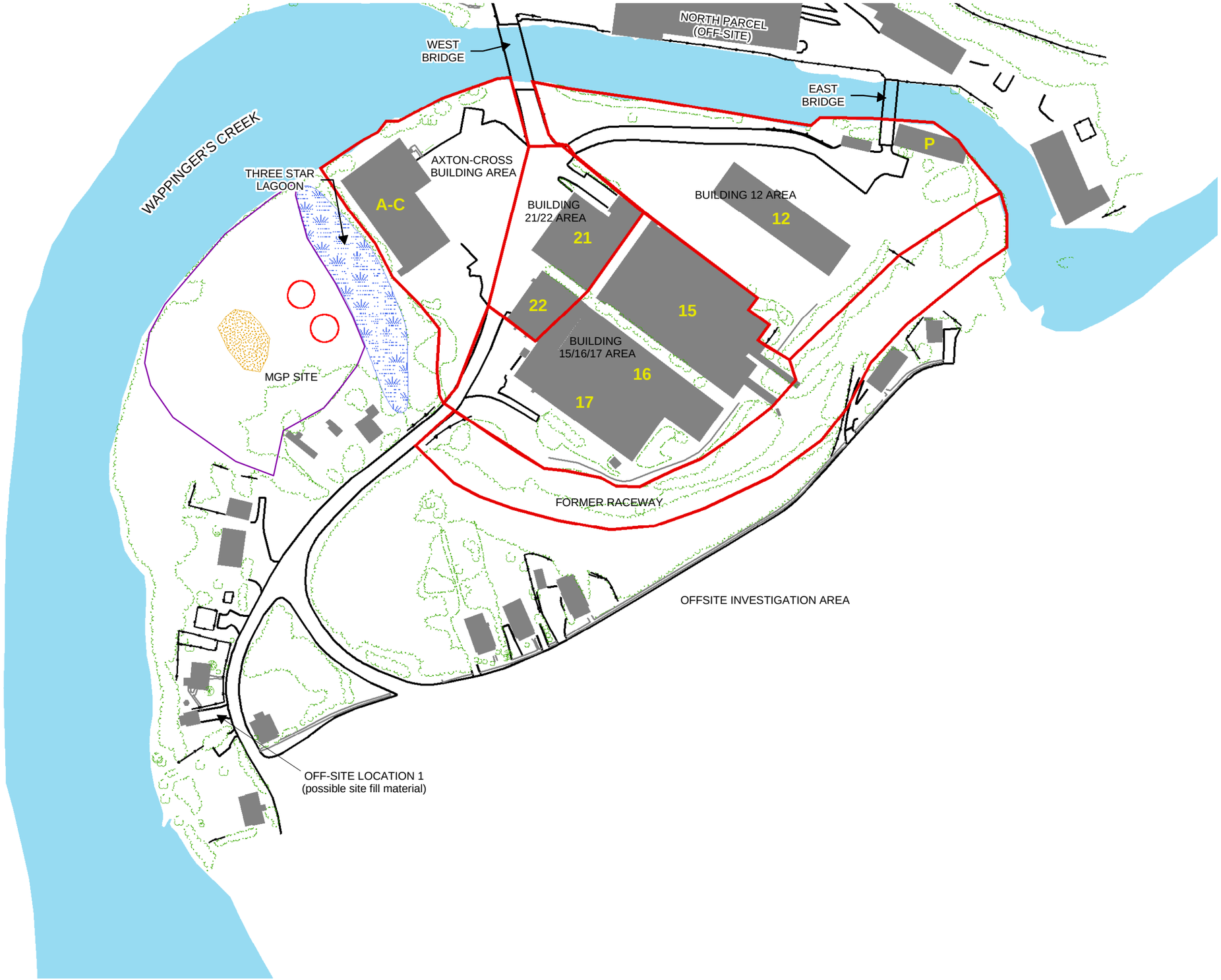
9/26/2007 DIV 71 LSR

# FIGURE 1-3




## Legend

- DEBRIS
- MAIN SITE INVESTIGATION AREA
- MGP SITE BOUNDARY
- FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## INVESTIGATION AREAS

0 50 100 200 300
Feet

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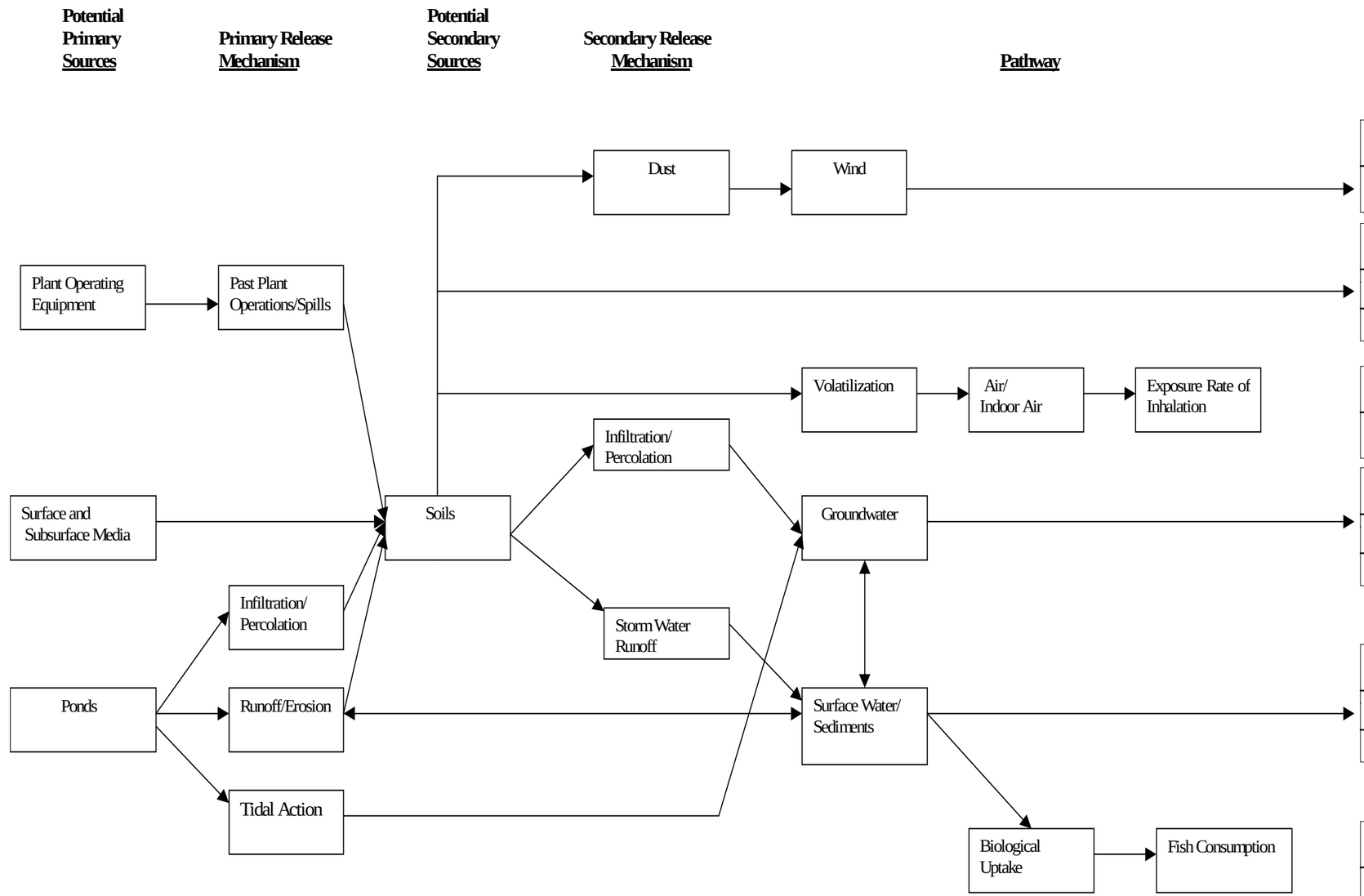
# FIGURE 1-4




| Exposure Route | Human | Biota: Terrestrial | Biota: Aquatic |
|---|---|---|---|
| Inhalation | • | • | |

| Exposure Route | Human | Biota: Terrestrial | Biota: Aquatic |
|---|---|---|---|
| Ingestion | • | • | |
| Dermal Contact | • | • | |

| Exposure Route | Human | Biota: Terrestrial | Biota: Aquatic |
|---|---|---|---|
| Inhalation | • | | |

| Exposure Route | Human | Biota: Terrestrial | Biota: Aquatic |
|---|---|---|---|
| Ingestion | • | | |
| Dermal Contact | • | | |

| Exposure Route | Human | Biota: Terrestrial | Biota: Aquatic |
|---|---|---|---|
| Ingestion | • | • | • |
| Dermal Contact | • | • | • |

| Exposure Route | Human | Biota: Terrestrial | Biota: Aquatic |
|---|---|---|---|
| Ingestion | • | • | • |

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\\GEMINI\ALT\SYRACUSE\DIV82\PROJECTS\10653\27258\4_notes\Figure 1-3.doc

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## CONCEPTUAL SITE MODEL

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# FIGURE 2-1

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## Legend

**PHASE II SAMPLES**

- SURFACE SOIL

**PHASE 1 SAMPLES**

- SURFACE SOIL
- DRY WELL
- BENCHMARK
- MONITORING WELL
- TEST PIT
- DEBRIS
- FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
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THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## SURFACE SOIL INVESTIGATION SAMPLE LOCATIONS

0 50 100 200 300
Feet

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PLOT DATE: 6/18/03 JPS DIV. 82

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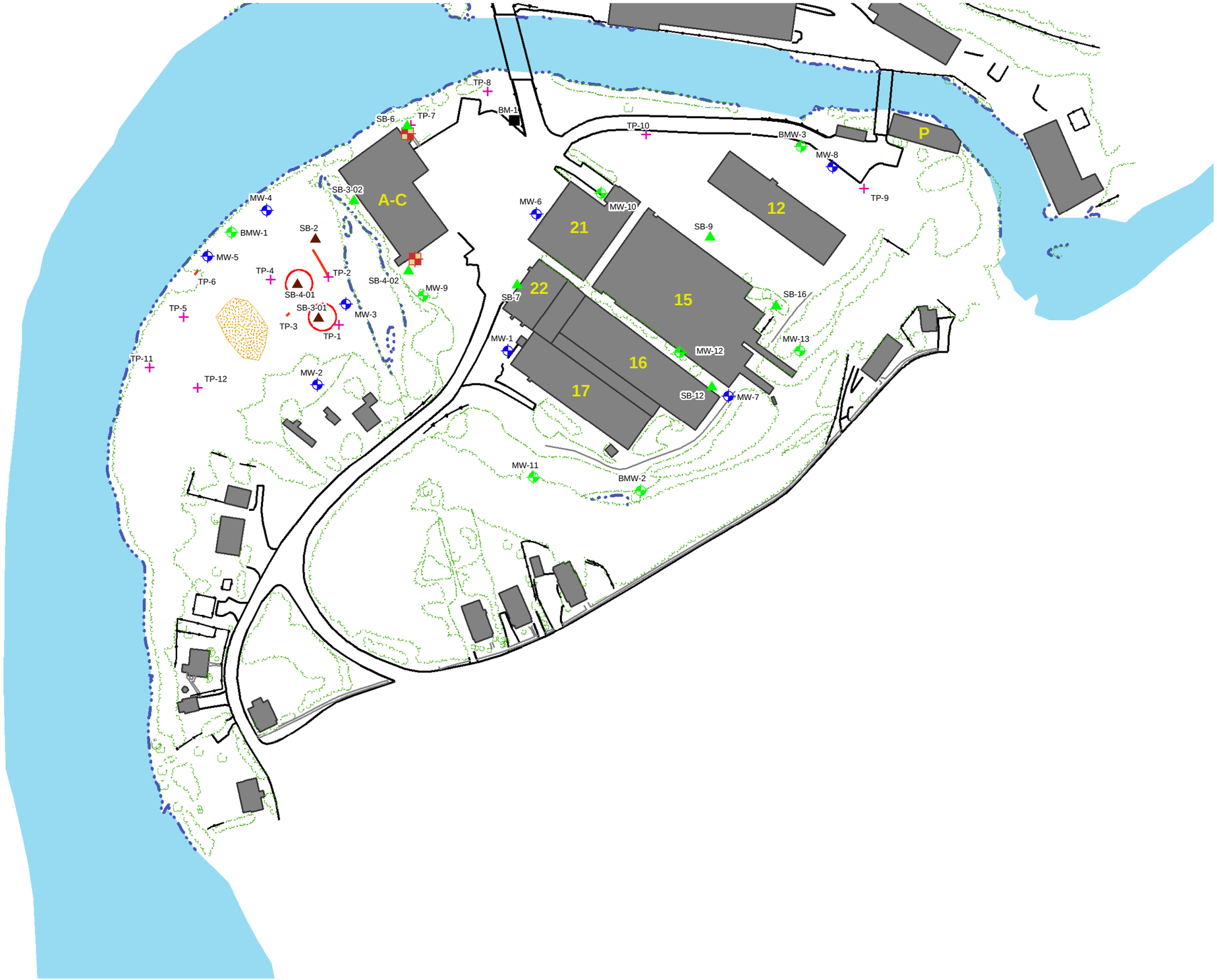


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# FIGURE 2-2

## Legend

**PHASE I SAMPLES**

- MONITORING WELL
- SOIL BORING
- TEST PIT SAMPLE
- DRY WELL
- BENCHMARK

**PHASE II SAMPLES**

- MONITORING WELL
- SOIL BORING
- DEBRIS
- FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

# SUBSURFACE INVESTIGATION SAMPLE LOCATIONS

0 50 100 200 300
Feet

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FIGURE 3-1

LEGEND

DRAINAGE DIRECTION (DASHED WHERE INFERRED)

FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NY

SITE DRAINAGE

NOT TO SCALE

FILE NO. 10653.27258
OCTOBER 2007

O'BRIEN & GERE ENGINEERS, INC.

# FIGURE 3-2

## Legend

**PHASE I SAMPLES**

- MONITORING WELL
- SOIL BORING
- TEST PIT SAMPLE
- DRY WELL
- BENCHMARK

**PHASE II SAMPLES**

- MONITORING WELL
- SOIL BORING
- DEBRIS
- GEOLOGIC CROSS SECTION
- FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## GEOLOGIC CROSS SECTION LOCATIONS

0 50 100 200 300
Feet

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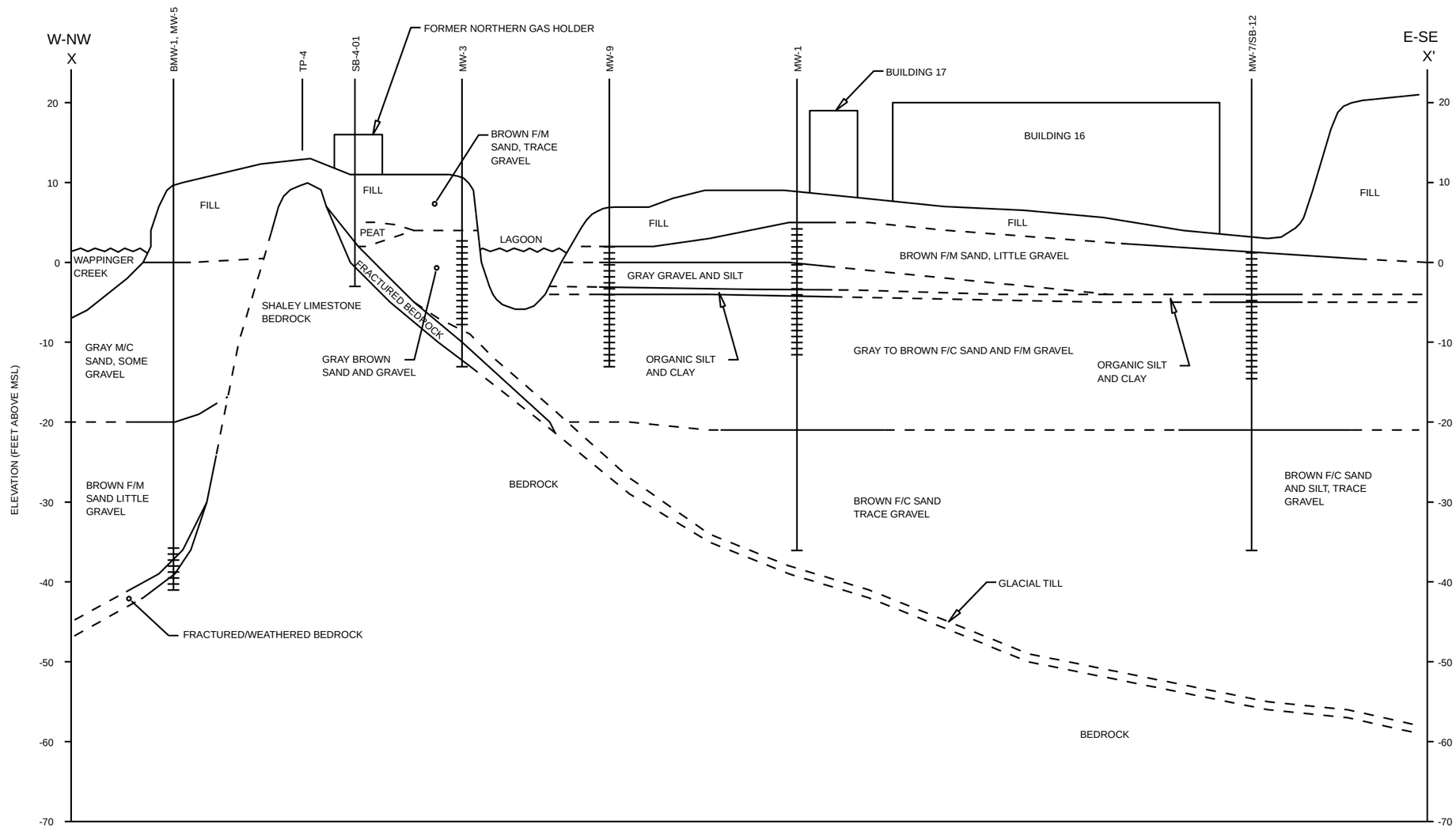
# FIGURE 3-3




## LEGEND

**MW-** MONITORING WELL

**SB-** SOIL BORING

SCREENED INTERVAL

LITHOLOGIC CONTACT
(dashed where inferred)

**PARTICLE SIZE**

F - FINE

M - MEDIUM

C - COARSE

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

# GEOLOGIC CROSS-SECTION (X-X')

0 7.5 15 30
Feet

HORIZONTAL SCALE

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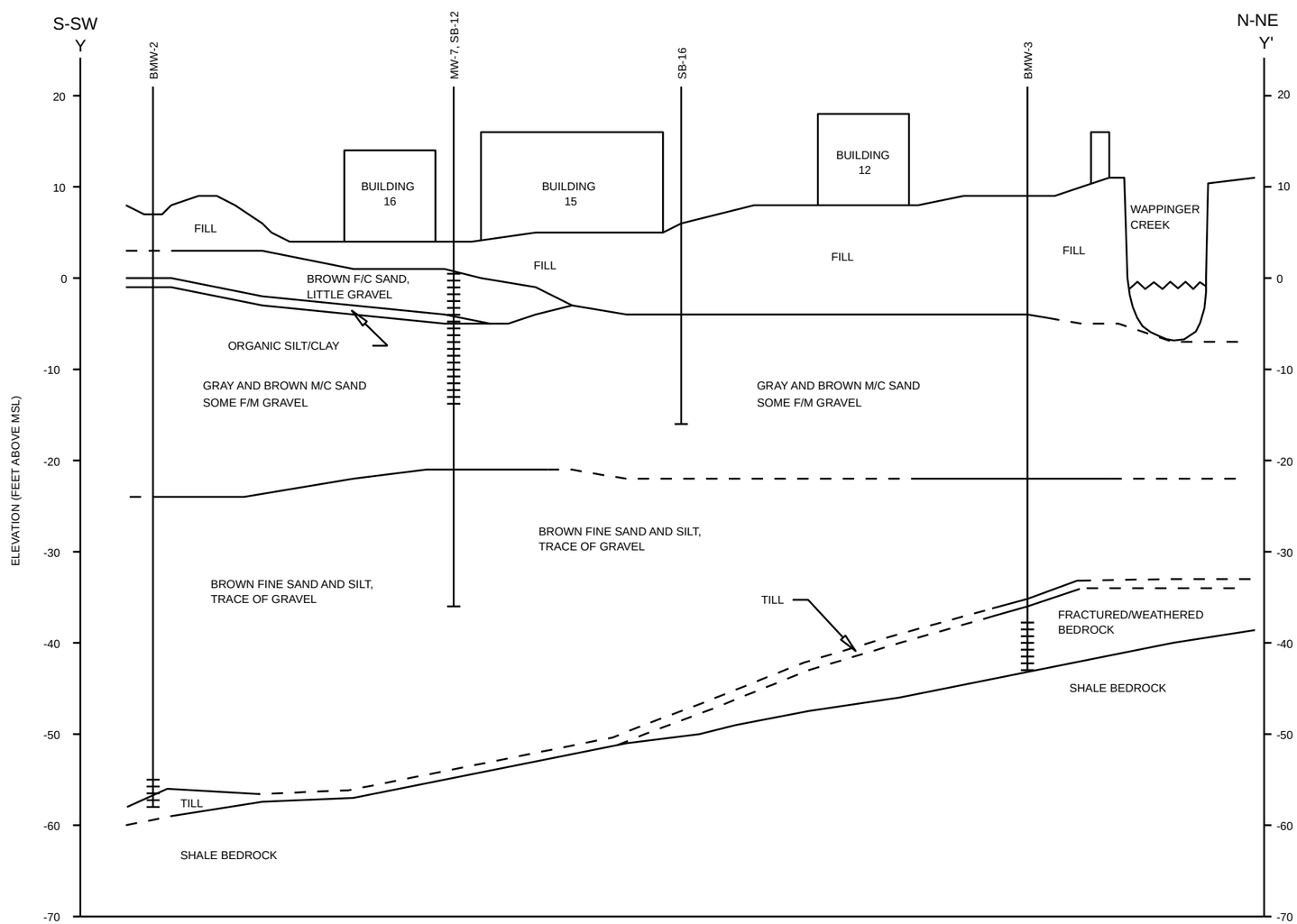
# FIGURE 3-4




## LEGEND

**MW-** MONITORING WELL

**SB-** SOIL BORING

SCREENED INTERVAL

LITHOLOGIC CONTACT
(dashed where inferred)

**PARTICLE SIZE**

F - FINE

M - MEDIUM

C - COARSE

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

# GEOLOGIC CROSS-SECTION (Y-Y')

0 7.5 15 30
Feet
HORIZONTAL SCALE

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# FIGURE 3-5

**TOP OF BEDROCK ELEVATION DATA (ft MSL)**

| | |
|---|---|
| BMW-2 - | -59 |
| BMW-3 - | -43 |
| SB-4-02 - | -9.85 |
| SB-3-01 - | -13.1 |
| SB-4-01 - | 2.5 |
| SB-2 - | 9.5 |
| TP-4 - | 10.5 |
| BMW-1 - | -41.6 |

NOTE:
SAMPLES USED FOR TOP OF BEDROCK ELEVATIONS AT MEAN SEA LEVEL (MSL) ARE MARKED WITH BLUE TEXT.

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## Legend

**TOP OF BEDROCK CONTOURS**

- 10 ft
- 5 ft

**PHASE I SAMPLES**

- MONITORING WELL
- SOIL BORING
- TEST PIT SAMPLE
- DRY WELL
- BENCHMARK

**PHASE II SAMPLES**

- MONITORING WELL
- SOIL BORING
- DEBRIS
- FORMER GAS HOLDER

NEW YORK STATE
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THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## TOP OF BEDROCK ELEVATION

0 50 100 200 300
Feet

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10653.27258

O'BRIEN & GERE ENGINEERS, INC.

PLOT DATE: 9/25/07 DIV 71 LSR

# FIGURE 3-6

## Legend

**PHASE I SAMPLES**

- MONITORING WELL
- SOIL BORING
- TEST PIT SAMPLE
- DRY WELL
- BENCHMARK

**PHASE II SAMPLES**

- MONITORING WELL
- SOIL BORING
- DEBRIS
- GROUND WATER ELEVATION
- (1.40) GROUND WATER POINT ELEVATION
- FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## SHALLOW GROUND WATER FLOW AT HIGH TIDE

0 50 100 200 300
Feet

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# FIGURE 3-7

## Legend

**PHASE I SAMPLES**

- MONITORING WELL
- SOIL BORING
- TEST PIT SAMPLE
- DRY WELL
- BENCHMARK

**PHASE II SAMPLES**

- MONITORING WELL
- SOIL BORING
- DEBRIS

**GROUND WATER ELEVATION**

- 1 ft
- 0.2 ft
- (1.40) GROUND WATER POINT ELEVATION
- FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## SHALLOW GROUND WATER FLOW AT LOW TIDE

0 50 100 200 300
Feet

OCTOBER 2007
10653.27258

O'BRIEN & GERE ENGINEERS, INC.

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PLOT DATE: 9/25/07 DIV 71 LSR

# FIGURE 3-8

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## Legend

**PHASE I SAMPLES**

- MONITORING WELL
- SOIL BORING
- TEST PIT SAMPLE
- DRY WELL
- BENCHMARK

**PHASE II SAMPLES**

- MONITORING WELL
- SOIL BORING
- DEBRIS
- GROUND WATER ELEVATION
- (1.40) GROUND WATER POINT ELEVATION
- FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## DEEP GROUND WATER FLOW AT HIGH TIDE

0 50 100 200 300
Feet

OCTOBER 2007
10653.27258

O'BRIEN & GERE ENGINEERS, INC.

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PLOT DATE: 9/25/07 DIV 71 LSR

# FIGURE 3-9

## Legend

**PHASE I SAMPLES**

- MONITORING WELL
- SOIL BORING
- TEST PIT SAMPLE
- DRY WELL
- BENCHMARK

**PHASE II SAMPLES**

- MONITORING WELL
- SOIL BORING
- DEBRIS
- GROUND WATER ELEVATION
- (1.40) GROUND WATER POINT ELEVATION
- FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## DEEP GROUND WATER FLOW AT LOW TIDE

0 50 100 200 300
Feet

OCTOBER 2007
10653.27258

O'BRIEN & GERE ENGINEERS, INC.

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PLOT DATE: 9/25/07 DIV 71 LSR

Oct 25, 2007 – 8:00am

**SS-MGP7**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| tPAHs | Ind | Ind | **140** | **77** |
| Sb | NS | (0.6) | 1.2 | 3.2 |
| As | 16 | 13 | -- | 14 |
| Cd | 9.3 | 2.5 | 2.1 | 3.2 |
| Cu | 270 | 50 | 124 | 148 |
| Pb | 1000 | 63 | 244 | 310 |
| Hg | 2.8 | 0.18 | 0.67 | 1.1 |
| Ni | 310 | 30 | 36 | -- |
| Zn | 10000 | 109 | 396 | 392 |

**SS-11**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| PCE | 150 | 1.3 | -- | 43 |
| Sb | NS | (0.6) | 0.7 | -- |
| Cr | 1500 | 30 | 77 | 70 |
| Cu | 270 | 50 | 115 | -- |
| Pb | 1000 | 63 | 75 | 79 |
| Hg | 2.8 | 0.18 | 0.5 | 2.7 |
| Ni | 310 | 30 | **2310** | 51 |
| Zn | 10000 | 109 | 184 | -- |

**SS-12**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 1.4 ft |
|---|---|---|---|---|
| Sb | NS | (0.6) | 1 | -- |
| Pb | 1000 | 63 | 90 | -- |
| Hg | 2.8 | 0.18 | 0.41 | 0.2 |
| Ni | 310 | 30 | 34 | 35 |
| Zn | 10000 | 109 | 160 | -- |

**SS-09**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 1.3 ft |
|---|---|---|---|---|
| Sb | NS | (0.6) | -- | 1.3 |
| Cd | 9.3 | 2.5 | 7.9 | -- |
| Pb | 1000 | 63 | -- | 125 |
| Hg | 2.8 | 0.18 | 0.18 | 0.34 |
| Zn | 10000 | 109 | | 119 |

**SS-15**

Screening Values

| Parameter | Commercial | Unrestrict | Surface |
|---|---|---|---|
| Sb | NS | 0.6 | 1 |
| Hg | 2.8 | 0.18 | 0.38 |

**SS-16**

Screening Values

| Parameter | Commercial | Unrestrict | 0.3 to 0.4 ft |
|---|---|---|---|
| No data above screening values | | | |

**SS-13**

Screening Values

| Parameter | Commercial | Unrestrict | Surface |
|---|---|---|---|
| tPAH | Ind | Ind | **834** |
| Sb | NS | (0.6) | 2.6 |
| Cu | 270 | 50 | 75 |
| Pb | 1000 | 63 | 224 |
| Hg | 2.8 | 0.18 | 0.95 |
| Ni | 310 | 30 | 39 |
| Zn | 10000 | 109 | 451 |

**SS-14**

Screening Values

| Parameter | Commercial | Unrestrict | Surface |
|---|---|---|---|
| tPAHs | Ind | Ind | **109** |
| Sb | NS | (0.6) | 7.4 |
| As | 16 | 13 | 14 |
| Cd | 9.3 | 2.5 | 2.8 |
| Cr | 1500 | 30 | 31 |
| Cu | 270 | 50 | **441** |
| Pb | 1000 | 63 | 666 |
| Hg | 2.8 | 0.18 | 0.94 |
| Ni | 310 | 30 | 40 |
| Zn | 10000 | 109 | 752 |

**SS-MGP6**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| tPAHs | Ind | Ind | 10 | **227** |
| Cu | 270 | 50 | 63 | 59 |
| Pb | 1000 | 63 | 97 | 100 |
| Hg | 2.8 | 0.18 | 0.20 | 0.21 |
| Ni | 310 | 30 | 34 | -- |
| Zn | 10000 | 109 | 146 | 148 |

**TP-04**

Screening Values

| Parameter | Commercial | Unrestrict | 0.5 to 2.5 ft | Cinders |
|---|---|---|---|---|
| tPAHs | Ind | Ind | **425** | **1670** |
| Sb | NS | (0.6) | 1.1 | -- |
| Hg | 2.8 | 0.18 | 0.24 | -- |
| Zn | 10000 | 109 | 114 | -- |

**SS-MGP3**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| tPAHs | Ind | Ind | **67** | **129** |
| Sb | NS | (0.6) | 0.7 | 1.3 |
| Cd | 9.3 | 2.5 | 5.7 | 2.9 |
| Cu | 270 | 50 | 111 | 141 |
| Pb | 1000 | 63 | 225 | 223 |
| Hg | 2.8 | 0.18 | 1.4 | 1.3 |
| Ni | 310 | 30 | 39 | 35 |
| Zn | 10000 | 109 | 263 | 263 |

**SS-MGP2**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| tPAHs | Ind | Ind | -- | **133** |
| Sb | NS | (0.6) | 4.3 | -- |
| As | 16 | 13 | 41 | 18 |
| Cd | 9.3 | 2.5 | 55 | 4.3 |
| Cr | 1500 | 30 | 158 | -- |
| Cr (hex) | 400 | 1 | 12 | -- |
| Cu | 270 | 50 | 73 | 94 |
| Pb | 1000 | 63 | 462 | 266 |
| Hg | 2.8 | 0.18 | 2.3 | 1.0 |
| Ni | 310 | 30 | 30 | -- |
| Zn | 10000 | 109 | 606 | 456 |

**TP-12**

Screening Values

| Parameter | Commercial | Unrestrict | 0 to 2 ft |
|---|---|---|---|
| tPAHs | Ind | Ind | **235** |

**SS-MGP1**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| tPAHs | Ind | Ind | 11 | -- |
| Sb | NS | (0.6) | -- | 1.2 |
| As | 16 | 13 | 14 | **37** |
| Cd | 9.3 | 2.5 | 7.2 | 5.7 |
| Cr | 1500 | 30 | -- | 85 |
| Cr (Hex) | 400 | 1 | 12 | -- |
| Cu | 270 | 50 | 102 | 94 |
| Pb | 1000 | 63 | **1160** | 184 |
| Hg | 2.8 | 0.18 | 1.5 | 0.26 |
| Ni | 310 | 30 | 31 | -- |
| Zn | 10000 | 109 | 2570 | 236 |

**SS-MGP4**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| No data above screning values | | | | |

**SS-MGP5**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| Hg | 2.8 | 0.18 | -- | 0.21 |
| Zn | 10000 | 109 | 126 | 122 |

**SS-10**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 1 to 1.2 ft |
|---|---|---|---|---|
| tPAHs | Ind | Ind | ns | 13 |
| Sb | NS | (0.6) | ns | 1.1 |
| Cd | 9.3 | 2.5 | ns | 2.9 |
| Cr | 1500 | 30 | ns | 118 |
| Cu | 270 | 50 | ns | 99 |
| Pb | 1000 | 63 | ns | 120 |
| Hg | 2.8 | 0.18 | ns | **31** |
| Ag | 1500 | 2 | ns | 6.3 |
| Zn | 10000 | 109 | ns | 126 |

**MW-1**

Screening Values

| Parameter | Commercial | Unrestrict | 0.5 to 2.5 ft |
|---|---|---|---|
| TCE | 200 | 0.47 | 1.7 |
| tPAHs | Ind | Ind | **183** |
| Pb | 1000 | 63 | 127 |
| Hg | 2.8 | 0.18 | 0.25 |
| Zn | 10000 | 109 | 115.0 |

**SS-08**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| Cd | 9.3 | 2.5 | 6.8 | -- |
| Ni | 310 | 30 | 40 | -- |
| Zn | 10000 | 109 | 333 | -- |

**SS-17**

Screening Values

| Parameter | Commercial | Unrestrict | 0.2 to 0.3 ft |
|---|---|---|---|
| tPAHs | Ind | Ind | **11** |
| Sb | NS | (0.6) | 3.6 |
| Pb | 1000 | 63 | 81 |
| Hg | 2.8 | 0.18 | 0.8 |
| Zn | 10000 | 109 | 149 |

**SS-18**

Screening Values

| Parameter | Commercial | Unrestrict | 0-0.8 ft |
|---|---|---|---|
| Pb | 1000 | 63 | 154 |

**SS-04**

Screening Values

| Parameter | Commercial | Unrestrict | 0 to 1.7 ft |
|---|---|---|---|
| Sb | NS | (0.6) | 1.4 |
| Cd | 9.3 | 2.5 | **11** |
| Cr | 1500 | 30 | 58 |
| Cu | 270 | 50 | 182 |
| Pb | 1000 | 63 | 934 |
| Hg | 2.8 | 0.18 | 0.91 |
| Ni | 310 | 30 | 196 |
| Zn | 10000 | 109 | 254 |

**MW-12**

Screening Values

| Parameter | Commercial | Unrestrict | 0 to 2 ft |
|---|---|---|---|
| Cr | 1500 | 30 | 67 |
| Cu | 270 | 50 | 147 |
| Hg | 2.8 | 0.18 | 1.5 |
| Ni | 310 | 30 | 44 |
| Zn | 10000 | 109 | 145 |

**SS-03**

Screening Values

| Parameter | Commercial | Unrestrict | Surface |
|---|---|---|---|
| Sb | NS | (0.6) | 2.2 |
| Cd | 9.3 | 2.5 | 9.2 |
| Cr | 1500 | 30 | 34 |
| Cu | 270 | 50 | 174 |
| Pb | 1000 | 63 | 342 |
| Hg | 2.8 | 0.18 | 0.88 |
| Ni | 310 | 30 | 62 |
| Zn | 10000 | 109 | 266 |

**SS-06**

Screening Values

| Parameter | Commercial | Unrestrict | Surface |
|---|---|---|---|
| tPAHs | Ind | Ind | 8.9 |
| Cd | 9.3 | 2.5 | **36** |
| Cr | 1500 | 30 | 123 |
| Cu | 270 | 50 | **611** |
| Pb | 1000 | 63 | 217 |
| Hg | 2.8 | 0.18 | 1.4 |
| Ni | 310 | 30 | 109 |
| Zn | 10000 | 109 | 357 |

**MW-7**

Screening Values

| Parameter | Commercial | Unrestrict | 0 to 0.5 ft |
|---|---|---|---|
| tPAHs | Ind | Ind | 8.4 |
| Sb | NS | (0.6) | 1.2 |
| Cd | 9.3 | 2.5 | 81 |
| Cr | 1500 | 30 | 216 |
| Cu | 270 | 50 | **483** |
| Pb | 1000 | 63 | 397 |
| Hg | 2.8 | 0.18 | 0.65 |
| Ni | 310 | 30 | 274 |
| Zn | 10000 | 109 | 547 |

**SS-05**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 1.3 ft |
|---|---|---|---|---|
| Pb | 1000 | 63 | 77 | -- |
| Hg | 2.8 | 0.18 | 0.22 | -- |
| Zn | 10000 | 109 | 149 | -- |

**SS-01**

Screening Values

| Parameter | Commercial | Unrestrict | Surface | 0 to 2 ft |
|---|---|---|---|---|
| Sb | NS | (0.6) | 2.1 | 1.6 |
| Cd | 9.3 | 2.5 | 7.6 | 16 |
| Cr | 1500 | 30 | 157 | **6260** |
| Cu | 270 | 50 | 163 | **2140** |
| Pb | 1000 | 63 | 263 | **1100** |
| Hg | 2.8 | 0.18 | 0.88 | 1.5 |
| Ni | 310 | 30 | 128 | **603** |
| Zn | 10000 | 109 | 497 | 558 |
| CN | 27 | 27 | -- | **94** |

**MAXIMUM BACKGROUND**

| Parameter | Abrev. | Surface | 0 to 2 ft |
|---|---|---|---|
| Total Polycyclic aromatic hydrocarbons | tPAHs | 7.3 | 4.8 |
| Aluminum | Al | 15,100 | 17,000 |
| Antimony | Sb | <0.6 | 0.89 |
| Arsenic | As | 16 | 22 |
| Cadmium | Cd | 5.4 | 0.99 |
| Chromium | Cr | 20 | 22 |
| Hexavalent chromium | Hex Cr | 4.5 | <5 |
| Copper | Cu | 79 | 66 |
| Lead | Pb | 497 | 444 |
| Mercury | Hg | 0.64 | 0.81 |
| Nickel | Ni | 28 | 25 |
| Selenium | Se | 1.7 | 1.5 |
| Silver | Ag | 0.42 | 0.47 |
| Zinc | Zn | 525 | 303 |
| Cyanide, total | CN | 2.7 | 2.9 |

Notes:
- Surface soil data represent the 0 to 2 inch surface interval.
- Concentrations are presented in mg/Kg, dry weight.
- "--" indicates concentration below screening value.
- Part 375 screening values for unrestricted and commercial uses are presented, except as noted by ( ) indicating TAGM screening values for antimony and thallium which do not have Part 375 screening values.
- Concentrations presented in **bold font** exceed the Part 375 screening value for commercial uses.
- For PAHs, total PAH (tPAH) concentrations are presented for samples with at least one individual PAH (Ind) above Part 375 screening values. tPAH concentrations are presented in **bold font** when at least one individual PAH (Ind) exceeded a Part 375 screening value for commercial uses. Individual PAH concentrations and screening values are not presented. See report tables for individual PAH concentrations.
- NS = no screening value; ns = not sampled.
- Trace levels of pesticides and PCBs detected above Part 375 screening values for unrestricted uses are not presented in the figure. See Site RI Report tables.

FIGURE 5–1

**LEGEND**

- TP–04 — TEST PIT
- SS–14 — SURFACE SOIL SAMPLE
- SB–9 — SOIL BORING
- MW–8 — MONITORING WELL LOCATION
- BMW–3 — DEEP MONITORING WELL LOCATION

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

THREE STAR ANODIZING SITE WAPPINGERS FALLS, NEW YORK

# SURFACE SOIL DATA

1"=80' (80 0 80)

FILE NO.10653.37062.005

OCTOBER 2007

O'BRIEN & GERE ENGINEERS, INC.

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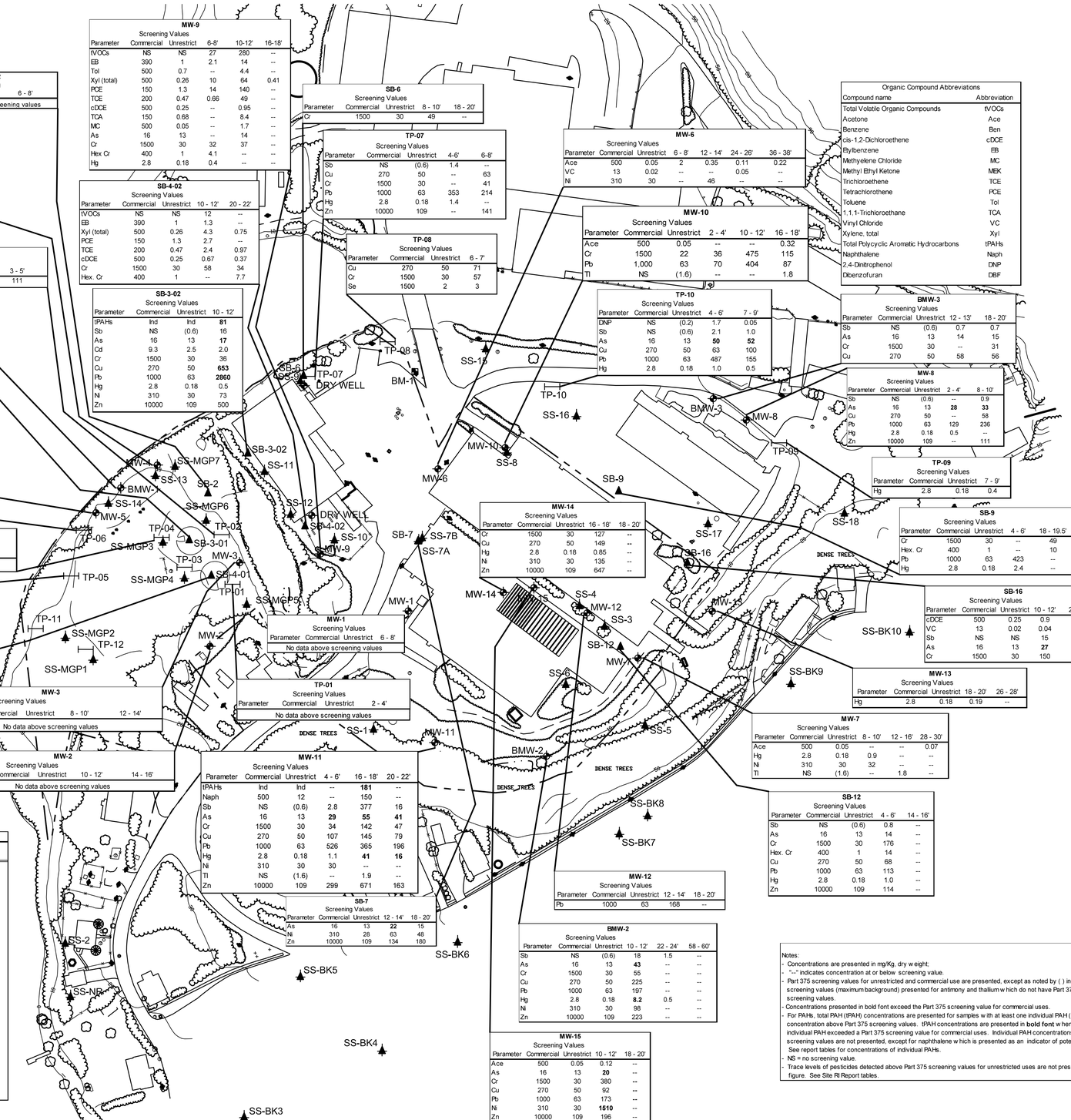
Oct 25, 2007 – 7:59am




**MW-4**

| Parameter | Screening Values Commercial | Unrestrict | 12 - 14' | 14 - 16' | 18 - 20' |
|---|---|---|---|---|---|
| Ben | 44 | 0.06 | -- | 0.25 | 0.065 |
| tPAHs | Ind | Ind | **288** | **1242** | -- |
| Naph | 500 | 12 | -- | 290 | -- |
| DBF | 350 | 7 | -- | 54 | -- |
| Sb | NS | (0.6) | 1.2 | 180 | 1.2 |
| As | 16 | 13 | -- | **39** | -- |
| Cd | 9.3 | 2.5 | **14** | **18** | -- |
| Cr | 1500 | 30 | -- | 257 | 129 |
| Cu | 270 | 50 | 85 | 201 | -- |
| Pb | 1000 | 63 | 115 | 506 | 86 |
| Hg | 2.8 | 0.18 | **6.7** | **249** | **16** |
| Zn | 10000 | 109 | 473 | 2000 | 243 |
| Total CN | 27 | 27 | -- | 39 | -- |

**SB-2**

| Parameter | Screening Value | 6 - 8' |
|---|---|---|
| No data above screening values | | |

**MW-9**

| Parameter | Screening Values Commercial | Unrestrict | 6-8' | 10-12' | 16-18' |
|---|---|---|---|---|---|
| tVOCs | NS | NS | 27 | 280 | -- |
| EB | 390 | 1 | 2.1 | 14 | -- |
| Tol | 500 | 0.7 | -- | 4.4 | -- |
| Xyl (total) | 500 | 0.26 | 10 | 64 | 0.41 |
| PCE | 150 | 1.3 | 14 | 140 | -- |
| TCE | 200 | 0.47 | 0.66 | 49 | -- |
| cDCE | 500 | 0.25 | -- | 0.95 | -- |
| TCA | 150 | 0.68 | -- | 8.4 | -- |
| MC | 500 | 0.05 | -- | 1.7 | -- |
| As | 16 | 13 | -- | 14 | -- |
| Cr | 1500 | 30 | 32 | 37 | -- |
| Hex Cr | 400 | 1 | 4.1 | -- | -- |
| Hg | 2.8 | 0.18 | 0.4 | -- | -- |

**SB-6**

| Parameter | Screening Values Commercial | Unrestrict | 8 - 10' | 18 - 20' |
|---|---|---|---|---|
| Cr | 1500 | 30 | 49 | -- |

**TP-07**

| Parameter | Screening Values Commercial | Unrestrict | 4-6' | 6-8' |
|---|---|---|---|---|
| Sb | NS | (0.6) | 1.4 | -- |
| Cu | 270 | 50 | -- | 63 |
| Cr | 1500 | 30 | -- | 41 |
| Pb | 1000 | 63 | 353 | 214 |
| Hg | 2.8 | 0.18 | 1.4 | -- |
| Zn | 10000 | 109 | -- | 141 |

**MW-6**

| Parameter | Screening Values Commercial | Unrestrict | 6 - 8' | 12 - 14' | 24 - 26' | 36 - 38' |
|---|---|---|---|---|---|---|
| Ace | 500 | 0.05 | 2 | 0.35 | 0.11 | 0.22 |
| VC | 13 | 0.02 | -- | -- | 0.05 | -- |
| Ni | 310 | 30 | -- | 46 | -- | -- |

Organic Compound Abbreviations

| Compound name | Abbreviation |
|---|---|
| Total Volatile Organic Compounds | tVOCs |
| Acetone | Ace |
| Benzene | Ben |
| cis-1,2-Dichloroethene | cDCE |
| Ethylbenzene | EB |
| Methylene Chloride | MC |
| Methyl Ethyl Ketone | MEK |
| Trichloroethene | TCE |
| Tetrachlorothene | PCE |
| Toluene | Tol |
| 1,1,1-Trichloroethane | TCA |
| Vinyl Chloride | VC |
| Xylene, total | Xyl |
| Total Polycyclic Aromatic Hydrocarbons | tPAHs |
| Naphthalene | Naph |
| 2,4-Dinitrophenol | DNP |
| Dibenzofuran | DBF |

**SB-4-02**

| Parameter | Screening Values Commercial | Unrestrict | 10 - 12' | 20 - 22' |
|---|---|---|---|---|
| tVOCs | NS | NS | 12 | -- |
| EB | 390 | 1 | 1.3 | -- |
| Xyl (total) | 500 | 0.26 | 4.3 | 0.75 |
| PCE | 150 | 1.3 | 2.7 | -- |
| TCE | 200 | 0.47 | 2.4 | 0.97 |
| cDCE | 500 | 0.25 | 0.67 | 0.37 |
| Cr | 1500 | 30 | 58 | 34 |
| Hex. Cr | 400 | 1 | -- | 7.7 |

**TP-08**

| Parameter | Screening Values Commercial | Unrestrict | 6 - 7' |
|---|---|---|---|
| Cu | 270 | 50 | 71 |
| Cr | 1500 | 30 | 57 |
| Se | 1500 | 2 | 3 |

**MW-10**

| Parameter | Screening Values Commercial | Unrestrict | 2 - 4' | 10 - 12' | 16 - 18' |
|---|---|---|---|---|---|
| Ace | 500 | 0.05 | -- | -- | 0.32 |
| Cr | 1500 | 22 | 36 | 475 | 115 |
| Pb | 1,000 | 63 | 70 | 404 | 87 |
| Tl | NS | (1.6) | -- | -- | 1.8 |

**BMW-1**

| Parameter | Screening Values Commercial | Unrestrict | 20 - 22' | 28 - 30' | 38 - 40' |
|---|---|---|---|---|---|
| Ben | 44 | 0.06 | 0.26 | 0.27 | -- |
| Xyl (total) | 500 | 0.26 | -- | 3.1 | -- |
| tPAHs | Ind | Ind | -- | **419** | -- |
| Naph | 500 | 12 | -- | 78 | -- |
| DBF | 350 | 7 | -- | 21 | -- |

**TP-02**

| Parameter | Screening Values Commercial | Unrestrict | 3 - 5' |
|---|---|---|---|
| Zn | 10000 | 109 | 111 |

**SB-3-02**

| Parameter | Screening Values Commercial | Unrestrict | 10 - 12' |
|---|---|---|---|
| tPAHs | Ind | Ind | **81** |
| Sb | NS | (0.6) | 16 |
| As | 16 | 13 | **17** |
| Cd | 9.3 | 2.5 | 2.0 |
| Cr | 1500 | 30 | 36 |
| Cu | 270 | 50 | **653** |
| Pb | 1000 | 63 | **2860** |
| Hg | 2.8 | 0.18 | 0.5 |
| Ni | 310 | 30 | 73 |
| Zn | 10000 | 109 | 500 |

**TP-10**

| Parameter | Screening Values Commercial | Unrestrict | 4 - 6' | 7 - 9' |
|---|---|---|---|---|
| DNP | NS | (0.2) | 1.7 | 0.05 |
| Sb | NS | (0.6) | 2.1 | 1.0 |
| As | 16 | 13 | **50** | **52** |
| Cu | 270 | 50 | 63 | 100 |
| Pb | 1000 | 63 | 487 | 155 |
| Hg | 2.8 | 0.18 | 1.0 | 0.5 |

**BMW-3**

| Parameter | Screening Values Commercial | Unrestrict | 12 - 13' | 18 - 20' |
|---|---|---|---|---|
| Sb | NS | (0.6) | 0.7 | 0.7 |
| As | 16 | 13 | 14 | 15 |
| Cr | 1500 | 30 | -- | 31 |
| Cu | 270 | 50 | 58 | 56 |

**SB-3-01**

| Parameter | Screening Values Commercial | Unrestrict | 8 - 10' | 10 - 14' | 24 - 28' |
|---|---|---|---|---|---|
| No data above screening values | | | | | |

**MW-5**

| Parameter | Screening Values Commercial | Unrestrict | 2 - 4' | 12 - 14' | 14 - 16' | 16 - 18' |
|---|---|---|---|---|---|---|
| Ace | 500 | 0.05 | -- | -- | 0.09 | -- |
| tPAHs | Ind | Ind | **1448** | **795** | **395** | **213** |
| Naph | 500 | 12 | 30 | -- | -- | -- |
| DBF | 350 | 7 | 25 | 16 | -- | -- |
| Sb | NS | (0.6) | 1.1 | 0.7 | -- | -- |
| As | 16 | 13 | 15 | 14 | -- | -- |
| Cr | 1500 | 30 | 37 | 150 | 33 | -- |
| Cu | 270 | 50 | 63 | 54 | -- | -- |
| Pb | 1000 | 63 | 191 | 90 | -- | -- |
| Hg | 2.8 | 0.18 | 2.1 | **3.7** | 1.8 | -- |
| Ni | 310 | 30 | -- | 35 | -- | -- |
| Zn | 10000 | 109 | 253 | 174 | -- | -- |

**MW-8**

| Parameter | Screening Values Commercial | Unrestrict | 2 - 4' | 8 - 10' |
|---|---|---|---|---|
| Sb | NS | (0.6) | -- | 0.9 |
| As | 16 | 13 | **28** | **33** |
| Cu | 270 | 50 | -- | 58 |
| Pb | 1000 | 63 | 129 | 236 |
| Hg | 2.8 | 0.18 | 0.5 | -- |
| Zn | 10000 | 109 | -- | 111 |

**TP-09**

| Parameter | Screening Values Commercial | Unrestrict | 7 - 9' |
|---|---|---|---|
| Hg | 2.8 | 0.18 | 0.4 |

**TP-06**

| Parameter | Screening Values Commercial | Unrestrict | 5 - 7' |
|---|---|---|---|
| Sb | NS | (0.6) | 0.8 |
| Cd | 9.3 | 2.5 | 2.9 |
| Cu | 270 | 50 | 85 |
| Pb | 1000 | 63 | 242 |
| Hg | 2.8 | 0.18 | 0.3 |
| Zn | 10000 | 109 | 272 |

**TP-04**

| Parameter | Screening Values Commercial | Unrestrict | cinders |
|---|---|---|---|
| tPAHs | Ind | Ind | **1670** |

**MW-14**

| Parameter | Screening Values Commercial | Unrestrict | 16 - 18' | 18 - 20' |
|---|---|---|---|---|
| Cr | 1500 | 30 | 127 | -- |
| Cu | 270 | 50 | 149 | -- |
| Hg | 2.8 | 0.18 | 0.85 | -- |
| Ni | 310 | 30 | 135 | -- |
| Zn | 10000 | 109 | 647 | -- |

**SB-9**

| Parameter | Screening Values Commercial | Unrestrict | 4 - 6' | 18 - 19.5' |
|---|---|---|---|---|
| Cr | 1500 | 30 | -- | 49 |
| Hex. Cr | 400 | 1 | -- | 10 |
| Pb | 1000 | 63 | 423 | -- |
| Hg | 2.8 | 0.18 | 2.4 | -- |

**TP-05**

| Parameter | Screening Values Commercial | Unrestrict | 4 - 6' | 9.5 - 10.5' |
|---|---|---|---|---|
| tPAHs | Ind | Ind | **379** | -- |
| Pb | 1000 | 63 | 80 | 101 |
| Zn | 10000 | 109 | 132 | -- |

**SB-16**

| Parameter | Screening Values Commercial | Unrestrict | 10 - 12' | 20 - 22' |
|---|---|---|---|---|
| cDCE | 500 | 0.25 | 0.9 | -- |
| VC | 13 | 0.02 | 0.04 | -- |
| Sb | NS | NS | 15 | -- |
| As | 16 | 13 | **27** | -- |
| Cr | 1500 | 30 | 150 | -- |

**MW-1**

| Parameter | Screening Values Commercial | Unrestrict | 6 - 8' |
|---|---|---|---|
| No data above screening values | | | |

**MW-13**

| Parameter | Screening Values Commercial | Unrestrict | 18 - 20' | 26 - 28' |
|---|---|---|---|---|
| Hg | 2.8 | 0.18 | 0.19 | -- |

**SB-4-01**

| Parameter | Screening Values Commercial | Unrestrict | 6 - 8' | 8 - 9.2' | 10 - 12' |
|---|---|---|---|---|---|
| Ben | 44 | 0.06 | -- | -- | 0.16 |
| Xyl | 500 | 0.26 | -- | -- | 0.37 |
| Ace | 500 | 0.05 | -- | 0.06 | 0.11 |
| tPAHs | Ind | Ind | **2261** | **388** | **575** |
| Naph | 500 | 12 | 14 | -- | -- |
| Phenol | 500 | 0.33 | -- | -- | 0.9 |
| DBF | 350 | 7 | 15 | 8.2 | 9.5 |
| Sb | NS | (0.6) | 2.5 | -- | -- |
| Cr | 1500 | 30 | 57 | -- | -- |
| Cu | 270 | 50 | 94 | -- | -- |
| Pb | 1000 | 63 | **1750** | 155 | 520 |
| Hg | 2.8 | 0.18 | 1.3 | -- | -- |
| Zn | 10000 | 109 | 278 | -- | -- |

**MW-3**

| Parameter | Screening Values Commercial | Unrestrict | 8 - 10' | 12 - 14' |
|---|---|---|---|---|
| No data above screening values | | | | |

**TP-01**

| Parameter | Screening Values Commercial | Unrestrict | 2 - 4' |
|---|---|---|---|
| No data above screening values | | | |

**MW-7**

| Parameter | Screening Values Commercial | Unrestrict | 8 - 10' | 12 - 16' | 28 - 30' |
|---|---|---|---|---|---|
| Ace | 500 | 0.05 | -- | -- | 0.07 |
| Hg | 2.8 | 0.18 | 0.9 | -- | -- |
| Ni | 310 | 30 | 32 | -- | -- |
| Tl | NS | (1.6) | -- | 1.8 | -- |

**MW-2**

| Parameter | Screening Values Commercial | Unrestrict | 10 - 12' | 14 - 16' |
|---|---|---|---|---|
| No data above screening values | | | | |

**MW-11**

| Parameter | Screening Values Commercial | Unrestrict | 4 - 6' | 16 - 18' | 20 - 22' |
|---|---|---|---|---|---|
| tPAHs | Ind | Ind | -- | **181** | -- |
| Naph | 500 | 12 | -- | 150 | -- |
| Sb | NS | (0.6) | 2.8 | 377 | 16 |
| As | 16 | 13 | **29** | **55** | **41** |
| Cr | 1500 | 30 | 34 | 142 | 47 |
| Cu | 270 | 50 | 107 | 145 | 79 |
| Pb | 1000 | 63 | 526 | 365 | 196 |
| Hg | 2.8 | 0.18 | 1.1 | **41** | **16** |
| Ni | 310 | 30 | 30 | -- | -- |
| Tl | NS | (1.6) | -- | 1.9 | -- |
| Zn | 10000 | 109 | 299 | 671 | 163 |

**SB-12**

| Parameter | Screening Values Commercial | Unrestrict | 4 - 6' | 14 - 16' |
|---|---|---|---|---|
| Sb | NS | (0.6) | 0.8 | -- |
| As | 16 | 13 | 14 | -- |
| Cr | 1500 | 30 | 176 | -- |
| Hex. Cr | 400 | 1 | 14 | -- |
| Cu | 270 | 50 | 68 | -- |
| Pb | 1000 | 63 | 113 | -- |
| Hg | 2.8 | 0.18 | 1.0 | -- |
| Zn | 10000 | 109 | 114 | -- |

**MW-12**

| Parameter | Screening Values Commercial | Unrestrict | 12 - 14' | 18 - 20' |
|---|---|---|---|---|
| Pb | 1000 | 63 | 168 | -- |

**SB-7**

| Parameter | Screening Values Commercial | Unrestrict | 12 - 14' | 18 - 20' |
|---|---|---|---|---|
| As | 16 | 13 | **22** | 15 |
| Ni | 310 | 28 | 63 | 48 |
| Zn | 10000 | 109 | 134 | 180 |

**BMW-2**

| Parameter | Screening Values Commercial | Unrestrict | 10 - 12' | 22 - 24' | 58 - 60' |
|---|---|---|---|---|---|
| Sb | NS | (0.6) | 18 | 1.5 | -- |
| As | 16 | 13 | **43** | -- | -- |
| Cr | 1500 | 30 | 55 | -- | -- |
| Cu | 270 | 50 | 225 | -- | -- |
| Pb | 1000 | 63 | 197 | -- | -- |
| Hg | 2.8 | 0.18 | **8.2** | 0.5 | -- |
| Ni | 310 | 30 | 98 | -- | -- |
| Zn | 10000 | 109 | 223 | -- | -- |

**MW-15**

| Parameter | Screening Values Commercial | Unrestrict | 10 - 12' | 18 - 20' |
|---|---|---|---|---|
| Ace | 500 | 0.05 | 0.12 | -- |
| As | 16 | 13 | **20** | -- |
| Cr | 1500 | 30 | 380 | -- |
| Cu | 270 | 50 | 92 | -- |
| Pb | 1000 | 63 | 173 | -- |
| Ni | 310 | 30 | **1510** | -- |
| Zn | 10000 | 109 | 196 | -- |

**Soil Background Reference Concentrations**

| Parameter | | Soil Background Reference Values low | high | Local Background low | high | Screening Value |
|---|---|---|---|---|---|---|
| Aluminum | Al | ND | 33,000 | 6,300 | 17,000 | NS |
| Antimony | Sb | ND | ND | <0.6 | 0.6 | NS |
| Arsenic | As | 3 | 12 | 6 | 22 | 13 |
| Barium | Ba | 15 | 600 | 45 | 135 | 350 |
| Beryllium | Be | ND | 1.75 | 0.4 | 0.8 | 7.2 |
| Cadmium | Cd | 0.1 | 1 | 0.4 | 5.4 | 2.5 |
| Calcium | Ca | 130 | 35000 | 971 | 41,000 | NS |
| Chromium | Cr | 1.5 | 40 | 13 | 22 | 30 |
| Hex. Chrom. | Hex Cr | ND | ND | <5 | 4.5 | 1 |
| Cobalt | Co | 2.5 | 60 | 6 | 10 | NS |
| Copper | Cu | 1 | 50 | 22 | 79 | 50 |
| Iron | Fe | 200 | 550,000 | 20,600 | 32,300 | NS |
| Lead | Pb | 200 | 500 | 36 | 497 | 63 |
| Magnesium | Mg | 100 | 5000 | 3330 | 25,700 | NS |
| Manganese | Mn | 50 | 5000 | 330 | 1,290 | 1600 |
| Mercury | Hg | 0.001 | 0.2 | 0.1 | 0.8 | 0.18 |
| Nickel | Ni | 0.5 | 25 | 17 | 28 | 30 |
| Potassium | K | 8500 | 43000 | 550 | 1,090 | NS |
| Selenium | Se | 0.1 | 3.9 | <0.5 | 1.7 | 3.9 |
| Silver | Ag | ND | ND | <0.3 | 0.5 | 2 |
| Sodium | Na | 6000 | 8000 | 43 | 188 | NS |
| Thallium | Tl | ND | ND | <0.9 | 2.0 | NS |
| Vanadium | Vn | 1 | 300 | 19 | 48 | NS |
| Zinc | Zn | 9 | 50 | 72 | 525 | 109 |
| Cyanide, total | Total CN | ND | ND | <0.7 | 2.9 | 27 |
| Cyanide, amen. | Amen CN | ND | ND | <0.7 | <0.7 | NS |

Notes:
- Concentrations are presented in mg/Kg, dry weight;
- "–" indicates concentration at or below screening value.
- Part 375 screening values for unrestricted and commercial use are presented, except as noted by ( ) indicating TAGM screening values (maximum background) presented for antimony and thallium which do not have Part 375 screening values.
- Concentrations presented in bold font exceed the Part 375 screening value for commercial uses.
- For PAHs, total PAH (tPAH) concentrations are presented for samples with at least one individual PAH (Ind) concentration above Part 375 screening values. tPAH concentrations are presented in bold font when at least individual PAH exceeded a Part 375 screening value for commercial uses. Individual PAH concentrations and screening values are not presented, except for naphthalene which is presented as an indicator of potential PAH mobility. See report tables for concentrations of individual PAHs.
- NS = no screening value.
- Trace levels of pesticides detected above Part 375 screening values for unrestricted uses are not presented in the figure. See Site RI Report tables.

FIGURE 5–2

**LEGEND**

- TP–04 — TEST PIT
- SS–14 — SURFACE SOIL SAMPLE
- SB–9 — SOIL BORING
- MW–8 — MONITORING WELL LOCATION
- BMW–3 — DEEP MONITORING WELL LOCATION

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

THREE STAR ANODIZING SITE WAPPINGERS FALLS, NEW YORK

# SOIL BORING DATA

1"=80' (80 0 80)

FILE NO.10653.37062.006
OCTOBER 2007

O'BRIEN & GERE ENGINEERS, INC.

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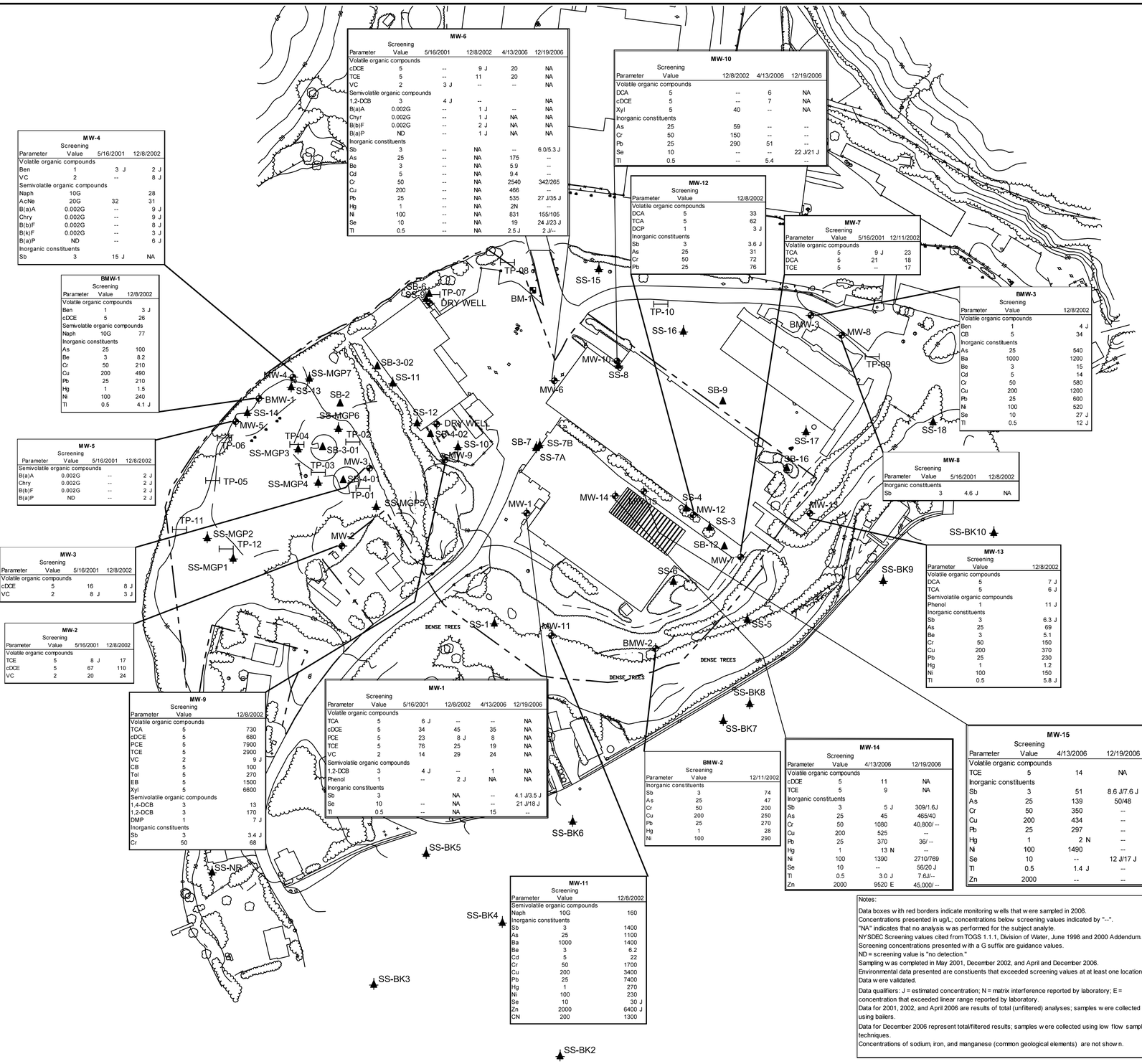
Oct 25, 2007 – 8:01am

# FIGURE 5–3




**MW-4**

| Parameter | Screening Value | 5/16/2001 | 12/8/2002 |
|---|---|---|---|
| Volatile organic compounds | | | |
| Ben | 1 | 3 J | 2 J |
| VC | 2 | -- | 8 J |
| Semivolatile organic compounds | | | |
| Naph | 10G | | 28 |
| AcNe | 20G | 32 | 31 |
| B(a)A | 0.002G | -- | 9 J |
| Chry | 0.002G | -- | 9 J |
| B(b)F | 0.002G | -- | 8 J |
| B(k)F | 0.002G | -- | 3 J |
| B(a)P | ND | -- | 6 J |
| Inorganic constituents | | | |
| Sb | 3 | 15 J | NA |

**BMW-1**

| Parameter | Screening Value | 12/8/2002 |
|---|---|---|
| Volatile organic compounds | | |
| Ben | 1 | 3 J |
| cDCE | 5 | 26 |
| Semivolatile organic compounds | | |
| Naph | 10G | 77 |
| Inorganic constituents | | |
| As | 25 | 100 |
| Be | 3 | 8.2 |
| Cr | 50 | 210 |
| Cu | 200 | 490 |
| Pb | 25 | 210 |
| Hg | 1 | 1.5 |
| Ni | 100 | 240 |
| Tl | 0.5 | 4.1 J |

**MW-5**

| Parameter | Screening Value | 5/16/2001 | 12/8/2002 |
|---|---|---|---|
| Semivolatile organic compounds | | | |
| B(a)A | 0.002G | -- | 2 J |
| Chry | 0.002G | -- | 2 J |
| B(b)F | 0.002G | -- | 2 J |
| B(a)P | ND | -- | 2 J |

**MW-3**

| Parameter | Screening Value | 5/16/2001 | 12/8/2002 |
|---|---|---|---|
| Volatile organic compounds | | | |
| cDCE | 5 | 16 | 8 J |
| VC | 2 | 8 J | 3 J |

**MW-2**

| Parameter | Screening Value | 5/16/2001 | 12/8/2002 |
|---|---|---|---|
| Volatile organic compounds | | | |
| TCE | 5 | 8 J | 17 |
| cDCE | 5 | 67 | 110 |
| VC | 2 | 20 | 24 |

**MW-9**

| Parameter | Screening Value | 12/8/2002 |
|---|---|---|
| Volatile organic compounds | | |
| TCA | 5 | 730 |
| cDCE | 5 | 680 |
| PCE | 5 | 7900 |
| TCE | 5 | 2900 |
| VC | 2 | 9 J |
| CB | 5 | 100 |
| Tol | 5 | 270 |
| EB | 5 | 1500 |
| Xyl | 5 | 6600 |
| Semivolatile organic compounds | | |
| 1,4-DCB | 3 | 13 |
| 1,2-DCB | 3 | 170 |
| DMP | 1 | 7 J |
| Inorganic constituents | | |
| Sb | 3 | 3.4 J |
| Cr | 50 | 68 |

**MW-6**

| Parameter | Screening Value | 5/16/2001 | 12/8/2002 | 4/13/2006 | 12/19/2006 |
|---|---|---|---|---|---|
| Volatile organic compounds | | | | | |
| cDCE | 5 | -- | 9 J | 20 | NA |
| TCE | 5 | -- | 11 | 20 | NA |
| VC | 2 | 3 J | -- | -- | NA |
| Semivolatile organic compounds | | | | | |
| 1,2-DCB | 3 | 4 J | -- | | NA |
| B(a)A | 0.002G | -- | 1 J | -- | NA |
| Chry | 0.002G | -- | 1 J | NA | NA |
| B(b)F | 0.002G | -- | 2 J | NA | NA |
| B(a)P | ND | -- | 1 J | NA | NA |
| Inorganic constituents | | | | | |
| Sb | 3 | -- | NA | -- | 6.0/5.3 J |
| As | 25 | -- | NA | 175 | -- |
| Be | 3 | -- | NA | 5.9 | -- |
| Cd | 5 | -- | NA | 9.4 | -- |
| Cr | 50 | -- | NA | 2540 | 342/265 |
| Cu | 200 | -- | NA | 466 | -- |
| Pb | 25 | -- | NA | 535 | 27 J/35 J |
| Hg | 1 | -- | NA | 2N | -- |
| Ni | 100 | -- | NA | 831 | 155/105 |
| Se | 10 | -- | NA | 19 | 24 J/23 J |
| Tl | 0.5 | -- | NA | 2.5 J | 2 J/-- |

**MW-10**

| Parameter | Screening Value | 12/8/2002 | 4/13/2006 | 12/19/2006 |
|---|---|---|---|---|
| Volatile organic compounds | | | | |
| DCA | 5 | -- | 6 | NA |
| cDCE | 5 | -- | 7 | NA |
| Xyl | 5 | 40 | -- | NA |
| Inorganic constituents | | | | |
| As | 25 | 59 | -- | -- |
| Cr | 50 | 150 | -- | -- |
| Pb | 25 | 290 | 51 | -- |
| Se | 10 | -- | -- | 22 J/21 J |
| Tl | 0.5 | -- | 5.4 | -- |

**MW-12**

| Parameter | Screening Value | 12/8/2002 |
|---|---|---|
| Volatile organic compounds | | |
| DCA | 5 | 33 |
| TCA | 5 | 62 |
| DCP | 1 | 3 J |
| Inorganic constituents | | |
| Sb | 3 | 3.6 J |
| As | 25 | 31 |
| Cr | 50 | 72 |
| Pb | 25 | 76 |

**MW-7**

| Parameter | Screening Value | 5/16/2001 | 12/11/2002 |
|---|---|---|---|
| Volatile organic compounds | | | |
| TCA | 5 | 9 J | 23 |
| DCA | 5 | 21 | 18 |
| TCE | 5 | -- | 17 |

**BMW-3**

| Parameter | Screening Value | 12/8/2002 |
|---|---|---|
| Volatile organic compounds | | |
| Ben | 1 | 4 J |
| CB | 5 | 34 |
| Inorganic constituents | | |
| As | 25 | 540 |
| Ba | 1000 | 1200 |
| Be | 3 | 15 |
| Cd | 5 | 14 |
| Cr | 50 | 580 |
| Cu | 200 | 1200 |
| Pb | 25 | 600 |
| Ni | 100 | 520 |
| Se | 10 | 27 J |
| Tl | 0.5 | 12 J |

**MW-8**

| Parameter | Screening Value | 5/16/2001 | 12/8/2002 |
|---|---|---|---|
| Inorganic constituents | | | |
| Sb | 3 | 4.6 J | NA |

**MW-13**

| Parameter | Screening Value | 12/8/2002 |
|---|---|---|
| Volatile organic compounds | | |
| DCA | 5 | 7 J |
| TCA | 5 | 6 J |
| Semivolatile organic compounds | | |
| Phenol | 1 | 11 J |
| Inorganic constituents | | |
| Sb | 3 | 6.3 J |
| As | 25 | 69 |
| Be | 3 | 5.1 |
| Cr | 50 | 150 |
| Cu | 200 | 370 |
| Pb | 25 | 230 |
| Hg | 1 | 1.2 |
| Ni | 100 | 150 |
| Tl | 0.5 | 5.8 J |

**MW-1**

| Parameter | Screening Value | 5/16/2001 | 12/8/2002 | 4/13/2006 | 12/19/2006 |
|---|---|---|---|---|---|
| Volatile organic compounds | | | | | |
| TCA | 5 | 6 J | -- | -- | NA |
| cDCE | 5 | 34 | 45 | 35 | NA |
| PCE | 5 | 23 | 8 J | 8 | NA |
| TCE | 5 | 76 | 25 | 19 | NA |
| VC | 2 | 14 | 29 | 24 | NA |
| Semivolatile organic compounds | | | | | |
| 1,2-DCB | 3 | 4 J | -- | 1 | NA |
| Phenol | 1 | -- | 2 J | NA | NA |
| Inorganic constituents | | | | | |
| Sb | 3 | | NA | -- | 4.1 J/3.5 J |
| Se | 10 | -- | NA | -- | 21 J/18 J |
| Tl | 0.5 | -- | NA | 15 | -- |

**BMW-2**

| Parameter | Screening Value | 12/11/2002 |
|---|---|---|
| Inorganic constituents | | |
| Sb | 3 | 74 |
| As | 25 | 47 |
| Cr | 50 | 200 |
| Cu | 200 | 250 |
| Pb | 25 | 270 |
| Hg | 1 | 28 |
| Ni | 100 | 290 |

**MW-11**

| Parameter | Screening Value | 12/8/2002 |
|---|---|---|
| Semivolatile organic compounds | | |
| Naph | 10G | 160 |
| Inorganic constituents | | |
| Sb | 3 | 1400 |
| As | 25 | 1100 |
| Ba | 1000 | 1400 |
| Be | 3 | 6.2 |
| Cd | 5 | 22 |
| Cr | 50 | 1700 |
| Cu | 200 | 3400 |
| Pb | 25 | 7400 |
| Hg | 1 | 270 |
| Ni | 100 | 230 |
| Se | 10 | 30 J |
| Zn | 2000 | 6400 J |
| CN | 200 | 1300 |

**MW-14**

| Parameter | Screening Value | 4/13/2006 | 12/19/2006 |
|---|---|---|---|
| Volatile organic compounds | | | |
| cDCE | 5 | 11 | NA |
| TCE | 5 | 9 | NA |
| Inorganic constituents | | | |
| Sb | 3 | 5 J | 309/1.6J |
| As | 25 | 45 | 465/40 |
| Cr | 50 | 1080 | 40,800/ -- |
| Cu | 200 | 525 | -- |
| Pb | 25 | 370 | 36/ -- |
| Hg | 1 | 13 N | -- |
| Ni | 100 | 1390 | 2710/769 |
| Se | 10 | -- | 56/20 J |
| Tl | 0.5 | 3.0 J | 7.6J/-- |
| Zn | 2000 | 9520 E | 45,000/ -- |

**MW-15**

| Parameter | Screening Value | 4/13/2006 | 12/19/2006 |
|---|---|---|---|
| Volatile organic compounds | | | |
| TCE | 5 | 14 | NA |
| Inorganic constituents | | | |
| Sb | 3 | 51 | 8.6 J/7.6 J |
| As | 25 | 139 | 50/48 |
| Cr | 50 | 350 | -- |
| Cu | 200 | 434 | -- |
| Pb | 25 | 297 | -- |
| Hg | 1 | 2 N | -- |
| Ni | 100 | 1490 | -- |
| Se | 10 | -- | 12 J/17 J |
| Tl | 0.5 | 1.4 J | -- |
| Zn | 2000 | -- | -- |

**NYSDEC Screening Values (ug/L)**

| | | |
|---|---|---|
| Volatile Organic Compounds | | |
| 1,1,1-Trichloroethane | TCA | 5 |
| 1,1-Dichloroethane | DCA | 5 |
| cis-1,2-Dichloroethene | cDCE | 5 |
| Tetrachloroethene | PCE | 5 |
| Trichloroethene | TCE | 5 |
| Vinyl Chloride | VC | 2 |
| Chlorobenzene | CB | 5 |
| Benzene | Ben | 1 |
| Toluene | Tol | 5 |
| Ethylbenzene | EB | 5 |
| Xylene | Xyl | 5 |
| 1,2-Dichloropropane | DCP | 1 |
| Semivolatile Organic Compounds | | |
| Phenol | Phenol | 1 |
| 1,4-Dichlorobenzene | 1,4-DCB | 3 |
| 1,2-Dichlorobenzene | 1,2-DCB | 3 |
| 2,4-Dimethylphenol | DMP | 1 |
| Naphthalene | Napth | 10G |
| Acenaphthene | AcNe | 20G |
| Benzo(a)anthracene | B(a)A | 0.002G |
| Chrysene | Chry | 0.002G |
| Benzo(b)fluoranthene | B(b)F | 0.002G |
| Benzo(a)pyrene | B(a)P | ND |
| Inorganic Constituents | | |
| Antimony | Sb | 3 |
| Arsenic | As | 25 |
| Barium | Ba | 1000 |
| Beryllium | Be | 3 |
| Cadmium | Cd | 5 |
| Chromium | Cr | 50 |
| Copper | Cu | 200 |
| Lead | Pb | 25 |
| Mercury | Hg | 1 |
| Nickel | Ni | 100 |
| Selenium | Se | 10 |
| Thallium | Tl | 0.5 |
| Zinc | Zn | 2000 |
| Cyanide | CN | 200 |

Notes:

Data boxes with red borders indicate monitoring wells that were sampled in 2006.
Concentrations presented in ug/L; concentrations below screening values indicated by "--".
"NA" indicates that no analysis was performed for the subject analyte.
NYSDEC Screening values cited from TOGS 1.1.1, Division of Water, June 1998 and 2000 Addendum.
Screening concentrations presented with a G suffix are guidance values.
ND = screening value is "no detection."
Sampling was completed in May 2001, December 2002, and April and December 2006.
Environmental data presented are constiuents that exceeded screening values at at least one location.
Data were validated.
Data qualifiers: J = estimated concentration; N = matrix interference reported by laboratory; E = concentration that exceeded linear range reported by laboratory.
Data for 2001, 2002, and April 2006 are results of total (unfiltered) analyses; samples were collected using bailers.
Data for December 2006 represent total/filtered results; samples were collected using low flow sampling techniques.
Concentrations of sodium, iron, and manganese (common geological elements) are not shown.

**LEGEND**

| | |
|---|---|
| TP–04 | TEST PIT |
| SS–14 | SURFACE SOIL SAMPLE |
| SB–9 | SOIL BORING |
| MW–8 | MONITORING WELL LOCATION |
| BMW–3 | DEEP MONITORING WELL LOCATION |

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

THREE STAR
ANODIZING SITE
WAPPINGERS FALLS,
NEW YORK

## GROUND WATER DATA

1"=80' 80 0 80

FILE NO.10653.37062.007
OCTOBER 2007

O'BRIEN & GERE ENGINEERS, INC.

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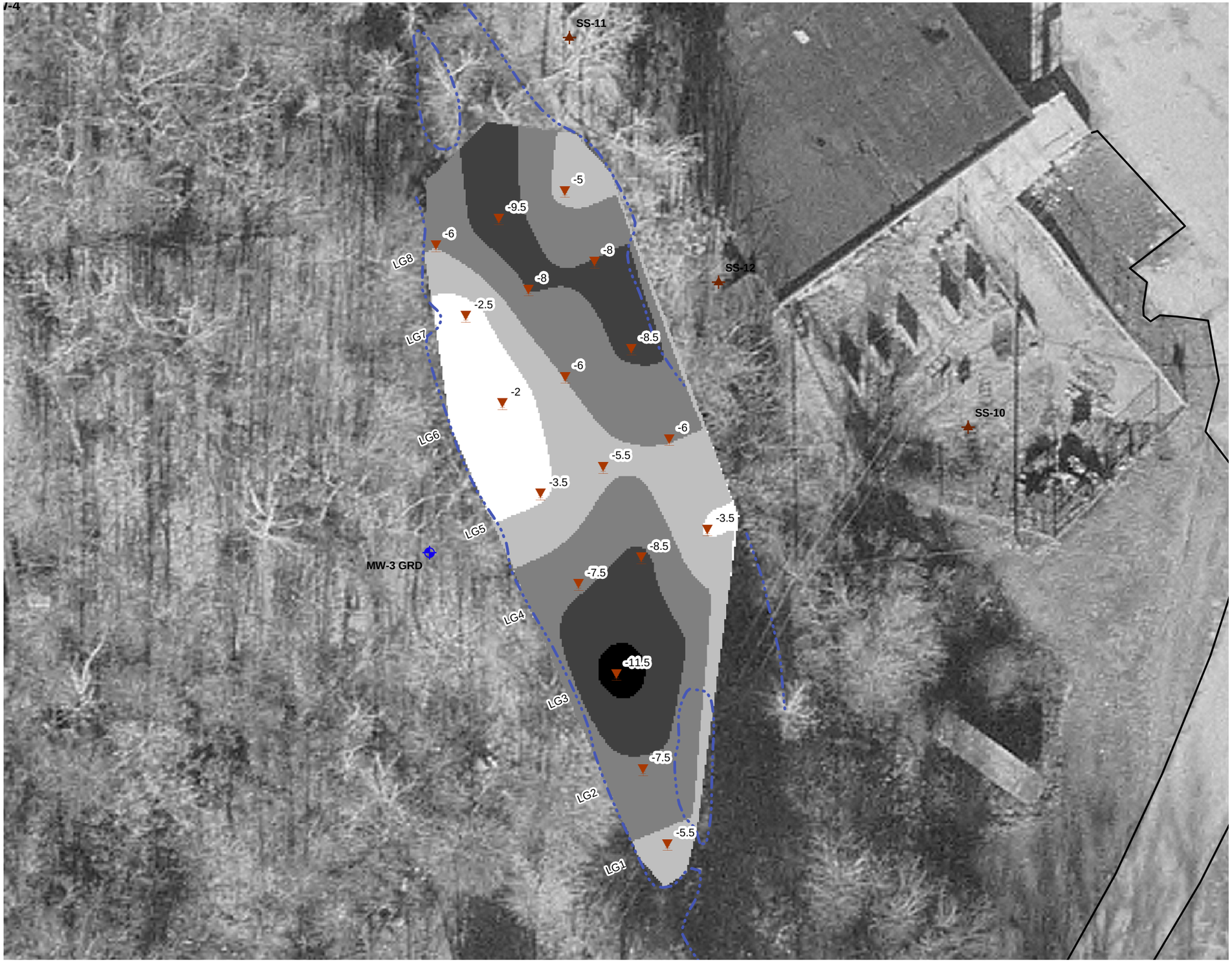
# FIGURE 5-4




## Legend

**SAMPLE TYPE**

- MONITORING WELL
- SURFACE SOIL
- SEDIMENT DEPTH

**SEDIMENT DEPTH (ft)**

- 2.0 - 3.9
- 4.0 - 5.9
- 6.0 - 7.9
- 8.0 - 9.9
- 10.0 - 11.5

LAGOON VOLUMETRICS:
2D_AREA: 8860 $ft^2$
3D_AREA: 9090 $ft^2$
VOLUME: 56610 $ft^3$ (2097 $yards^3$)

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

## SEDIMENT TRANSECTS
## LAGOON AREA

0 12.5 25 50
Feet

OCTOBER 2007
10653.27258

O'BRIEN & GERE ENGINEERS, INC.

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PLOT DATE: 09/25/07 DIV 71 LSR