REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

EPA ID: GAD061425104 **Site Name:** AJAY **State ID:**

Alias Site Names:

City: POWDER SPRINGS **County or Parish:** COBB **State:** GA

Refer to Report Dated: 09/11/98 **Report Type:** SITE INSPECTION 001

Report Developed by:

DECISION:

[X] **1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**

[X] **1a. Site does not qualify for further remedial site assessment under CERCLA (No Further Remedial Action Planned - NFRAP)**

[ ] **1b. Site may qualify for action, but is deferred to:**

[ ] **2. Further Assessment Needed Under CERCLA:**

2a. Priority: [ ] **Higher** [ ] **Lower**

2b. Other: (recommended action)

DISCUSSION/RATIONALE:

Selenium has been detected in an upgradient industrial well. No drinking well targets are currently known to exist between the facility and Noses Creek. Historical samples indicated selenium in Noses Creek, but sampling conducting during the Si did not. A removal of two onsite holding ponds down to 8 feet below grade probably eliminated the source.

Site Decision Made by: ALAN W. YARBROUGH

Signature: _____ **Date:** 10/23/98

EPA Form # 9100-3

SITE INSPECTION NARRATIVE REPORT

Ajay North America, L.L.C.
1400 Industry Road, SW
Powder Springs, Cobb County, Georgia

EPA ID # GAD061425104

Prepared for
U.S. Environmental Protection Agency
Region IV

Prepared by
David Brownlee
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Georgia Environmental Protection Division
Hazardous Waste Management Branch

September 11, 1998

Reviewed By:
Jane Hendricks
Unit Coordinator

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1.0 INTRODUCTION

Under authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Acts of 1986 (SARA), the Georgia Environmental Protection Division (EPD), Hazardous Waste Management Branch conducted a site inspection (SI) at the Ajay North America L.L.C. site in Cobb County, Georgia. The purpose of this investigation was to collect information concerning conditions at the Ajay North America L.L.C. site sufficient to assess the threat posed to human health and the environment and to determine the need for additional investigation under CERCLA/SARA or other authority, and, if appropriate, support site evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL). The scope of the investigation included review of previous information, sampling waste and environmental media to test preliminary assessment (PA) hypotheses and to evaluate and document HRS factors, and collecting additional non-sampling information.

2.0 SITE DESCRIPTION, OPERATIONAL HISTORY, & WASTE CHARACTERISTICS

2.1 Location

Ajay North America L.L.C. is located at 1400 Industry Road, SW within the city limits of Powder Springs, Georgia (Figure 1). The geographic coordinates are 33°51'25.5" N latitude and 84°39'2.3"W longitude as can be seen on the United States Geological Survey (U.S.G.S.) 7.5 minute Topographic Quadrangle Maps (Reference 1). Powder Springs is located in Cobb County and is approximately 23 miles west of Atlanta. The site can be reached from I-285 by taking the Bankhead Highway exit and heading west. Turn right onto Austell/Powder Springs Road and turn right again onto Powder Springs Road. Then turn right on Flint Hill Road and take the first right onto Industry Road.

The climate of Cobb County is mild to hot with humid summers and cool winters. The average daily maximum temperature during the summer is about 90°F and the average daily temperature during the winter is about 30°F. Mean annual precipitation is approximately 49 inches (Reference 2).

2.2 Site Description

The site is located on approximately 12 acres and is owned by Ajay North America, L.L.C. (Reference 3). The site is bordered on the north by wooded areas and a railroad bed (former Seaboard Coastal railroad track), on the south by Noses Creek, on the west by Blue Flame Gas Company and on the east by Georgia Metals, Inc. (References 3 and 4). Phibro-Tech (formerly C.P. Chemicals) is located south-southeast of Ajay Chemicals. The property slopes gently towards the south toward Noses Creek.

The property is currently in active use. The site has one main structure on it housing the offices and operations. Two additional buildings have recently been constructed; however, operations in those buildings have not begun (Reference 4). The site formerly had two surface impoundments on the property; an unlined retention pond and a lined impoundment.

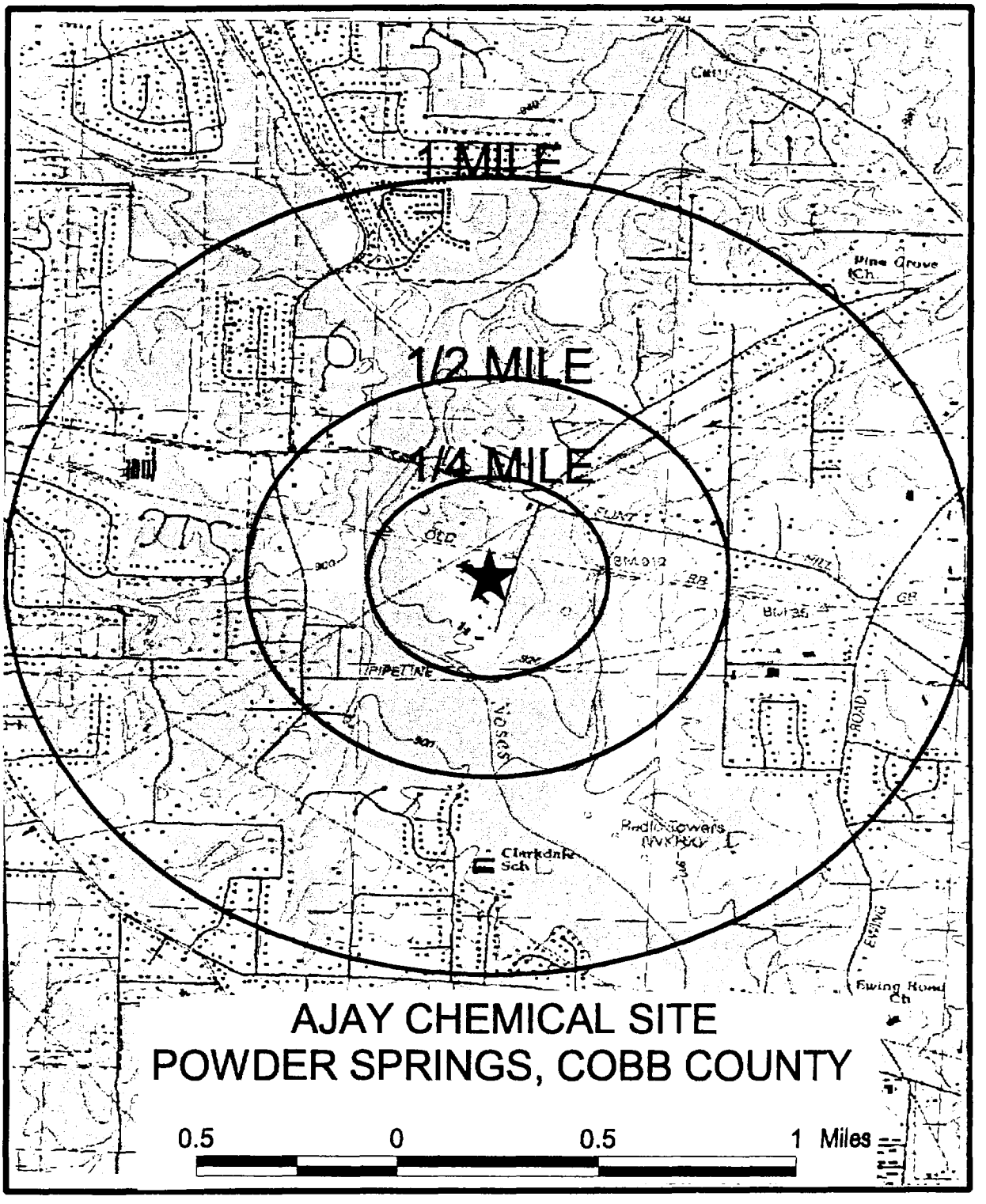


Figure 1. Location of the Ajay North America site as shown on U.S.G.S. 7.5 Minute Topographic Map, Powder Springs, Georgia.

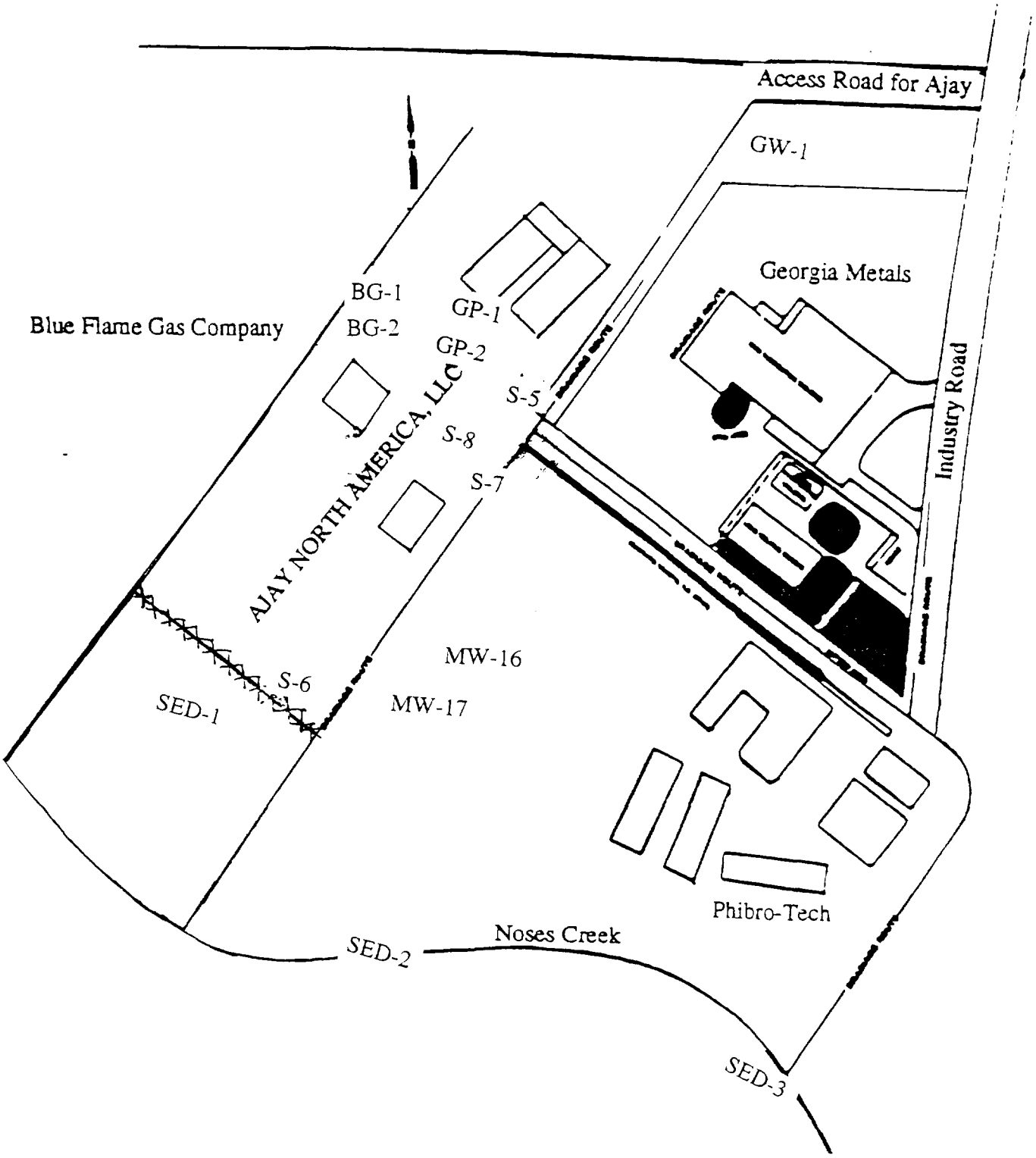


Figure 2. Ajay North America Site Layout and Sampling Locations. (This figure is taken from the Cobb County Tax Assessor's Map (Reference 3), but is not to scale).

2.3 Operational History and Waste Characteristics

Ajay North America is a producer of inorganic chemicals for both agricultural and industrial uses including cuprous iodide for military batteries, potassium iodate, an oxidizer used in the textile industry, sodium selenite, a nutrition supplement for animal feed, and zinc selenite, a glass coloring (Reference 5). In order to manufacture the selenite products it is necessary to produce selenious acid from selenium which is mixed with other compounds, including water, to make a salt. The dust from this process enters a scrubber which produces a liquor that is reused in the selenite manufacturing process. A caustic scrubber is also used in this process to reduce chlorine emissions. The process generates water that is reused in the system. According to Mr. Alan Shipp, President of Ajay North America, the only water that is discharged is the cooling water which does not come into contact with any of the material (Reference 5). The cooling water is discharged into Noses Creek. Floor washings from the drying room are collected in a small concrete floor sump and are allowed to evaporate.

During a 1987 site inspection conducted by EPD, two surface impoundments were observed on site, one lined and one unlined. The unlined impoundment was in existence since 1974 and had been used to hold discharge from the iodine manufacturing process. The discharge of this material resulted in contamination of approximately 52 tons of soil with iodate salt (Reference 5). Ajay installed a system to recover the iodine from the soil and the lined impoundment was then used for discharge from the iodine manufacturing process. Also discharged to the holding ponds were floor washings from the selenium products manufacturing area (Reference 5). Mr. Shipp explained to EPD personnel conducting the inspection that the selenium is totally consumed because two scrubbers are used for the selenium manufacturing process and floor washings are pumped through a filter system that recovers any unused selenium. At the request of EPD during the July 1987 site inspection, Ajay Chemicals sampled the sludge in the lined impoundment. There was no standing water in the unlined impoundment at the time of the inspection. The chemical analysis of the sludge material revealed that Ajay Chemical did discharge contaminants, including selenium, into the lined surface impoundment, but not at concentrations above the regulatory limits for characteristic hazardous wastes (Reference 5). Selenium was detected at a concentration of 0.75 mg/L.

The surface impoundments were dug out in February 1994. According to Mr. Shipp and Mr. Charles Pittard, also of Ajay Chemicals, material was excavated to approximately 8 feet below grade in the area of the unlined impoundment. A soil sample of this material was analyzed for volatiles, semi-volatiles, pesticides/herbicides and metals. Results indicated all constituents analyzed to be below their respective detection limits (Reference 4).

In March of 1994 EPD collected soil samples and one groundwater sample from the Georgia Metals site as part of a Site Investigation regarding lead contamination (Reference 3). The groundwater sample was obtained from a supply well on the property formerly owned by Georgia Metals. The supply well is 400 feet deep and Ajay North America uses water from this well in their production process (Appendix A4). The well is pumped at a rate of 40 gpm with the pump set at approximately 220 feet bgs. Results of the sample from the well revealed selenium at 0.1 mg/l. No lead was detected in the well and there is no known source for selenium at the Georgia Metals facility.

A review of EPD's facility file for the neighboring Phibro-Tech site revealed that selenium has been detected in monitoring wells on their property and in Noses Creek (Reference 6).

In June 1997, EPD conducted a Preliminary Assessment that verified the previous reports of the conditions at the site (Reference 7).

2.4 WASTE/SOURCE SAMPLING

2.4.1 Sample Locations

Table 1 presents the sample numbers, locations and objectives for waste samples collected during the SI. The waste, or source material, that was sampled at the site consisted of soil from the former impoundments. The soil samples were taken via a GeoProbe sampler in the vicinity of the former impoundments. The soil sample results are also discussed in the soil pathway section. Other non-source samples include drainage area sediments, groundwater from the production well and nearby monitoring wells, and sediments from Noses Creek. The non-source samples will be discussed under their respective pathways.

Table 1. Waste Sample Descriptions and Results

Sample Number	Description	Purpose of sample and constituents analyzed	Results - totals	
			Contaminant	Level (mg/kg)
GP-1 HW7694	Soil sample near former impoundment area.	Investigate possibility of hazardous constituents Analyzed for metals	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	4.7 21 4.2 160 58 24 10 <5
GP-2 HW7695	Soil sample near former impoundment area	Investigate possibility of hazardous constituents Analyzed for metals	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	4.5 18 <1 19 9.1 7.4 3.1 <5

2.4.2 Analytical Results

Table 1 presents analytical results from two soil samples collected from the former impoundment area. The were taken via GeoProbe at a depth of 6 to 8 feet. Sample results GP-1 and GP-2 were non-detect for selenium and did not exhibit elevated levels of other metals.

2.4.3 Waste/Source Conclusions

Although two soil samples were taken from the former impoundment areas, to make any conclusive determination on the absence of a source would require more sampling at a variety of depths. This is further complicated by Ajay's use of the former impoundment area as a bulk storage area complete with a concrete foundation and secondary containment. It should be noted though that Ajay did remove sludge material from the impoundments before closing them (Reference 5).

3.0 GROUNDWATER PATHWAY

3.1 Hydrogeologic Setting

Cobb County is in the central uplands district of the Piedmont physiographic province (Reference 8). The underlying geology of the area is made up of metamorphic and igneous rocks. Covering most of the area is saprolite, a clayey residual deposit produced by the weathering of the rocks. Depending on the properties of the parent rock and the topography, the saprolite in this area can range from 0 to 200 feet.

Groundwater in the area occupies joints, fractures and other secondary openings in the bedrock and pore spaces of the overlying soil. Precipitation recharges the groundwater found in these underground openings. Generally groundwater tends to flow the way of the surface topography of the area. This area slopes to the south toward Noses Creek (References 1 and 4). Groundwater flow direction, as determined from Phibro-Tech facility data, is to the south towards Noses Creek (Reference 6). Depth to groundwater in the vicinity of the site is generally about 7 feet and near Noses Creek, 4 feet or less. The well used by Ajay is pumped at a rate of 40 gpm and the effect on the water table in the vicinity of the well is not known (Reference 9).

3.2 Groundwater Targets

There are approximately 851 people within a four mile radius of the site who rely on private wells for their drinking water. Approximately four of these people live within 1/2 mile of the site (Reference 10). The Powder Springs City well, located approximately 1.7 miles from the site, supplies water to 280 connections in the old central part of the City. Powder Springs also buys drinking water from the Cobb County Water Authority that supplies water to the majority of the population within a four mile radius of the site. The Cobb County Water Authority gets its water from two surface water intakes. One intake is located on the Chattahoochee River and the other is located on Allatoona Lake.

Table 2 shows a population breakdown, by radial distance from the site, of private and public water users based on U.S. Census data (Reference 10). According to this information, no one within 1/4 mile, and only four persons within 1/2 mile of the site, draw drinking water from a private well.

Table 2: Population Using Public and Private Drinking Water

Radial Distance in Miles	0 to .25	.25 to .5	.5 to 1	1 to 2	2 to 3	3 to 4	Total
Total Population	89	242	2574	9792	15951	19207	47855
Private Well Users	0	4	36	229	299	283	851
Public Water Users	89	238	2538	9562	15652	18924	47004

3.3 Groundwater Sample Locations

Three groundwater samples were collected during the SI. The production well used by Ajay was resampled to confirm earlier results discussed in the PA. In addition, two nearby monitoring wells located on the adjacent Phibro-Tech facility were sampled. These two monitoring wells are hydraulically downgradient and are located in the expected flowpath of any groundwater contamination emanating from Ajay. The monitoring wells were purged with disposable bailers while monitoring for turbidity. MW-17 started at 199 NTUs and after 21 gallons were purged, the turbidity dropped to 2.2 NTUs. MW-16 could not be purged below 102 NTUs.

3.4 Groundwater Analytical Results

Table 3 summarizes the results of the groundwater samples. The presence of selenium (75 ppb) was confirmed in Ajay's production well which exceeds the maximum contaminant level of 50 ppb. Selenium was not detected in the two monitoring wells in the downgradient flowpath. In addition, barium was also detected in all three wells and lead in one of the monitoring wells; however, these concentrations are believed to be naturally occurring.

Table 3. Groundwater Sample Descriptions and Results.

Sample Number	Description	Purpose of sample and constituents analyzed	Results - totals	
			Contaminant (above MDL)	Level (µg/l)
GW-1 HW7696	Ajay production well	Confirmation of PA data. Analyzed for metals.	Barium Selenium	14 75
MW-16 HW7722	Groundwater sample from monitoring well at Phibro-Tech.	Investigate possibility of hazardous constituents Analyzed for metal.	Barium Lead Turbidity	44 2.8 102 NTUs
MW-17 HW7721	Groundwater sample from monitoring well at Phibro-Tech.	Investigate possibility of hazardous constituents Analyzed for metals	Barium Turbidity	89 2.2 NTUs

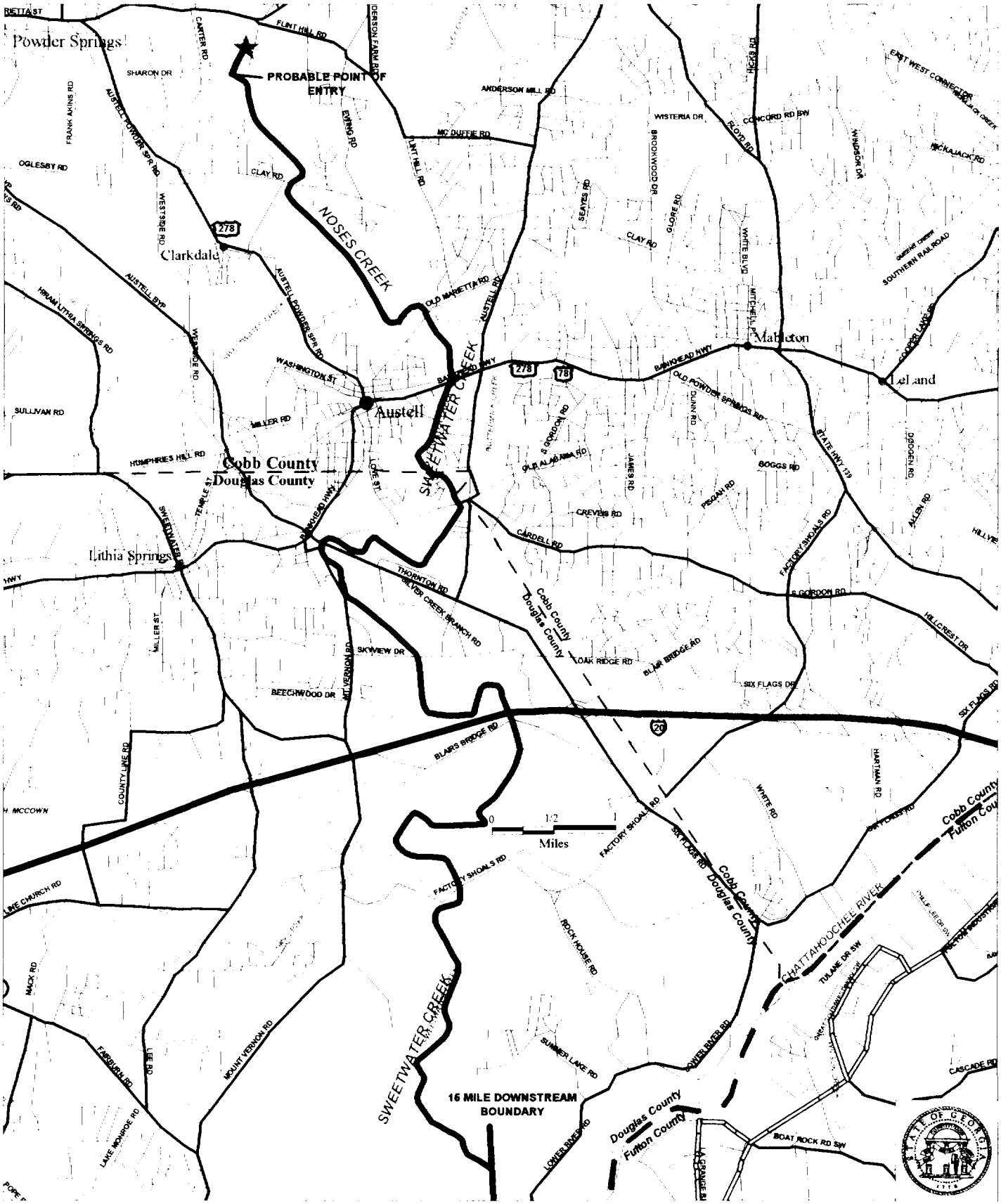
3.5 Groundwater Conclusions

Selenium has been detected in the Ajay production well (formerly owned by Georgia Metals). This well is not used for drinking water, but for process supply at Ajay. The groundwater flow direction is generally to the south towards Noses Creek and groundwater in the area may discharge to the creek. Selenium was not detected in the adjacent monitoring wells at the Phibro-Tech facility located southeast of Ajay North America nor has it been detected in the Powder Springs City well (Reference 11). Although the nearest resident drinking ground water is believed to be located within one-half mile of the site, it is not suspected that any drinking water wells have been impacted.

4.0 SURFACE WATER PATHWAY

4.1 Hydrologic Setting

The general area slopes to the south. A drainage ditch along the east side of Ajay Chemicals follows the site boundary with Georgia Metals and Phibro-Tech. The ditch leads to a small detention pond with a discharge weir at the southern end of the fenced portion of Ajay. Runoff then empties into Noses Creek south of the site by overland flow and then by following small drainage channels. Noses Creek then joins Sweetwater Creek near the City of Austell (see Figure 3). Before the installation of the detention pond, Ajay and Georgia Metals discharged their stormflow onto Phibro-Tech's facility and drainage ditch. Georgia Metals continues to discharge onto Phibro-Tech. The infiltration rate is expected to be medium since the detention pond allows for considerable infiltration to occur (Reference 4). The site is not within a 500 year floodplain (Reference 12).



Surface Water Pathway
Hydrology
County Boundary
Projected Surface Pathway
Major Highway
Major Wetland

Site Location
City/Town
Unincorporated Town

AJAY NORTH AMERICA, LLC. - POWDER SPRINGS, COBB COUNTY
15 MILE SURFACE WATER DOWNSTREAM PATHWAY

Source: 1990 Census Bureau (TIGER), US EPA (GIRAS Landuse), GA DOT (Wetlands)

4.2 Surface Water Targets

There are no drinking water intakes on the surface water pathway for a distance of 15 miles downstream of the site (Figure 3). However, these waters are used for fishing and include the waters used for recreation in Sweetwater Creek State Park. There are no federally or state designated endangered or threatened wildlife found in Cobb County (Reference 13). Six threatened or endangered plants are found in Cobb County: Draba aprica, Nestronia umbellula, Arabis georgianna, Cypripedium aculae, Cypripedium calceolus and Schisandra glabra (Reference 14). These plants are not expected to be found in the release source area given their habitats (Reference 14).

4.3 Sample Locations

Table 4 presents the sample numbers, location, and objectives for samples collected to evaluate the surface water pathway during the SI. Sediment samples were collected from the current drainage culvert and stormwater detention pond on Ajay along with the former drainage culvert leading onto Phibro-Tech's property. Downgradient sediment samples were collected from the Noses Creek before Ajay's property, at Ajay's current discharge point, and downstream of the once combined Ajay, Georgia Metals & Phibro-Tech discharge point. Surface water was not sampled due to the absence of stormwater flow during the SI.

4.4 Surface Water and Sediment Analytical Results

The sediment samples from Noses Creek show no evidence of selenium from Ajay reaching Noses Creek. However, they do show elevated levels of copper at the point where Ajay discharged along with Phibro-Tech and Georgia Metals into Noses Creek. The sediment samples collected on Ajay's facility show selenium and copper accumulation at the inflow point and discharge point, respectively and just copper accumulation in the drainage channels on Ajay's southern property . Lead appears to accumulating at S-7 at the junction where Ajay and Georgia Metals joined Phibro-Tech's drainage. Now the junction only connects Georgia Metals' drainage with Phibro-Tech's.

Table 4. Surface Water and Sediment Sample Descriptions and Results

Sample Number	Description	Purpose	Results - totals (mg/kg)	
			Contaminants	Level
SED-1 HW7686	Sediment from drainage creek south of Ajay facility that feeds into Noses Creek.	Evaluate the sediment feeding into Noses Creek from Ajay.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	<3 26 <1 7.7 230 33 2.2 <5
SED-2 HW7687	Sediment from Noses Creek located just below Ajay's current discharge point.	Evaluate the sediment in Noses Creek just below the current discharge point.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	<3 23 <1 6.6 94 6.6 <2 <5

Sample Number	Description	Purpose	Results - totals (mg/kg)	
			Contaminants	Level
SED-3 HW7688	Sediment from Noses Creek located just downstream of tributary from Ajay and Phibro-Tech	Evaluate the sediment in Noses Creek downgradient from the site in the flowpath of the former discharge point.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	5.5 110 <1 18 1100 83 5.8 <5
S-5 HW7690 S-D HW7689	Sediment from upper level drainage culvert that feeds detention pond. Sediment duplicate (S-D) taken from same location as S-5.	Evaluate sediment in culvert before entering Ajay's detention pond. For QA/QC. Results shown in brackets next to S-5 results.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	<3, [<3] 26, [27] <1, [<1] 7.4, [8.2] 50, [44] 8.3, [8.4] 3.5, [3.3] <5, [<5]
S-6 HW7691	Sediment from discharge end of Ajay's detention pond.	Evaluate sediment deposited at detention pond discharge point.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	7.8 120 <1 33 410 59 12 <5
S-7 HW7692	Sediment from former drainage culvert that led from Ajay onto Phibro-Tech's property.	Evaluate sediment that was once being discharge onto Phibro-Tech's property.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	<3 19 <1 13 54 160 2.7 <5
S-8 HW7693	Sediment from beginning of Ajay's detention pond.	Evaluate sediment deposited at detention pond inflow point.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	<3 31 <1 12 50 8.0 6.0 19

4.3 Surface Water Conclusions

A comparison of background soil sample concentrations (see Section 5.0) to sediment sample results indicate selenium and copper accumulation is occurring at the detention pond. Copper accumulation is also occurring in the drainage channels on Ajay's southern property and in Noses Creek just downgradient of the discharge point once shared with Phibro-Tech and Georgia Metals. However, selenium does not appear to be accumulating in sediments from Noses Creek. Although both Ajay and Phibro-Tech used copper in their manufacturing processes, this difference suggests that the copper accumulation in Noses Creek may be largely attributable to runoff from the Phibro-Tech facility. This is further supported by the presence of large masses of solidified

copper sludge lying in drainage ditches on the Phibro-Tech facility. As discussed in the PA, previous surface water sampling in Noses Creek showed selenium; however, the circumstances during the sampling event are not known (e.g., was a discharge occurring at the time of sampling?). In the absence of a discharge event during the SI sampling, reproducing such data was not feasible. Based on this information, the surface water pathway may be an area of concern for Ajay's facility.

5.0 SOIL AND AIR EXPOSURE PATHWAY

5.1 Physical Conditions

Ajay North America is located in an urban setting in a small industrial park. Noses Creek and a tributary to the east form the east, south, and west boundaries of the park. Flint Hill Road forms the north boundary. Ajay is surrounded by other industries on the north, west, and east. Within 1/2 mile from the facility is residential land use. Access to the site is limited by a fence around most of the property.

The area where the supply well is located and the area along the eastern property boundary is not paved. Two additional buildings have recently been constructed on site south of the main building. Operations in these two buildings have not begun. The location of the former unlined surface impoundment is paved and the location of the former lined impoundment is covered with gravel. Raw selenium used in the selenite manufacturing process was observed in one gallon containers on wood pallets while product containing selenium is bulked in 55-gallon drums in the storage area (Reference 4).

Manufacturing processes at Ajay North America are permitted by EPD's Air Quality Branch (Reference 5). These permits require that a report be filed with EPD if emissions increase for four hours or more.

5.2 Soil and Air Targets

The total population within a 4 mile radius of the site is 47,855 (Reference 10). The population within 1/4 mile of the site is 89 (Reference 7). There are no wetlands within 4 miles of the site (Reference 15). Six threatened or endangered plants are found in Cobb County but are not expected to have been impacted by the release (Reference 14).

5.3 Soil Sample Locations

Two soil samples were collected from areas where the former impoundments were located along with two background samples collected at the northwestern corner of Ajay's property near the Blue Flame Gas Company and the railroad right-of-way. Both soil samples near the impoundments were collected via GeoProbe at a depth of 6 to 8 feet. The deep background soil sample was also collected via GeoProbe at a depth of 6 to 8 feet.

5.4 Soil Analytical Results

Table 5 summarizes the soil sample results for the SI. The results do not show elevated concentrations of selenium or any other metal near the impoundment areas.

Table 5. Soil Sample Analytical Results

Sample Number	Description	Purpose of sample and constituents analyzed	Results - totals	
			Contaminant	Level (mg/kg)
BG-1 HW7684	Background sample collected at 6-8' depth.	To determine background levels at depth. Analyzed for metals.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	4.8 9.0 1.9 56 32 18 <2 <5
BG-2 HW7685	Background sample collected at surface.	To determine background levels at surface. Analyzed for metals.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	4.3 140 <1 39 34 16 9.2 <5
GP-1 HW7694	Soil sample near former impoundment area.	Investigate possibility of hazardous constituents Analyzed for metals.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	4.7 21 4.2 160 58 24 10 <5
GP-2 HW7695	Soil sample near former impoundment area	Investigate possibility of hazardous constituents Analyzed for metals.	Arsenic Barium Cadmium Chromium Copper Lead Nickel Selenium	4.5 18 <1 19 9.1 7.4 3.1 <5

5.5 Soil Exposure and Air Pathway Conclusions

Although a separate SI for the adjacent Georgia Metals showed elevated concentrations of metals, primarily lead but also including selenium, soil sample results taken during the Ajay SI do not show elevated concentrations of selenium or other metals. However, it should be noted that the SI investigation concentrated on determining whether any remaining selenium exists in the former impoundments at Ajay. Since Ajay continues to manufacture selenium-based products, it is expected that future exposure to selenium is possible for workers and others entering the facility. Migration of soil contamination via runoff is addressed in the surface water pathway section.

Releases to the air above permitted levels are not known to have occurred at the facility. As stated in the PA, no reports of increased emissions have been submitted to EPD for this facility (Reference 7). During the SI sampling, odors were noted at the facility; however, the odors may have been associated with emissions allowed under Ajay's air quality permit. Exposure to an air release by workers or nearby residents beyond what is allowed by Ajay's permit is not suspected.

6.0 SUMMARY AND CONCLUSIONS

Ajay North America produces inorganic chemicals for both agricultural and industrial uses. Two surface impoundments, one lined and one unlined, were formerly located at the facility and were used to collect discharge from the iodine manufacturing process as well as floor washings from the selenium products manufacturing area. Soil from the unlined impoundment was excavated and disposed of in 1994 and the lined impoundment was also excavated in 1994. Selenium has been detected in groundwater, surface water and soil at locations near the facility. The likelihood of human exposure to selenium contaminated drinking water is minimal since selenium has only been detected in the upgradient Ajay production well and sporadically in downgradient monitoring wells located at the adjacent Phibro-Tech facility. In addition, there are no downgradient drinking water wells between the facility and Noses Creek. Selenium has been periodically detected in Noses Creek at a location closest to the Ajay North America facility; however, the stormflow circumstances at the time of detection are not known. Sampling locations further downstream along Noses Creek have not detected selenium. Although there is no known current exposure, the facility is active so future exposure to contaminated soil is possible for workers at the facility; however access to the site is limited by a fence so nearby residents or workers should not be affected. A release to the air is likely to have occurred or is still ongoing due to normal manufacturing processes; however, it is not suspected to have exceeded Ajay's permit limitations.

REFERENCES

1. United States Geological Survey (U.S.G.S.) 7.5' Topographic Quadrangles; Austell, Lost Mountain, Mableton, and Marietta, Georgia.

2. Soil Survey of Cobb County, Georgia, Grover J. Thomas, Jr., Soil Conservation Service, Issued December 1973.

3. Facility File, Georgia Metals, Inc., Georgia Department of Natural Resources (DNR), Environmental Protection Division (EPD), Hazardous Waste Management Branch.

4. Site Reconnaissance, Ajay Chemicals, Inc., Powder Springs, Georgia, Nicole Long of Georgia Environmental Protection Division, June 26, 1997.

5. Facility File, Ajay Chemicals, Inc., Georgia DNR, EPD, Hazardous Waste Management Branch, Generator Compliance Program

6. Phibro-Tech, Inc., Semi-Annual Groundwater Monitoring Reports, 1990-1997, Facility File, Georgia DNR, EPD, Hazardous Waste Management Branch, Land Disposal Unit.

7. Preliminary Assessment for Ajay North America L.L.C., Nicole Long, Hazardous Waste Management Branch, Georgia EPD, June 30, 1997.

8. "Ground Water in the Greater Atlanta Region", C.W. Cressler, C.J. Thurmond and W.G. Hester, Georgia Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey, Information Circular 63, 1983.

9. Field Notebook, Site Investigation Sampling Visits, June 9 and 17, 1998.

10. CENTRACTS data, Frost Associates, Essex, CT, Feb. 27, 1996.

11. Drinking Water Files, Cobb County, Georgia DNR, EPD, Water Resources Management Branch.

12. Flood Insurance Rate Map, National Flood Insurance Program, Federal Emergency Management Agency, Map Number 13067C0070 F.

13. "Georgia's Protected Wildlife", Ron Odom, Jerry McCollum, Mary Neville and David Ettman of the Georgia Department of Natural Resources, 1991.

14. "Georgia's Protected Plants", Jerry McCollum and David Ettman of the Georgia Department of Natural Resources, 1991.

15. National Wetlands Inventory Maps, U.S. Fish and Wildlife Service, Austell, Ben Hill, Campbellton and Mableton, Georgia.

OVERSIZED

DOCUMENT

UNSCANNABLE

MEDIA

(PHOTOGRAPHS)

84 6/9/98 Ajay SE
Sunny ~75°F

9:05 arrive on-site. Notified Charlie Pittard + Fred Larsen of Ajay North America, LLC that we were here to sample.

from EPD: Thomas Williams
Bob Pierce
Xiaobing Chen
Sarah Merchant
David Brownlee
Montague McPherson

Thomas, Bob + Xiabing went to take soil borings in the

Water supply well on Georgia Metals
Well bored 400', pump @ 220'
casing 20'. 40 gpm.
current pump 7.5 horsepower.
no water level measurements.

9:30 am D. Brownlee collected GW-1 from H_2O supply well.
Split sample with Charlie Pittard

6/9/98 Ajay SE

85

Mr. Pittard stated the well has always had problems with chloride. The well is not used for drinking (just non-contact water).

9:40 am we (David, Monty + Sarah) are going to get ice, distilled H_2O and find Martha Pierce @ Phibrotech

10:00 am return to site. Martha Pierce said Phibrotech is closed + wells are locked. She will be able to get us access.

We went + located the sediment/soil samples down-gradient of the facility

The GeoProbe team is set up on the 2nd boring.

6/9/98 Ajay SI

10:15 David + Martha are going to spot out the sampling locations on Phibro-Tech's property.

10:20 Montague + I set up on the sediment sampling. S-8 located in Ajay drainage culvert. Split soil sample w/ Fred Larson - Ajay

10:30 sampling S-7 in the other drainage culvert along the Ajay property line.

10:40 end of drainage culvert - S-6 collected by Monty. ~~split with Fre~~ Fred did not have enough bottles to collect split

6/9/98 Ajay SI

87

~~10:40~~

10:50 Montague McPherson collected the surface background sample (BG-2). next to the deep geoprobe sample.

11:00 am Montague collected S-5 and duplicate S-D.

Not finished Ajay sampling

11:15 am moved to Phibro-Tech property to collect sediment samples.

11:30 am found pooled water behind Ajay property that is a result of overflow from the on-site drainage collected SED-4. Probable entry point from facility.

11:45am found Noses Creek downstream from PhibroTech property. Stream is ~ 40 feet wide and 1-3' deep. Using extended dipper - collected sediment in sand bar adjacent to N bank. Collected SED-3

12:00pm found where tributary from Phibro/Ajay flows into Noses Creek - Collected SED-2

12:10pm finished sampling - left site.

9:45am arrived on site to sample MW16 + MW17 meet Steve Cole of Lake Engineering who opens the wells for us. Jane Hendricks Sarah Merchant Martha Pierce from EPD.

Set up on MW-17 which is further downgradient. Well was locked + in good condition

6.90 DtoW
16.03 TD

16.03
- 6.90
9.13
0.167
6391

1.42 gallon
x 3
4.26

5478
913
14247

~~88~~ 20 AJAY SI 6/17/98

10:15 AM set up to bail MW-17. Water level was cleaned w/ isopropyl + alconox mix.

Dedicated bailer from the well was used for bailing/sampling.

6 gal		144 Turb
12 gal		199
15 gal		86
18 gal		20
21 gal		24
+ 1 liter		2.4
+ 1 liter		8.4
		2.2

11:30 collected sample MW-17

MW-16 11:40 AM AJAY SI 6/17/98

6.82 D to W

15.81 TD

12:00

6 gal	~199 Turb
12 gal	56
15 gal	96
16.5 gal	152

collected sample because well was going dry + turbidity was increasing.

- Left site, left labeled drum.
- Took samples to Georgia Epi lab in Atlanta

Spm

REQUEST FOR LABORATORY ANALYSIS

JLJ

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7684

(File a separate Request Sheet for each sample point)

Georgia Dept. of Natural Resources

AC11357 Due date: [illegible]
Date Submitted: 06/09/98
Source: [illegible] AJAY N. AMERICA, LLC [illegible] B-61

Analysis Needed By: Routine ✓ Oth

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):
Background sample from 6-8' subsurface

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___		
Volatiles	___	[redacted]	
Pesticides	___		
Herbicides	___	___	4 OZ. JARS
Organophosphorous Pesticides	___	___	8 OZ. JARS
PCB	___	✓	16 OZ. JARS
BETX	___		
Total Petroleum Hydrocarbon	___		

Organics Special Request: ___

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB):	___	Date:	___	Received By (EPD Lab):	___
Approved By (HWMB):	___	Date:	___	Date (EPD Lab):	___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	**AC11357**
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	10:00
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7684
Sample Site:	AJAY N AMERICA LLC BG-1 HW7684		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	4.8		mg/kg	PT	06/22/98
	Barium	01008	6010	1	9.0		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	1.9		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	56		mg/kg	PT	06/22/98
	Copper	01043	6010	2	32		mg/kg	PT	06/22/98
	Lead	01052	6010	5	18		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	Not detected		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	not detected		mg/kg	PT	06/22/98

Sample comments :

BACKGROUND SAMPLE FROM 6-8 SUBSURFACE

End of Report

PARAMETER CODE: EPA
ug/l : micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

REQUEST FOR LABORATORY ANALYSIS

JLJ

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7685

(File a separate Reqest Sheet for each sample point)

AC11358 Due date: [illegible]

Date submitted: [illegible]

Source_I: [illegible] AJAY N. AMERICA, LLC [illegible]

Analysis Needed By: Routine ✓ Other

Sample Description (check one)

Waste	___	Soil/Sed.....	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Background sample (surface)

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

— 4 OZ. JARS
— 8 OZ. JARS
I 16 OZ. JARS

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

Organics Special Request: ___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB):	___	Date:	___	Received By (EPD Lab):	___
Approved By (HWMB):	___	Date:	___	Date (EPD Lab):	___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	**AC11358**
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	10:50
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7685
Sample Site:	AJAY N. AMERICA, LLC HW7685		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	4.3		mg/kg	PT	06/22/98
	Barium	01008	6010	1	140		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	Not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	39		mg/kg	PT	06/22/98
	Copper	01043	6010	2	34		mg/kg	PT	06/22/98
	Lead	01052	6010	5	16		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	9.2		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	not detected		mg/kg	PT	06/22/98

Sample comments :

BACKGROUND SAMPLE SURFACE

End of Report

PARAMETER CODE: EPA
ug/l : micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

REQUEST FOR LABORATORY ANALYSIS

JLJ

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 76846

(File a separate Request Sheet for each sample point)

AC11359

Analysis Needed By: Routine ✓ Other (sp

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Sediment sample

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

___ 4 OZ. JARS
___ 8 OZ. JARS
I 16 OZ. JARS

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

Organics Special Request: ___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB):	___	Date:	___	Received By (EPD Lab):	___
Approved By (HWMB):	___	Date:	___	Date (EPD Lab):	___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	**AC11359**
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	12:00
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7686
Sample Site:	AJAY N. AMERICA, LLC HW7686		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	Not detected		mg/kg	PT	06/22/98
	Barium	01008	6010	1	26		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	Not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	7.7		mg/kg	PT	06/22/98
	Copper	01043	6010	2	230		mg/kg	PT	06/22/98
	Lead	01052	6010	5	33		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	2.2		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	not detected		mg/kg	PT	06/22/98

Sample comments :
SEDIMENT SAMPLE

End of Report

PARAMETER CODE: EPA
ug/l : micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

REQUEST FOR LABORATORY ANALYSIS

JLJ

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7687

(File a separate Request Sheet for each sample point)

AC11360

Date Submitted: 06/09/98

Analysis Needed By: Routine ✓ Other (e)

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Sediment Sample

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

___ 4 OZ. JARS
___ 8 OZ. JARS
I 16 OZ. JARS

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

Organics Special Request: ___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB): ___ Date: ___ Received By (EPD Lab): ___

Approved By (HWMB): ___ Date: ___ Date (EPD Lab): ___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	**AC11360**
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	11:45
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7687
Sample Site:	AJAY N. AMERICA, LLC HW7687		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	Not detected		mg/kg	PT	06/22/98
	Barium	01008	6010	1	23		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	Not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	6.6		mg/kg	PT	06/22/98
	Copper	01043	6010	2	94		mg/kg	PT	06/22/98
	Lead	01052	6010	5	6.6		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	Not detected		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	not detected		mg/kg	PT	06/22/98

Sample comments :
SEDIMENT SAMPLE

End of Report

PARAMETER CODE: EPA
: micrograms/liter
...g/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

REQUEST FOR LABORATORY ANALYSIS

JLJ

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7688

(File a separate Request Sheet for each sample point)

AC11361

Analysis Needed By: Routine ✓ Othe

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Sediment Sample

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

— 4 OZ. JARS
— 8 OZ. JARS
I 16 OZ. JARS

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

Organics Special Request: ___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB):	___	Date:	___	Received By (EPD Lab):	___
Approved By (HWMB):	___	Date:	___	Date (EPD Lab):	___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	AC11361
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	11:30
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7688
Sample Site:	AJAY N. AMERICA, LLC HW7688		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	5.5		mg/kg	PT	06/22/98
	Barium	01008	6010	1	110		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	Not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	18		mg/kg	PT	06/22/98
	Copper	01043	6010	2	1100		mg/kg	PT	06/22/98
	Lead	01052	6010	5	83		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	5.8		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	not detected		mg/kg	PT	06/22/98

Sample comments :
SEDIMENT SAMPLE

End of Report

PARAMETER CODE: EPA
ug/l : micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

REQUEST FOR LABORATORY ANALYSIS

JLJ

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7689

(File a separate Request Sheet for each sample point)

AC11362 Due date: [illegible]
Date submitted: 06/09/98
Source: ADHOC AJAY N. AMERICA, LLC water
[illegible]

Analysis Needed By: Routine ✓ Other

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Soil Sample

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

___ 4 OZ. JARS
___ 8 OZ. JARS
I 16 OZ. JARS

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

Organics Special Request: ___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB):	___	Date:	___	Received By (EPD Lab):	___
Approved By (HWMB):	___	Date:	___	Date (EPD Lab):	___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	**AC11362**
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	11:00
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7689
Sample Site:	AJAY N. AMERICA, LLC HW7689		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	Not detected		mg/kg	PT	06/22/98
	Barium	01008	6010	1	27		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	Not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	8.2		mg/kg	PT	06/22/98
	Copper	01043	6010	2	44		mg/kg	PT	06/22/98
	Lead	01052	6010	5	8.4		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	3.3		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	not detected		mg/kg	PT	06/22/98

Sample comments :

SOIL SAMPLE

End of Report

PARAMETER CODE: EPA
ug/l : micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

REQUEST FOR LABORATORY ANALYSIS

JLJ

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 769C

(File a separate Reqest Sheet for each sample point)

AC11363

Analysis Needed By: Routine ✓ Oth

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Soil Sample

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

___ 4 OZ. JARS
___ 8 OZ. JARS
1 16 OZ. JARS

Organics Special Request: ___

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB):	___	Date:	___	Received By (EPD Lab):	___
Approved By (HWMB):	___	Date:	___	Date (EPD Lab):	___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	AC11363
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	11:00
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7690
Sample Site:	AJAY N. AMERICA, LLC HW7690		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	`rsenic	01003	6010	3	not detected		mg/kg	PT	06/22/98
	ɜarium	01008	6010	1	26		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	Not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	7.4		mg/kg	PT	06/22/98
	Copper	01043	6010	2	50		mg/kg	PT	06/22/98
	Lead	01052	6010	5	8.3		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	3.5		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	not detected		mg/kg	PT	06/22/98

Sample comments :

SOIL SAMPLE

End of Report

\RAMETER CODE: EPA
l : micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

HAZARDOUS WASTE MANAGEMENT BRANCH (HWMB)

REQUEST FOR LABORATORY ANALYSIS

JLJ

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7691

(File a separate Reqest Sheet for each sample point)

Georgia Dept. of Natural Resources

AC11364 Due date: [illegible]

Date submitted: 06/09/98

Source_I: ADHCC AJAY N. AMERICA, LLC HW7691

Sample collector: [illegible]

Analysis Needed By: Routine ✓ Other

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

~~Soil~~ Soil Sample

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

— 4 OZ JARS
— 8 OZ JARS
⊥ 16 OZ JARS

Organics Special Request: ___

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB): ___ Date: ___ Received By (EPD Lab): ___

Approved By (HWMB): ___ Date: ___ Date (EPD Lab): ___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	AC11364
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	10:40
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7691
Sample Site:	AJAY N. AMERICA, LLC HW7691		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	rsenic	01003	6010	3	7.8		mg/kg	PT	06/22/98
	Barium	01008	6010	1	120		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	33		mg/kg	PT	06/22/98
	Copper	01043	6010	2	410		mg/kg	PT	06/22/98
	Lead	01052	6010	5	59		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	12		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	Not detected		mg/kg	PT	06/22/98

Sample comments :

SOIL SAMPLE

End of Report

RAMETER CODE: EPA
µ/l : micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

JLJ

REQUEST FOR LABORATORY ANALYSIS

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7692

(File a separate Request Sheet for each sample point)

Georgia Dept. of Natural Resources

AC11365 Due date: [illegible]
Date submitted: 06/09/98
source_I: ADHOC AJAY N. AMERICA, LLC HW7692
[illegible]

Analysis Needed By: Routine ✓ Other ([illegible]

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Soil Sample

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

___ 4 OZ. JARS
___ 8 OZ. JARS
1 16 OZ. JARS

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

Organics Special Request: ___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB): ___ Date: ___ Received By (EPD Lab): ___

Approved By (HWMB): ___ Date: ___ Date (EPD Lab): ___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	**AC11365**
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	10:30
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7692
Sample Site:	AJAY N. AMERICA, LLC HW7692		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	Not detected		mg/kg	PT	06/22/98
	Barium	01008	6010	1	19		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	13		mg/kg	PT	06/22/98
	Copper	01043	6010	2	54		mg/kg	PT	06/22/98
	Lead	01052	6010	5	160		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	2.7		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	Not detected		mg/kg	PT	06/22/98

Sample comments :

SOIL SAMPLE

End of Report

PARAMETER CODE: EPA
: micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:			
	Inorganics:	Pat Sammons	Ext. 5239
	Metals :	Harjinder Ghuman	Ext. 5223
	Organics:	Danny Reed	Ext. 5252
	GC Mass Spec:	Steve Bryan	Ext. 5260

JLJ

REQUEST FOR LABORATORY ANALYSIS

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7693

(File a separate Reqest Sheet for each sample point)

Georgia Dept. of Natural Resources

AC11366 Due date: 07/07/98
Date submitted: 06/09/98
source_I: ADHOC AJAY N. AMERICA, LLC HW7693
sample collector: [illegible]

Analysis Needed By: Routine ✓ Other

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Soil sample

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

___ 4 OZ. JARS
___ 8 OZ. JARS
1 16 OZ. JARS

Organics Special Request: ___

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB): ___ Date: ___ Received By (EPD Lab): ___

Approved By (HWMB): ___ Date: ___ Date (EPD Lab): ___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	**AC11366**
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	10:25
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7693
Sample Site:	AJAY N. AMERICA, LLC HW7693		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	Not detected		mg/kg	PT	06/22/98
	Barium	01008	6010	1	31		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	12		mg/kg	PT	06/22/98
	Copper	01043	6010	2	50		mg/kg	PT	06/22/98
	Lead	01052	6010	5	8.0		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	6.0		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	19		mg/kg	PT	06/22/98
	Silver	01078	6010	3	not detected		mg/kg	PT	06/22/98

Sample comments :

SOIL SAMPLE

End of Report

PARAMETER CODE: EPA
: micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:			
	Inorganics:	Pat Sammons	Ext. 5239
	Metals :	Harjinder Ghuman	Ext. 5223
	Organics:	Danny Reed	Ext. 5252
	GC Mass Spec:	Steve Bryan	Ext. 5260

REQUEST FOR LABORATORY ANALYSIS

JLJ

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7694

(File a separate Reqest Sheet for each sample point)

Georgia Dept. of Natural Resources

AC11367 Due date: [illegible]
Date submitted: 06/09/98
Source_I: ADHOC AJAY N. AMERICA, LLC HW7694

Analysis Needed By: Routine ✓ Other (

Sample Description (check one)

Waste	___	Soil/Sediment	✓	Sludge	___
Ground Water	___	Surface Water	___	Drinking Water Well	___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Subsurface soil, Geoprobe.

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	___
Volatiles	___
Pesticides	___
Herbicides	___
Organophosphorous Pesticides	___
PCB	___
BETX	___
Total Petroleum Hydrocarbon	___

— 4 OZ. JARS
— 8 OZ. JARS
I 16 OZ. JARS

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	___
Metals Special Request:	___

Organics Special Request: ___

3. TCLP ORGANICS

Volatiles	___	Pesticides	___
Semi-Volatiles (Acid & Base/Neutral)	___	Herbicides	___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	___	Additional Metals For TCLP:	___
Mercury	___		

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB): ___ Date: ___ Received By (EPD Lab): ___

Approved By (HWMB): ___ Date: ___ Date (EPD Lab): ___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	AC11367
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	00:00
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7694
Sample Site:	AJAY N. AMERICA, LLC HW7694		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	4.7		mg/kg	AAR	06/26/98
	Barium	01008	6010	1	21		mg/kg	AAR	06/26/98
	Cadmium	01028	6010	1	4.2		mg/kg	AAR	06/26/98
	Chromium	01029	6010	2	160		mg/kg	AAR	06/26/98
	Copper	01043	6010	2	58		mg/kg	AAR	06/26/98
	Lead	01052	6010	5	24		mg/kg	AAR	06/26/98
	Nickel	01068	6010	2	10		mg/kg	AAR	06/26/98
	Selenium	01148	6010	5	not detected		mg/kg	AAR	06/26/98
	Silver	01078	6010	3	not detected		mg/kg	AAR	06/26/98

Sample comments :

SUBSAMPLE SOIL, GEOPROBE

End of Report

RAMETER CODE: EPA
: micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

REQUEST FOR LABORATORY ANALYSIS

Facility Name/Location: AJAY North American, LLC

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7695

(File a separate Reqest Sheet for each sample point)

Georgia Dept. of Natural Resources

AC11368 Due date: 07/07/98
Date submitted: 06/09/98
Source_I: 40400 AJAY N. AMERICA, LLC HW7695
Sample Collector: [illegible]

Analysis Needed By: Routine ✓ Other

Sample Description (check one)

Waste		Soil/Sediment	✓	Sludge	
Ground Water		Surface Water		Drinking Water Well	

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

Subsurface soil, Geoprobe

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral)	
Volatiles	
Pesticides	
Herbicides	
Organophosphorous Pesticides	
PCB	
BETX	
Total Petroleum Hydrocarbon	

— 4 OZ. JARS
T 8 OZ. JARS
— 16 OZ. JARS

Organics Special Request: ___

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)	✓
Mercury	
Metals Special Request:	

3. TCLP ORGANICS

Volatiles		Pesticides	
Semi-Volatiles (Acid & Base/Neutral)		Herbicides	

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se)		Additional Metals For TCLP:	
Mercury			

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB): ___ Date: ___ Received By (EPD Lab): ___

Approved By (HWMB): ___ Date: ___ Date (EPD Lab): ___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	**AC11368**
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	00:00
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7695
Sample Site:	AJAY N. AMERICA, LLC HW7695		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HW SOLIDS***								
	Arsenic	01003	6010	3	4.5		mg/kg	PT	06/22/98
	Barium	01008	6010	1	18		mg/kg	PT	06/22/98
	Cadmium	01028	6010	1	not detected		mg/kg	PT	06/22/98
	Chromium	01029	6010	2	19		mg/kg	PT	06/22/98
	Copper	01043	6010	2	9.1		mg/kg	PT	06/22/98
	Lead	01052	6010	5	7.4		mg/kg	PT	06/22/98
	Nickel	01068	6010	2	3.1		mg/kg	PT	06/22/98
	Selenium	01148	6010	5	not detected		mg/kg	PT	06/22/98
	Silver	01078	6010	3	not detected		mg/kg	PT	06/22/98

Sample comments :

SUBSAMPLE SOIL, GEOPROBE

End of Report

PARAMETER CODE: EPA
ug/l : micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

REQUEST FOR LABORATORY ANALYSIS

Facility Name/Location: AJAY North American, LLC JLJ

Sample Collected By/Phone: Chen et al.

Collection Date: 6/9/98

Date Submitted To Lab: 6/9/98

HWMB LOG NUMBER: 7696

(File a separate Reqest Sheet for each sample point)

Georgia Dept. of Natural Resources

GW-1

AC11369 Due date: [illegible]
Date submitted: 06/09/98
Source_I: ADHOC AJAY N. AMERICA, LLC [illegible]
Sample collection [illegible]

Analysis Needed By: Routine ✓ Other (sp

Sample Description (check one)

Waste ___ Soil/Sediment ___ Sludge ___

Ground Water ___ Surface Water ___ Drinking Water Well ✓

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

~~Subsurface soil, [illegible]~~

Supply well sample

Applicable Hazardous Waste Codes (if known) ___ ___ ___

Special Precautions: ___

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral) ___

Volatiles ___

Pesticides ___

Herbicides ___

Organophosphorous Pesticides ___

PCB ___

BETX ___

Total Petroleum Hydrocarbon ___

Organics Special Request: ___

1-metals

~~4 OZ. JARS~~

~~8 OZ. JARS~~

~~16 OZ. JARS~~

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se) ✓

Mercury ___

Metals Special Request: ___

3. TCLP ORGANICS

Volatiles ___ Pesticides ___

Semi-Volatiles (Acid & Base/Neutral) ___ Herbicides ___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se) ___ Additional Metals For TCLP: ___

Mercury ___

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB): ___ Date: ___ Received By (EPD Lab): ___

Approved By (HWMB): ___ Date: ___ Date (EPD Lab): ___

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	CHEN	**Sample ID :**	**AC11369**
Date Received:	06/09/98	**Date Collected:**	06/09/98
Time Received:	15:39	**Time Collected:**	09:30
Reporting Date:	06/30/98	**DNR Lab Reference:**	HW7696
Sample Site:	AJAY N. AMERICA, LLC HW7696		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***ICP METALS FOR HAZARDOUS WASTE***								
	Arsenic	01003	6010	30	Not detected		ug/l	PT	06/11/98
	Barium	01008	6010	10	14		ug/l	PT	06/11/98
	Cadmium	01028	6010	5	not detected		ug/l	PT	06/11/98
	Chromium	01029	6010	20	not detected		ug/l	PT	06/11/98
	Lead	01052	6010	50	Not detected		ug/l	PT	06/11/98
	Nickel	01068	6010	20	not detected		ug/l	PT	06/11/98
	Selenium	01148	6010	50	75		ug/l	PT	06/11/98
	Silver	01078	6010	30	not detected		ug/l	PT	06/11/98

Sample comments :

SUPPLY WELL SAMPLE

End of Report

RAMETER CODE: EPA
: micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
HAZARDOUS WASTE MANAGEMENT BRANCH

CHAIN OF CUSTODY

FACILITY: AJAY North America, LLC **LOCATION:** _____

SAMPLE #	HWMB LOG #	LAB #	DESCRIPTION	COLLECTED BY (NAME)	DATE	TIME
BG-1	7684		Background soil sample	Chen	6/9/98	AM
BG-2	7685		Background soil sample	McPherson	6/9/98	10:50am
Sed-2	7686		Sediment sample	Brownlee	6/9/98	12:00 n
Sed-3	7687		Sediment Sample	Brownlee	6/9/98	11:45am
Sed-4	7688		"	"	"	11:30am
S-D	7689		Soil sample	McPherson	"	11:00 am
S-5	7690		Soil sample	McPherson	"	11:00am
S-6	7691		Soil Sample	McPherson	"	10:40am

TRANSFER RECORD

TRANSFERRED BY (NAME)	TO (NAME) (IF FINAL: LAB NAME)	DATE	TIME	METHOD OF TRANSFER	RECEIVED BY (NAME)	DATE
					Steven Harfel-Lock	6-9-98

ANALYSIS REQUESTED: _____

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
HAZARDOUS WASTE MANAGEMENT BRANCH

CHAIN OF CUSTODY

FACILITY: AJAY North American LLC **LOCATION:**

SAMPLE #	HWMB LOG #	LAB #	DESCRIPTION	COLLECTED BY (NAME)	DATE	TIME
S-7	7692		Soil Sample	McPherson	6/9/98	10:30am
S-8	7693		Soil Sample	McPherson	"	10:25am
GP-1	7694		Soil Sample	Chen	"	AM
GP-2	7695		Soil Sample	Chen	"	AM
GW-1	7696		Supply well sample	Brownlee	"	9:30am

TRANSFER RECORD

TRANSFERRED BY (NAME)	TO (NAME) (IF FINAL: LAB NAME)	DATE	TIME	METHOD OF TRANSFER	RECEIVED BY (NAME)	DATE
McPherson/Chen	Lab	6-9-98	15:10	Hand	[illegible]	6-9-98

ANALYSIS REQUESTED:

-HL

Facility Name/Location: AJAY SI - AUSTELL, COBB COUNTY

Sample Collected By/Phone: SARAH MERCHANT (404) 657-8600

Collection Date: 6/17/98 12:45pm

Date Submitted To Lab: 6/17/98 2:35pm

HWMB LOG NUMBER: HW 7722 /MW16

(File a separate Reqest Sheet for each sample point)

Georgia Dept. of Natural Resources

Analysis Needed By: Routine ✓ Other (specify): –

AC12479 Due date: 07/15/98
Date submitted: 06/17/98
source_I: ADHOC AJAY SI-AUSTELL COBB HW7722
Sample collector: S MERCHANT

Sample Description (check one)

Waste ___ Soil/Sediment ___

Ground Water ✓ Surface Water ___ Drinking Water Well ___

Conncentration of Organics Requested (estimated): High ___ Low ___ Other (e.g., rinse blank - specify) ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):
low levels of selenium suspected

Applicable Hazardous Waste Codes (if known) n/a

Special Precautions: none known

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result.)

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral) ___
Volatiles ___
Pesticides ___
Herbicides ___
Organophosphorqus Pesticides ___
PCB ___
BETX ___
Total Petroleum Hydrocarbon ___

OIL AND GREASE ___
SULFIDES/PHENOLS ___
VOC VIALS ___
AMBER BOTTLES ___
METAL BOTTLES ___
FCOL BOTTLES ✓
NUTRIENTS/SULFATES ___
HALF GALLONS/CYANIDE ___

Organics Special Request: ___

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se) ✓
Mercury ___
Metals Special Request: ___

3. TCLP ORGANICS

Volatiles ___
Semi-Volatiles (Acid & Base/Neutral) ___
Pesticides ___
Herbicides ___
Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se) ___
Mercury ___
Additional Metals For TCLP: ___

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB): ___ Date: ___ Received By (EPD Lab): AML

Approved By (HWMB): ___ Date: ___ Date (EPD Lab): 6-17-98

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	S MERCHANT	**Sample ID :**	**AC12479**
Date Received:	06/17/98	**Date Collected:**	06/17/98
Time Received:	14:55	**Time Collected:**	12:45
Reporting Date:	08/04/98	**DNR Lab Reference:**	HW7722
Sample Site:	AJAY SI-AUSTELL COBB HW7722		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***Arsenic 01002***								
	Arsenic	01002	206.2	25	Not detected		ug/l	CAS	06/25/98
Metals	***ICP METALS FOR HAZARDOUS WASTE***								
	Barium	01007	6010	10	44		ug/l	PT	06/25/98
	Cadmium	01027	6010	5	Not detected		ug/l	PT	06/25/98
	Chromium	01034	6010	20	Not detected		ug/l	PT	06/25/98
	Nickel	01067	6010	20	Not detected		ug/l	PT	06/25/98
	Silver	01077	6010	30	Not detected		ug/l	PT	06/25/98
Metals	***Lead 01051***								
	Lead	01051	239.2	1.3	2.8		ug/l	CN	06/26/98
Metals	***Selenium 01147***								
	Selenium	01147	270.2	5	Not detected		ug/l	CAS	06/25/98

Sample comments :

End of Report

RAMETER CODE: EPA
: micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

Facility Name/Location: AJAX SI - AUSTELL COBB COUNTY

Sample Collected By/Phone: SARAH MERCHANT (404) 657-8600

Collection Date: 6/17/98 11:30am

Date Submitted To Lab: 6/17/98 2:35pm LAB No. _____

HWMB LOG NUMBER: HW7721 /MW17

(File a separate Reqest Sheet for each sample point)

Georgia Dept. of Natural Resources

Analysis Needed By: Routine ✓ Other (specify)

Sample Description (check one)

Waste ___ Soil/Sediment

Ground Water ✓ Surface Water

AC12480 Due date: 07/15/98
Date submitted: 06/17/98
source_id: ADHOC AJAX SI-AUSTELL COBB HW7721
Sample collector: S MERCHANT

Concentration of Organics Requested (estimated): High ___ Low ___

Describe Sample Including Source And Known Properties (e.g., pH, concentration):

low levels of selenium suspected

Applicable Hazardous Waste Codes (if known) n/a

Special Precautions: none known

ANALYSIS REQUIRED

(Note: Totals will always be run first. A TCLP will subsequently be run only if the total value indicates a positive TCLP could result

1. TOTAL ORGANICS

Semi-Volatiles (Acid & Base/Neutral) ___

Volatiles ___

Pesticides ___

Herbicides ___

Organophosphorous Pesticides ___

PCB ___

BETX ___

Total Petroleum Hydrocarbon ___

Organics Special Request: ___

OIL AND GREASE ___

SULFIDES/PHENOLS ___

VOC VIALS ___

AMBER BOTTLES ___

METAL BOTTLES ✓

FCOL BOTTLES ___

NUTRIENTS/SULFATES ___

HALF GALLONS/CYANIDE ___

2. TOTAL METALS

ICP Metals Scan (Ag, As, Ba, Cd, Cr, Ni, Pb, Se) ✓

Mercury ___

Metals Special Request: ___

3. TCLP ORGANICS

Volatiles ___

Semi-Volatiles (Acid & Base/Neutral) ___

Pesticides ___

Herbicides ___

Additional Specific Organics For TCLP: ___

4. TCLP METALS ANALYSIS

TCLP Metals (Ag, As, Ba, Cd, Cr, Ni, Pb, Se) ___

Mercury ___

Additional Metals For TCLP: ___

5. ADDITIONAL ANALYSIS REQUESTED (see list on back): ___

Reviewed By (HWMB): ___ Date: ___ Received By (EPD Lab): AHL

Approved By (HWMB): ___ Date: ___ Date (EPD Lab): 6-17-98

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

455 14th Street NW, Atlanta, GA 30318-7900
(404) 206-5269

Hazardous Waste Management Program

LABORATORY REPORT

TO:

Sample Collector:	S MERCHANT	**Sample ID :**	**AC12480**
Date Received:	06/17/98	**Date Collected:**	06/17/98
Time Received:	14:55	**Time Collected:**	11:30
Reporting Date:	08/04/98	**DNR Lab Reference:**	HW7721
Sample Site:	AJAY SI-AUSTELL COBB HW7721		

LAB	ANALYTE	PARAMETER CODE	EPA METHOD	MDL	RESULT	NOTE	UNITS	ANALYST	ANALYSIS DATE
Metals	***Arsenic 01002***								
	Arsenic	01002	206.2	25	Not detected		ug/l	CAS	06/25/98
Metals	***ICP METALS FOR HAZARDOUS WASTE***								
	Barium	01007	6010	10	89		ug/l	PT	06/25/98
	Cadmium	01027	6010	5	Not detected		ug/l	PT	06/25/98
	Chromium	01034	6010	20	Not detected		ug/l	PT	06/25/98
	Lead	01051	6010	50	Not detected		ug/l	PT	06/25/98
	Nickel	01067	6010	20	Not detected		ug/l	PT	06/25/98
	Selenium	01147	6010	50	Not detected		ug/l	PT	06/25/98
	Silver	01077	6010	30	Not detected		ug/l	PT	06/25/98
Metals	***Lead 01051***								
	Lead	01051	239.2	1.3	Not detected		ug/l	CN	06/26/98
Metals	***Selenium 01147***								
	Selenium	01147	270.2	5	Not detected		ug/l	CAS	06/25/98

Sample comments :

End of Report

RAMETER CODE: EPA
: micrograms/liter
mg/l : milligrams/liter
MDL: method detection limit
TIE: Tentatively identified/Estmated value
Trace: Below quantitation limits
USPEC: Greater than specification limits
LSPEC: Lower than specification limits

Laboratory Contacts:

Inorganics:	Pat Sammons	Ext. 5239
Metals :	Harjinder Ghuman	Ext. 5223
Organics:	Danny Reed	Ext. 5252
GC Mass Spec:	Steve Bryan	Ext. 5260

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
HAZARDOUS WASTE MANAGEMENT BRANCH

CHAIN OF CUSTODY

FACILITY: HJAY SI **LOCATION:** 1400 Industry Rd, Austell, Cobb Co.

SAMPLE #	HWMB LOG #	LAB #	DESCRIPTION	COLLECTED BY (NAME)	DATE	TIME
MW17	HW 7721		MW17- groundwater	S. Merchant	6/17/98	11:30am
MW16	HW 7722		MW16- groundwater	S. Merchant	6/17/98	12:45

TRANSFER RECORD

TRANSFERRED BY (NAME)	TO (NAME) (IF FINAL: LAB NAME)	DATE	TIME	METHOD OF TRANSFER	RECEIVED BY (NAME)	DATE
S. Merchant	EPD	6/17/98	2:35pm	Hand	Steven Hufstedler	6-17-98

ANALYSIS REQUESTED: metals (total)

Georgia Department of Natural Resources
205 Butler St. S.E., Floyd Towers, East, Suite 1462, Atlanta, Georgia 30334
Lonice C. Barrett, Commissioner
Environmental Protection Division
Harold F. Reheis, Director
Hazardous Waste Management Branch
404/656-2833

Trip Report
June 26, 1997

Site Name and Location: Ajay North America, LLC
1400 Industry Road
Powder Springs, Cobb Co., GA

Trip By: Nicole Long
Environmental Engineer
Hazardous Sites Response Program

Date of Trip: June 26, 1997

Persons Contacted: Alan Shipp and Charles Pittard
Ajay North America

Reference: Ajay Chemicals Facility File
Generator Compliance Program

Comments:

Background

A preliminary assessment on the subject site is being prepared by EPD. Selenium has been detected in groundwater obtained from the on site supply well. The site inspection was conducted to gather information on the status and operations at the subject facility.

Ajay North America produces inorganic chemicals for agricultural and industrial uses. Materials used in the production of these chemicals include iodine, selenium, potassium and sodium. Previous inspections of the facility revealed two surface impoundments, one lined and one unlined, on site. The impoundments were used for discharge from the iodine manufacturing process and for the collection of floor washings from the selenite manufacturing area. In 1987 a recovery system was installed on site to recover iodine from the soil of the unlined impoundment. In February of 1994 the soil from the unlined impoundment was excavated and disposed of off site and the lined impoundment was also removed in 1994.

Findings

I was met on site by Mr. Alan Shipp of Ajay North America. I informed Mr. Shipp about the selenium detected in the supply well and about the preliminary assessment being prepared. Mr. Shipp expressed that he was surprised that selenium was detected given the process for production of the sodium selenite is a no discharge process. He proceeded to explain the process and indicated that water used in the two scrubbers is the only by product and it is recycled back into the system. Mr. Shipp did state that "non-contact cooling water" is discharged into nearby Noses Creek for which they have a permit .

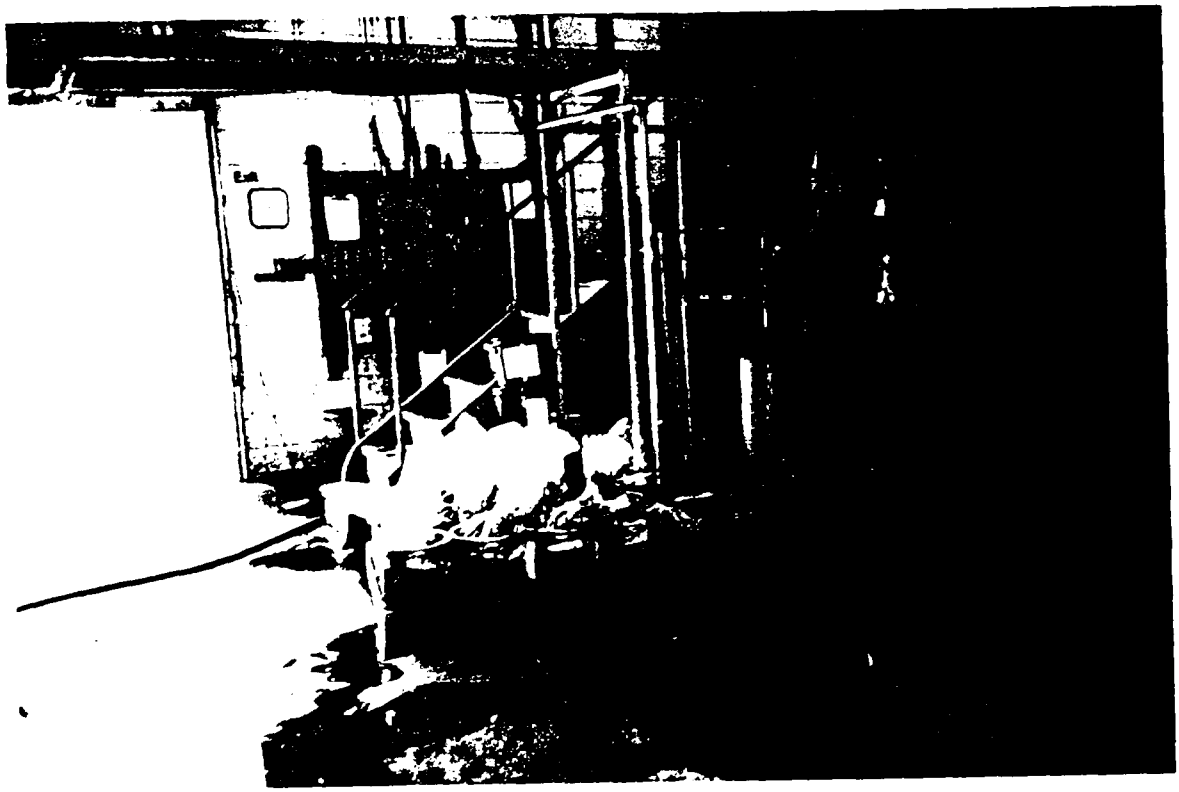
There are three buildings on-site, one building houses the office and the existing operations, the other two buildings were recently constructed and operations in those buildings have not begun. A Freon substitute using iodine will be manufactured in one of the buildings and a material used by the pharmaceutical industry will be manufactured in the other. We proceeded to the sodium selenite process area. I observed one 55 gallon drum in this area marked hazardous waste. Mr. Shipp explained that spent filters, soiled gloves and miscellaneous debris contaminated with selenious acid, selenite or selenium is the only hazardous waste generated on site and that Ajay is listed as a small quantity generator. In this area I also observed selenium used in the process. The selenium is contained in 50 kilogram pales and is stored on wooden pallets. No spills or staining were observed on site. I requested to see the locations of the former surface impoundments. The area of the unlined impoundment is now paved and the area of the lined impoundment is covered with gravel and is used for storage of old parts. The majority of the site is paved or covered with gravel. A rain water collection system has recently been installed as required by Cobb County. According to Mr. Shipp water from the supply well is used in the manufacturing process.

We returned to the office and Mr. Shipp indicated that there have been no overflows and no discharge from the system and that selenium contaminated material is containerized for disposal. The discharge from the iodine process that previously went to the impoundments is now discharged to the sewer and floor washings from the sodium selenite drying area are collected in a small concrete floor sump, which I observed, and allowed to evaporate. Mr. Charles Pittard of Ajay North America informed me that soil from the unlined impoundment was excavated down to approximately 8 feet below grade. A soil sample of the material was obtained and analyzed (see attached results).

Conclusion

No indications of spills or releases were observed at the facility. The selenium detected in the nearby supply well is possibly from contamination from the former surface impoundments.

Attachments: Photographs (3)
Soil sample results provided by Ajay



County Name: Cobb Picture 1 of 3 Site Name: Ajay North America LLC

Date: 6/26/97 Direction Facing: Time: 11.30am Photographer: N. Long

Program: Hazardous Sites Response

Explanation: Selenite manufacturing area. Selenium used in process seen on wooden pallet stored in 50 kilogram pales. Water on floor drains to nearby floor sump

Other:

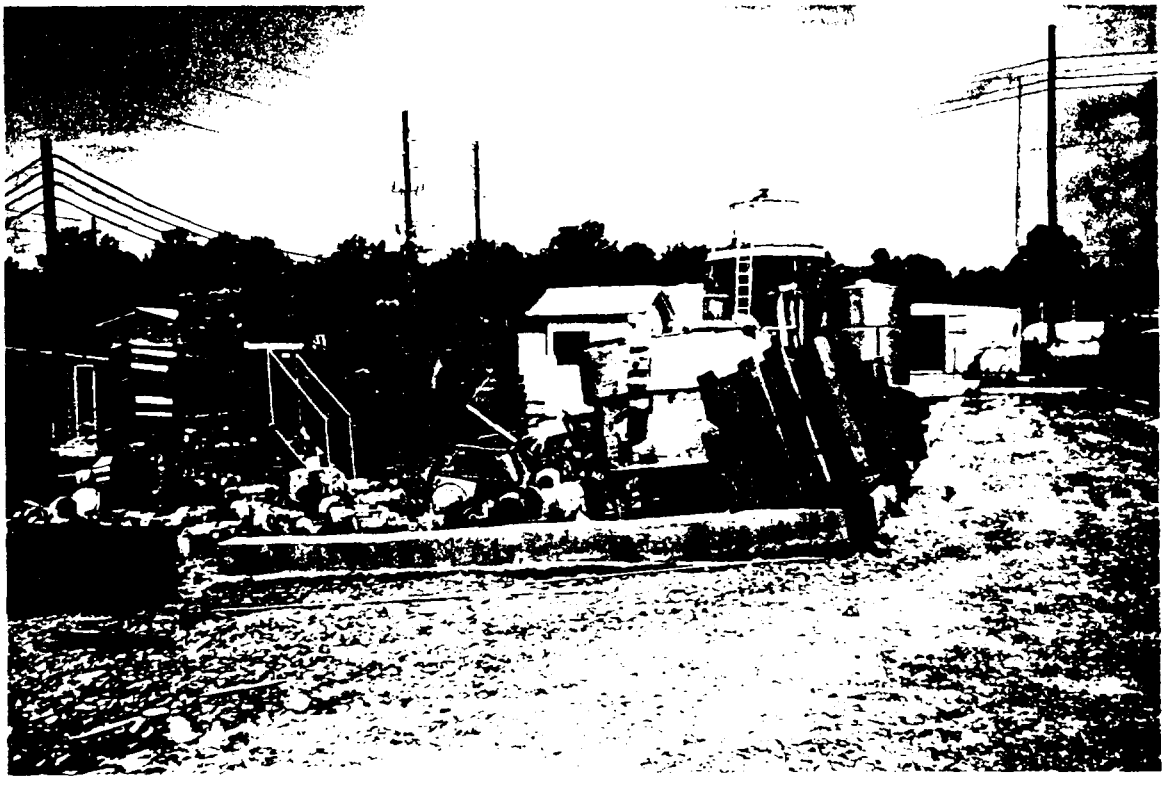
County Name: Cobb Picture 2 of 3 Site Name: Ajay North America, LLC

Date: 6/26/97 Direction Facing: Time: 11:40 am Photographer: N. Long

Program: Hazardous Sites Response

Explanation: Location of former unlined surface impoundment

Other:



County Name: Cobb Picture 3 of 3 Site Name: Ajay North America LLC

Date: 6/26/97 Direction Facing: Time: 12:05 Photographer: N. Long

Program: Hazardous Sites Response

Explanation: Location of former lined surface impoundment/retention pond. Now used for storage.

Other:

ACL

ADVANCED CHEMISTRY LABS, INC.

DR. STEVE N. TSOUKALAS
DIRECTOR

P.O. BOX 88610 • ATLANTA, GEORGIA 30356
PHONE (404) 409-1444 • FAX (404) 409-1844

Client: Federal Environmental Services
1100 Northmeadow Pkwy
Suite 108
Roswell, GA 30076

Attention: Mr. Mark Babcock

Client Project No.: Ajay Chemical
ACL Project No.: 15295
Date Received: 01-27-94
Report Date: 02-04-94

TCLP VOLATILES/SEMI-VOLATILES

STATION:	Soil
ACL #:	79998

VOLATILES (mg/liter)	Results	Federal Regulatory Level
Benzene	< 0.05	0.5
Carbon tetrachloride	< 0.05	0.5
Chlorobenzene	< 10	100
Chloroform	< 0.60	6.0
1,2-Dichloroethane	< 0.05	0.5
1,1-Dichloroethylene	< 0.07	0.7
Methyl ethyl ketone	< 20	200
Tetrachloroethylene	< 0.07	0.7
Trichloroethylene	< 0.05	0.5
Vinyl chloride	< 0.10	0.2

SEMI-VOLATILES (mg/liter)		
m-Cresol	< 20	200
o-Cresol	< 20	200
p-Cresol	< 20	200
Total Cresol*	----	200
1,4-Dichlorobenzene	< 0.75	7.5
2,4-Dinitrotoluene	< 0.10	0.13
Hexachlorobenzene	< 0.10	0.13
Hexachlorobutadiene	< 0.10	0.5
Hexachloroethane	< 0.30	3.0
Nitrobenzene	< 0.20	2.0
Pentachlorophenol	< 10	100
Pyridine	< 1.0	5.0
2,4,5-Trichlorophenol	< 40	400
2,4,6-Trichlorophenol	< 0.20	2.0

* If m-,o- and p-Cresol cannot be differentiated, the total Cresol concentration is used.

ACL

ADVANCED CHEMISTRY LABS, INC.

DR. STEVE N. TSOUKALAS
DIRECTOR

P.O. BOX 88610 • ATLANTA, GEORGIA 30356
PHONE (404) 409-1444 • FAX (404) 409-1844

Client: Federal Environmental Services
1100 Northmeadow Pkwy
Suite 108
Roswell, GA 30076

Attention: Mr. Mark Babcock

Client Project No.: Ajay Chemical
ACL Project No.: 15295
Date Received: 01-27-94
Report Date: 02-04-94

STATION: Soil
ACL #: 79998

MATRIX: Soil

PARAMETERS:	RESULTS	DATE ANALYZED	METHOD
TCLP Metals (mg/liter)			
Arsenic	< 0.10	01-28-94	1311/6010
Barium	< 2.0	01-28-94	1311/6010
Cadmium	< 0.10	01-28-94	1311/6010
Chromium	< 0.20	01-28-94	1311/6010
Lead	< 0.50	01-28-94	1311/6010
Mercury	< 0.002	01-28-94	1311/7470
Selenium	< 0.10	01-28-94	1311/6010
Silver	< 0.50	01-28-94	1311/6010
Free Liquids (%)	-0-	01-27-94	9095
Reactivity Cyanides (mg/kg)	< 5.0	02-01-94	Section 7.3.3.2
Reactivity Sulfides (mg/kg)	< 5.0	02-01-94	Section 7.3.4.1

John Andros
Lab Manager

ACL

ADVANCED CHEMISTRY LABS, INC.

DR. STEVE N. TSOUKALAS
DIRECTOR

P.O. BOX 88610 • ATLANTA, GEORGIA 30356
PHONE (404) 409-1444 • FAX (404) 409-1844

Client: Federal Environmental Services
1100 Northmeadow Pkwy
Suite 108
Roswell, GA 30076

Attention: Mr. Mark Babcock

Client Project No.: Ajay Chemical
ACL Project No.: 15295
Date Received: 01-27-94
Report Date: 02-04-94

TCLP PESTICIDES/HERBICIDES

STATION:	Soil
ACL #:	79998

PESTICIDES (mg/liter):	Results	Federal Regulatory Level
Chlordane	< 0.005	0.03
Endrin	< 0.002	0.02
Heptachlor	< 0.002	0.008
Lindane	< 0.04	0.4
Methoxychlor	< 1.0	10.0
Toxaphene	< 0.10	0.5

HERBICIDES (mg/liter):		
2,4-D	< 1.0	10.0
2,4,5-TP (Silvex)	< 0.10	1.0

ACL ADVANCED CHEMISTRY LABS, INC.
3039 AMWILER RD., SUITE 100 • ATLANTA, GEORGIA 30360
PHONE (404) 409-1444 • FAX (404) 409-1844

Attn: Mark Babcock

ACL CLIENT: Federal Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT NO.

PROJECT NAME: Ajay Chemical

SAMPLERS (Signature)

I = Iced Only P = Preserved

SAMPLE ID	DATE	TIME	COMP	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	Full TCLP (I P)	Paint Filter (I P)	Reactivity (I P)	(I P)	(I P)	(I P)	(I P)	(I P)	(I P)	Remarks
Soil						1	✓	✓	✓							1 week T/A

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Remarks:
Relinquished by:	Date / Time	Received by:	Received for Laboratory by: C Tracey	DATE / TIME 1-27-94 11:30 a.m.	

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:		(mg/kg/day)^-1	
Oral Wt-of-Evid:			
Inhal Slope:		(mg/kg/day)^-1	
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh AWQC:	1.8E+01	µg/L	WATCRIT
Salt AWQC:	2.9E+00	µg/L	WATCRIT
Fresh AALAC:		µg/L	
Salt AALAC:		µg/L	
CHRONIC			
Fresh AWQC:	1.2E+01	µg/L	WATCRIT
Salt AWQC:		µg/L	
Fresh AALAC:		µg/L	
Salt AALAC:		µg/L	
Fresh Ecol LC50:	1.6E-01	µg/L	AQUIRE
S Ecol LC50:	7.5E+00	µg/L	AQUIRE

PHYSICAL CHARACTERISTICS

Parameter	Value
Metal Contain:	Yes
Organic:	No
Inorganic:	Yes
Gas:	No
Particulate:	Yes
Radionuclide:	No
Rad. Element:	No
Molecular Weight:	6.35E+01
Density:	8.9E+00 g/mL

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.3E+02	ml/g	SSG_KD
Geo. Mean Sol.:	9.0E+02	mg/L	WEAST; LANGE

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:	**	days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:	**	days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:			

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	2.3E+04		VER_BCF
Salt BCF:	2.8E+04		VER_BCF
ENVIRONMENTAL			
Fresh BCF:	2.3E+04		VER_BCF
Salt BCF:	2.8E+04		VER_BCF
Log Kow:			
Water Solub:	9.0E+02	mg/L	

OTHER DATA

Melting Point :1083.00° C
Boiling Point :2595.00° C
Formula :Cu

CLASS INFORMATION

Class	Parent Substance
Toxicity:	NA
GW Mob:	NA
Other:	NA

** This substance should be considered essentially non-volatile.

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	...
Gas Mobility:	0.0000
Gas Migration:	0

GROUND WATER PATHWAY

Parameter	Value
Toxicity:	...
Water Solub:	9.0E+02
Distrib:	4.3E+02

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	...

SURFACE WATER PATHWAY

Drinking Water

Parameter	Value
Toxicity:	...
Persistence	
River:	1.0000
Lake:	1.0000

Human Food Chain

Parameter	Value
Toxicity:	...
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	50000.0

Environmental

Parameter	Value
Fresh Tox:	100
Salt Tox:	100
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	50000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:	1.3E+00	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

Drinking Water

Parameter	Value	Unit
MCL/MCLG:	1.3E+00	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

Human Food Chain

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

Environmental

Parameter	Value	Unit
ACUTE		
Fresh AWQC:	1.8E+01	µg/L
Salt AWQC:	2.9E+00	µg/L
Fresh AALAC:		µg/L
Salt AALAC:		µg/L
CHRONIC		
Fresh AWQC:	1.2E+01	µg/L
Salt AWQC:		µg/L
Fresh AALAC:		µg/L
Salt AALAC:		µg/L

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	5.0E-03	mg/kg/day	IRIS
Inhal RfD:		mg/kg/day	
Oral Slope:		(mg/kg/day)^-1	
Oral Wt-of-Evid:			
Inhal Slope:		(mg/kg/day)^-1	
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:	4.8E+00	mg/kg	ACGIH
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:	1.0E-03	mg/L	ACGIH
ACUTE			
Fresh AWQC:	2.0E+01	µg/L	WATCRIT
Salt AWQC:	3.0E+02	µg/L	WATCRIT
Fresh AALAC:		µg/L	
Salt AALAC:		µg/L	
CHRONIC			
Fresh AWQC:	5.0E+00	µg/L	WATCRIT
Salt AWQC:	7.1E+01	µg/L	WATCRIT
Fresh AALAC:		µg/L	
Salt AALAC:		µg/L	
Fresh Ecol LC50:	3.4E+02	µg/L	AQUIRE
S' Ecol LC50:	6.7E+03	µg/L	AQUIRE

PHYSICAL CHARACTERISTICS

Parameter	Value
Metal Contain:	Yes
Organic:	No
Inorganic:	Yes
Gas:	No
Particulate:	Yes
Radionuclide:	No
Rad. Element:	No
Molecular Weight:	7.90E+01
Density:	4.8E+00 g/mL @ 20.00° C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	3.0E+02	ml/g	BAES_KD
Geo. Mean Sol.:	7.0E+05	mg/L	WEAST

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:	**	days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:	**	days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:			

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	5.7E+03		VER_BCF
Salt BCF:	1.2E+01		VER_BCF
ENVIRONMENTAL			
Fresh BCF:	5.7E+03		VER_BCF
Salt BCF:	2.5E+01		VER_BCF
Log Kow:			
Water Solub:	7.0E+05	mg/L	

OTHER DATA

Melting Point :217.00° C
Boiling Point :684.00° C
Formula :Se

CLASS INFORMATION

Class	Parent Substance
Toxicity:	NA
GW Mob:	NA
Other:	NA

** This substance should be considered essentially non-volatile.

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	100
Gas Mobility:	0.0000
Gas Migration:	0

GROUND WATER PATHWAY

Parameter	Value
Toxicity:	100
Water Solub:	7.0E+05
Distrib:	3.0E+02

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	100

SURFACE WATER PATHWAY

Drinking Water

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000

Human Food Chain

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	5000.0
Salt:	50.0

Environmental

Parameter	Value
Fresh Tox:	1000
Salt Tox:	100
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	5000.0
Salt:	50.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:	5.0E-02	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.8E-01	mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:	3.9E+02	mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

Drinking Water

Parameter	Value	Unit
MCL/MCLG:	5.0E-02	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.8E-01	mg/L

Human Food Chain

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:	6.8E+00	mg/kg

Environmental

Parameter	Value	Unit
ACUTE		
Fresh AWQC:	2.0E+01	µg/L
Salt AWQC:	3.0E+02	µg/L
Fresh AALAC:		µg/L
Salt AALAC:		µg/L
CHRONIC		
Fresh AWQC:	5.0E+00	µg/L
Salt AWQC:	7.1E+01	µg/L
Fresh AALAC:		µg/L
Salt AALAC:		µg/L

SITE INSPECTION WORKSHEETS

CERCLIS IDENTIFICATION NUMBER
GAD061425104

SITE LOCATION			
SITE NAME: LEGAL, COMMON, OR DESCRIPTIVE NAME OF SITE Ajay North America, LLC			
STREET ADDRESS, ROUTE, OR SPECIFIC LOCATION IDENTIFIER 1400 Industry Drive			
CITY Powder Springs	STATE GA	ZIP CODE 30127	TELEPHONE N/A

OWNER/OPERATOR IDENTIFICATION					
OWNER			OPERATOR Ajay North America		
OWNER ADDRESS			OPERATOR ADDRESS 1400 Industry Drive		
CITY			CITY Powder Springs		
STATE	ZIP CODE	TELEPHONE	STATE GA	ZIP CODE 30127	TELEPHONE

SITE EVALUATION		
AGENCY/ORGANIZATION Georgia Environmental Protection Division		INVESTIGATOR DAVID BROWNLEE/SARAH MERCHANT
ADDRESS 205 Butler St. SE, Floyd Tower East, Suite 1162		CONTACT DEADRE EMBREY
CITY Atlanta		TELEPHONE 404/656-2833
STATE Georgia	ZIP CODE 30334	

Site description and Operational History: Provide a brief description of the site and its operational history. State the site name, owner, operator, type of facility and operations, size of property, active or inactive status, and years of waste generation. Summarize waste treatment, storage, or disposal activities that have or may have occurred at the site; note whether these activities are documented or alleged. Identify all source types and prior spills, floods, or fires. Summarize highlights of the PA and other investigations. Cite references.

Location

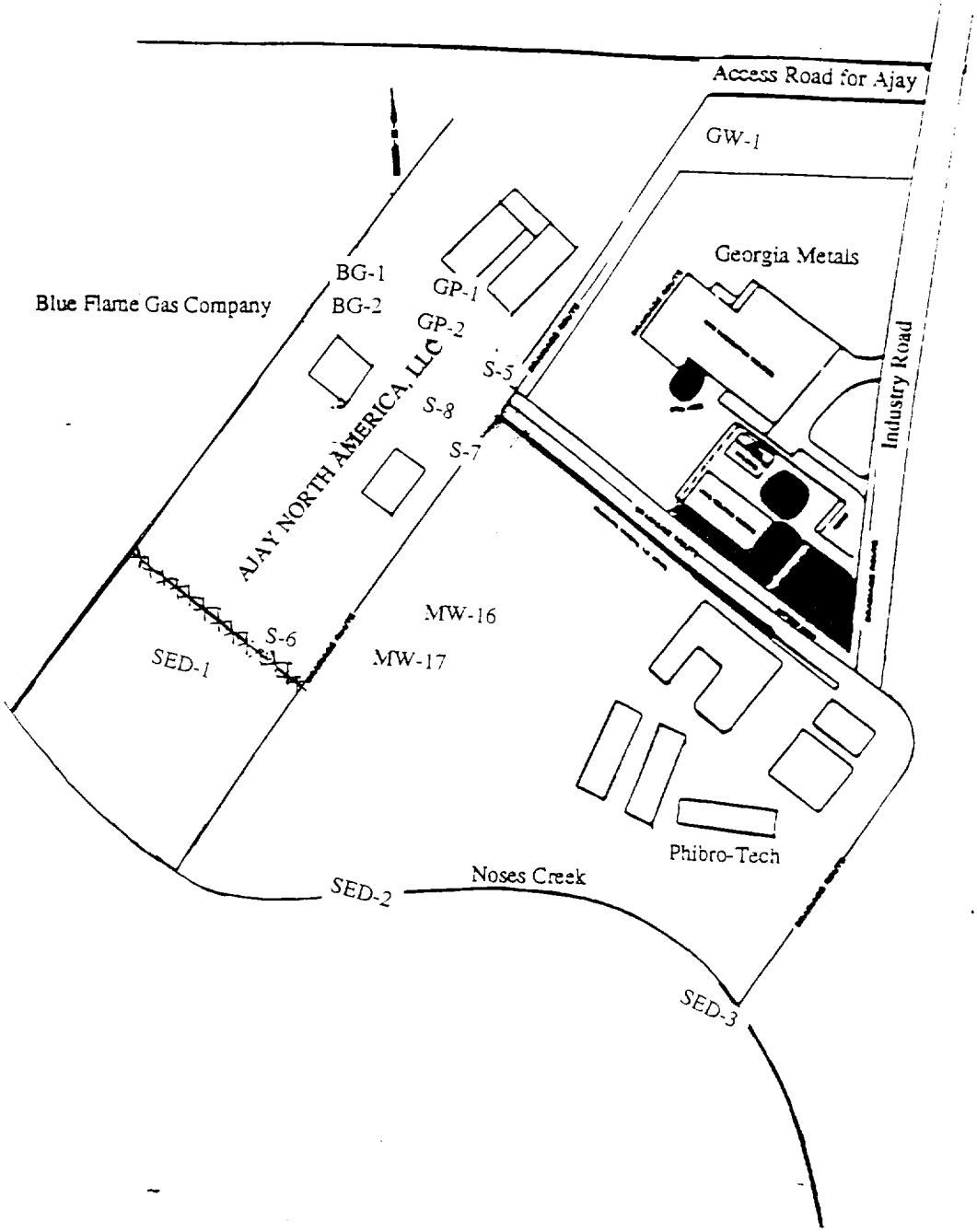
Ajay North America is located at 1400 Industry Drive, outside the city limits of Powder Springs, Georgia. The geographic coordinates are 33°51'18"N latitude and 84°39'1"W longitude, as located on the U.S. Geological Survey 7.5 minute series topographic map quadrangles Austell, Lost Mountain, Mableton and Marietta, Georgia.

Site Description, Operational History and Waste Characteristics

The Ajay North America site occupies an area of approximately 12 acres and is located west of Industry Road. The site is bordered on the north by wooded areas and a railroad bed (former Seaboard Coastal railroad track), on the south by Noses Creek, on the west by Blue Flame Gas Company and on the east by Georgia Metals, Inc. (Reference 3). Phibro-Tech (formerly C.P. Chemicals) is located south-southeast of Ajay Chemicals. The property gently slopes towards the south to Noses Creek. The site has one main structure on it housing the offices and operations. Two additional buildings have been recently constructed; however, operations in those buildings have not begun (Reference 4). The site formerly had two surface impoundments on the property; an unlined retention pond and a lined impoundment. The surface impoundments were removed from the site in February 1994.

Ajay North America is a producer of inorganic chemicals for both agricultural and industrial uses including cuprous iodide for military batteries, potassium iodate, an oxidizer used in the textile industry and sodium selenite metal which is mixed with other compounds, including water, to make a salt. The dust from this process enters a scrubber which produces a liquor that is reused in the selenite manufacturing process. A caustic scrubber is also used in this process to reduce chlorine emissions. The process generates water that is reused in the system.

Site Sketch:


Access Road for Ajay
GW-1
Georgia Metals
Industry Road
Blue Flame Gas Company
BG-1
BG-2
GP-1
GP-2
S-5
S-8
S-7
AJAY NORTH AMERICA, LLC
MW-16
MW-17
S-6
SED-1
Phibro-Tech
Noses Creek
SED-2
SED-3

Source Description: Include description of containment per pathway for ground water (see HRS Table 3-2), surface water (see HRS Table 4-2), and air (see HRS Tables 6-3 and 6-9).

Sources:

1. Lined surface impoundment (5' x 20' x 8') = 800 ft^3.
2. Unlined surface impoundment (20' x 30' x 8') = 4800 ft^3.

The surface impoundments were on-site from 1974 until 1997 at which time the sludge was removed and clean fill was placed in the pits to a depth of 8 feet.

Hazardous Waste Quantity (HWQ) Calculation: SI Tables 1 and 2 (See HRS Tables 2-5, 2-6, and 5-2.

Multiple Sources:

1. Area of the lined surface impoundment < 6.750 ft^3, so HWQ = 10.
2. Area of the unlined surface impoundment <6,570 ft^3, so HWQ = 10.

The hazardous waste constituent values (items 1 and 2 above) each have a HWQ value of 10. Adding the site WQ values (20) and using SI Table 2, the Site HWQ is 1.

HWQ= 1

SI TABLE 1: HAZARDOUS WASTE QUANTITY (HWQ) SCORES FOR SINGLE SOURCE SITES AND FORMULAS FOR MULTIPLE SOURCE SITES

		Single Source Sites (assigned HWQ scores)	
(Column 1) TIER	(Column 2) Source Type	(Column 3) HWQ = 10	(Column 4) HWQ = 100
A Hazardous Constituent Quantity	N/A	HWQ = 1 if Hazardous Constituent Quantity data are complete HWQ = 10 if Hazardous Constituent Quantity data are not complete	>100 to 10,000 lbs
B Hazardous Wastestream Quantity	N/A	≤ 500,000 lbs	>500,000 to 50 million lbs
C Volume	Landfill	≤ 6.75 million ft^3 ≤ 250,000 yd^3	>6.75 million to 675 million ft^3 >250,000 to 25 million yd^3
	Surface impoundment	≤6,750 ft^3 ≤250 yd^3	>6,750 to 675,000 ft^3 >250 to 25,000 yd^3
	Drums	≤1,000 drums	>1,000 to 100,000 drums
	Tanks and non-drum containers	≤50,000 gallons	>50,000 to 5 million gallons
	Contaminated soil	≤6.75 million ft^3 ≤250,000 yd^3	>6.75 million to 675 million ft^3 >250,000 to 25 million yd^3
	Pile	≤6,750 ft^3 ≤250 yd^3	>6,750 to 675,000 ft^3 >250 to 25,000 yd^3
	Other	≤6,750 ft^3 ≤250 yd^3	>6,750 to 675,000 ft^3 >250 to 25,000 yd^3
D Area	Landfill	≤340,000 ft^2 ≤7.8 acres	>340,000 to 34 million ft^2 >7.8 to 780 acres
	Surface impoundment	≤1,300 ft^2 ≤0.029 acres	>1,300 to 130,000 ft^2 >0.029 to 2.9 acres
	Contaminated soil	≤3.4 million ft^2 ≤78 acres	> 3.4 million to 340 million ft^2 > 78 to 7,800 acres
	Pile	≤1,300 ft^2 ≤0.029 acres	>1,300 to 130,000 ft^2 >0.029 to 2.9 acres
	Land treatment	≤27,000 ft^2 ≤0.62 acres	>27,000 to 2.7 million ft^2 >0.62 to 62 acres

TABLE 1 (CONTINUED)

Single Source Sites (assigned HWQ scores)		Multiple Source Sites		
(Column 5) HWQ = 10,000	(Column 6) HWQ = 1,000,000	(Column 7) Divisors for Assigning Source WQ Values	(Column 2) Source Type	(Column 1) TIER
>10,000 to 1 million lbs	> 1 million lbs	lbs ÷ 1	N/A	A Hazardous Constituent Quantity
>50 million to 5 billion lbs	> 5 billion lbs	lbs ÷ 5,000	N/A	B Hazardous Wastestream Quantity
>675 million to 67.5 billion ft^3 >25 million to 2.5 billion yd^3	> 67.5 billion ft^3 > 2.5 billion yd^3	ft^3 ÷ 67,500 yd^3 ÷ 2,500	Landfill	C Volume
>675,000 to 67.5 million ft^3 >25,000 to 2.5 million yd^3	> 67.5 million ft^3 > 2.5 million yd^3	ft^3 ÷ 67.5 yd^3 ÷ 2.5	Surface Impoundment	
>100,000 to 10 million drums	> 10 million drums	drums ÷ 10	Drums	
>5 million to 500 million gallons	> 500 million gallons	gallons ÷ 500	Tanks and non-drum containers	
>675 million to 67.5 billion ft^3 >25 million to 2.5 billion yd^3	> 67.5 billion ft^3 > 2.5 billion yd^3	ft^3 ÷ 67,500 yd^3 ÷ 2,500	Contaminated Soil	
>675,000 to 67.5 million ft^3 >25,000 to 2.5 million yd^3	> 67.5 million ft^3 > 2.5 million yd^3	ft^3 ÷ 67.5 yd^3 ÷ 2.5	Pile	
>675,000 to 67.5 million ft^3 >25,000 to 2.5 million yd^3	> 67.5 million ft^3 > 2.5 million yd^3	ft^3 ÷ 67.5 yd^3 ÷ 2.5	Other	
>34 million to 3.4 billion ft^2 >780 to 78,000 acres	> 3.4 billion ft^2 >78,000 acres	ft^2 ÷ 3,400 acres ÷ 0.078	Landfill	D Area
>130,000 to 13 million ft^2 >2.9 to 290 acres	> 13 million ft^2 > 290 acres	ft^2 ÷ 13 acres ÷ 0.00029	Surface Impoundment	
> 340 million to 34 billion ft^2 > 7,800 to 780,000 acres	> 34 billion ft^2 > 780,000 acres	ft^2 ÷ 34,000 acres ÷ 0.78	Contaminated Soil	
> 130,000 to 13 million ft^2 > 2.9 to 290 acres	> 13 million ft^2 > 290 acres	ft^2 ÷ 13 acres ÷ 0.00029	Pile	
>2.7 million to 270 million ft^2 >62 to 6,200 acres	> 270 million ft^2 > 6,200 acres	ft^2 ÷ 270 acres ÷ 0.0062	Land Treatment	

HAZARDOUS WASTE QUANTITY (HWQ) CALCULATION

For each migration pathway, evaluate HWQ associated with sources that are available (i.e., incompletely contained) to migrate to that pathway. (Note: If *Actual Contamination Targets* exist for ground water, surface water, or air migration pathways, assign the calculated HWQ score or 100, whichever is greater, as the HWQ score for that pathway.) For each source, evaluate HWQ for one or more of the four tiers (SI Table 1; HRS Table 2-5) for which data exist: constituent quantity, wastestream quantity, source volume, and source area. Select the tier that gives the highest value as the source HWQ. Select the source volume HWQ rather than source area HWQ if data for both tiers are available.

Column 1 of SI Table 1 indicates the quantity tier. Column 2 lists source types for the four tiers. Columns 3, 4, 5, and 6 provide ranges of waste amount for sites with only one source, corresponding to HWQ scores at the tops of the columns. Column 7 provides formulas to obtain source waste quantity values at sites with multiple sources.

1. Identify each source type.
2. Examine all waste quantity data available for each source. Record constituent quantity and waste stream mass or volume. Record dimensions of each source.
3. Convert source measurements to appropriate units for each tier to be evaluated.
4. For each source, use the formulas in the last column of SI Table 1 to determine the waste quantity value for each tier that can be evaluated. Use the waste quantity value obtained from the highest tier as the quantity value for the source.
5. Sum the values assigned to each source to determine the total site waste quantity.
6. Assign HWQ score from SI Table 2 (HRS Table 2-6).

Note these exceptions to evaluate soil exposure pathway HWQ (see HRS Table 5-2):

- The divisor for the area (square feet) of a landfill is 34,000.
- The divisor for the area (square feet) of a pile is 34.
- Wet surface impoundments and tanks and non-drum containers are the only sources for which volume measurements are evaluated for the soil exposure pathway.

SI TABLE 2: HWQ SCORES FOR SITES

Site WQ Total	HWQ Score
0	0
1[a] to 100	1[b]
> 100 to 10,000	100
> 10,000 to 1 million	10,000
> 1 million	1,000,000

[a] If the WQ total is between 0 and 1, round it to 1.
[b] If the hazardous constituent quantity data are not complete, assign the score of 10.

SI TABLE 3: WASTE CHARACTERIZATION WORKSHEET

Site Name: Ajay North America, LLC. **References:** SCDM (JUN96)

Sources:

1. Surface Impoundments
2.
3.
4.
5.
6.
7.
8.
9.

SOURCE	HAZARDOUS SUBSTANCE	TOXICITY	GROUND WATER PATHWAY		SURFACE WATER PATHWAY										
					OVERLAND/FLOOD MIGRATION							GROUND WATER TO SURFACE WATER			
			GW Mobility (HRS Table 3-8)	Tox/ Mobility Value (HRS Table 3-9)	Per (HRS Tables 4-10 and 4-11)	Tox/ Per Value (HRS Table 4-12)	Bioac Pot. (HRS Table 4-15)	Tox/ pers/ Bioac Value (HRS Table 4-16)	Ecotox (HRS Table 4-19)	Ecotox/Pers (HRS Table 4-20)	Ecotox/Pers/ Bioac Value (HRS Table 4-21)	Tox/ Mob/ Pers Value (HRS Table 4-26)	Tox/ Mob/ Pers/ Bioac Value (HRS Table 4-28)	Ecotox/ Mob/ Pers Value (HRS Table 4-29)	Ecotox/ Mob/ Per/ Bioac Value (HRS Table 4-30)
1	Selenium	100	1.00e-02	1	1	1.00e+02	5000	5.00e+05	1000	1000	5.00e+06	1.00e+00	5.00e+03	1.00e+01	5.00e+04
1	Copper	NA	1.00e-02	NA	1	NA	50000	NA	100	100	5.00e+06	NA	NA	1.00e+00	5.00e+04

GROUND WATER PATHWAY
GROUND WATER USE DESCRIPTION

Describe Ground Water Use within 4 Miles of the Site:
Describe generalized stratigraphy, aquifers, municipal and private wells

Cobb County is in the Central Uplands district of the Piedmont physiographic province (Reference 8). The underlying geology of the area consists of metamorphic and igneous rocks.

Ground water in the area occupies joints, fractures and other secondary openings in the bedrock and pore spaces of the overlying soil. Precipitation recharges the ground water found in these underground openings. Generally ground water tends to flow the way of surface topography in the area. This area slopes gently to the south (Reference 1).

The majority of the population within a 4 mile radius utilize public water supplies (Reference 10). Powder Springs has a well 1.7 miles west of the site that supplies water to connections in the old central part of the City. Powder Springs also buys drinking water from the Cobb/Marietta Water Authority that supplies water to the majority of the population within a four mile radius of the site. The Cobb/Marietta Water Authority gets it water from two surface water intakes. One intake is located on the Chattahoochee River and the other is located on the Allatoona Lake.

Show Calculations of Ground Water Drinking Water Populations for each Aquifer:
Provide apportionment calculations for blended supply systems.
County average number of persons per household: 2.612 Reference 10

Data provided from the U.S. Census Bureau (Reference 10). All wells in the area are completed in the uppermost aquifer (regolith and fractured bedrock system).

Ground Water Usage	---------- Distance from Site (miles) ----------						Total
	0-0.25	0.25-0.50	0.50-1.0	1.0-2.0	2.0-3.0	3.0-4.0	
Total Population	89	242	2574	9792	15951	19207	47855
Population on Private Wells	0	4	36	229	299	283	851
Population on Public Water	89	238	2538	9562	15652	18924	47004

GROUND WATER PATHWAY WORKSHEET

LIKELIHOOD OF RELEASE	Score	Data Type	Refs
1. OBSERVED RELEASE: If sampling data or direct observation support a release to the aquifer, assign a score of 550. Record observed release substances on SI Table 4.	550	H	A5
2. POTENTIAL TO RELEASE: Depth to aquifer: 7 feet. If sampling data do not support a release to the aquifer, and the site is in karst terrain or the depth to aquifer is 70 feet or less, assign a score of 500; otherwise, assign a score of 340. Optionally, evaluate potential to release according to HRS Section 3.	0		
LR =	550		

TARGETS			
Are any wells part of a blended system? Yes____ No X If yes, attach a page to show apportionment calculations. 3. ACTUAL CONTAMINATION TARGETS: If analytical evidence indicates that any target drinking water well for the aquifer has been exposed to a hazardous substance from the site, evaluate the factor score for the number of people served (SI Table 5). Level I: 0 people x 10 = 0 Level II: 0 people x 1 = 0 **Total =**	0	H	7
4. POTENTIAL CONTAMINATION TARGETS: Determine the number of people served by drinking water wells for the aquifer or overlying aquifers that are not exposed to a hazardous substance from the site; record the population for each distance category in SI Table 6a or 6b. Sum the population values and multiply by 0.1.	8.3	H	6
5. NEAREST WELL: Assign a score of 50 for any Level I Actual Contamination Targets for the aquifer or overlying aquifer. Assign a score of 45 if there are Level II targets but no Level I targets. If no Actual Contamination Targets exist, assign the Nearest Well score from SI Table 6a or 6b. If no drinking water wells exist within 4 miles, assign 0.	18	H	6
6. WELLHEAD PROTECTION AREA (WHPA): If any source lies within or above a WHPA for the aquifer, or if a ground water observed release has occurred within a WHPA, assign a score of 20; assign 5 if neither condition applies but a WHPA is within 4 miles; otherwise assign 0.	20	H	4
7. RESOURCES: Assign a score of 5 if one or more ground water resources applies; assign 0 if none applies. - Irrigation (5 acre minimum) of commercial food crops or commercial forage crops - Watering of commercial livestock - Ingredient in commercial food preparation - Supply for commercial aquaculture - Supply for a major or designated water recreation area, excluding drinking water use	0	H	4
Sum of Targets T =	46.3		

SI TABLE 4: GROUND WATER OBSERVED RELEASE SUBSTANCES (BY AQUIFER)

Sample ID	Hazardous Substance	Bckgrd. Conc.	Toxicity/ Mobility	References
GW-1	Selenium	n/a	100	SCDM (JUN 96)
		Highest Toxicity/Mobility	100	

SI TABLE 5: GROUND WATER ACTUAL CONTAMINATION TARGETS none observed.

Well ID: _____ Level I _____ Level II _____ Population Served _____ References _____

Sample ID	Hazardous Substance	Conc. (µg/L)	Benchmark Conc. (MCL or MCLG)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RfD	% of RfD
			Highest Percent		Sum of Percents		Sum of Percents	

Well ID: _____ Level I _____ Level II _____ Population Served _____ References _____

Sample ID	Hazardous Substance	Conc. (µg/L)	Benchmark Conc. (MCL or MCLG)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RfD	% of RfD
			Highest Percent		Sum of Percents		Sum of Percents	

SI TABLE 6 (From HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUND WATER TARGET POPULATIONS

SI Table 6a: Other Than Karst Aquifers

Distance from Site	Pop.	Nearest Well (choose highest)	Population Served by Wells within Distance Category												Pop. Value	Ref.
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1000	1001 to 3000	3001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,000 to 3,000,000		
0 to $\frac{1}{4}$ mile	0	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	0	
> $\frac{1}{4}$ to $\frac{1}{2}$ mile	4	18	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122	2	
> $\frac{1}{2}$ to 1 mile	36	9	1	5	17	52	167	523	1,669	5,224	16,684	52,239	166,835	522,385	17	
> 1 to 2 miles	229	5	0.7	3	10	30	94	294	939	2,939	9,385	29,384	93,845	293,842	30	
> 2 to 3 miles	299	3	0.5	2	7	21	68	212	678	2,122	6,778	21,222	67,777	212,219	21	
>3 to 4 miles	283	2	0.3	1	4	13	42	131	417	1,306	4,171	13,060	41,709	130,596	13	

Nearest Well = 18

Sum = 83

GROUND WATER PATHWAY WORKSHEET (concluded)

WASTE CHARACTERISTICS	Score	Data Type	Does Not Apply
8. If any Actual Contamination Targets exist for the aquifer or overlying aquifers, assign the calculated hazardous waste quantity score or a score of 100, whichever is greater; If no Actual Contamination Targets exist, assign the hazardous waste quantity score calculated for sources available to migrate to ground water.	**1**	**E**	
9. Assign the highest ground water toxicity/mobility value from SI Table 3 or 4.	**100**	**H**	
10. Multiply the ground water toxicity/mobility and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below: (from HRS Table 2-7)			

Product	WC Score
0	0
>0 to <10	1
10 to <100	2
100 to <1,000	3
1,000 to < 10,000	6
10,000 to < 1E + 05	10
1E + 05 to < 1E + 06	18
1E + 06 to < 1E + 07	32
1E + 07 to < 1E + 08	56
1E + 08 or greater	100

product = 1.00e+02

Score = **3**

WC = **3**

Multiply LR by T and by WC. Divide the product by 82,500 to obtain the ground water pathway score for each aquifer. Select the highest aquifer score. If the pathway score is greater than 100, assign 100

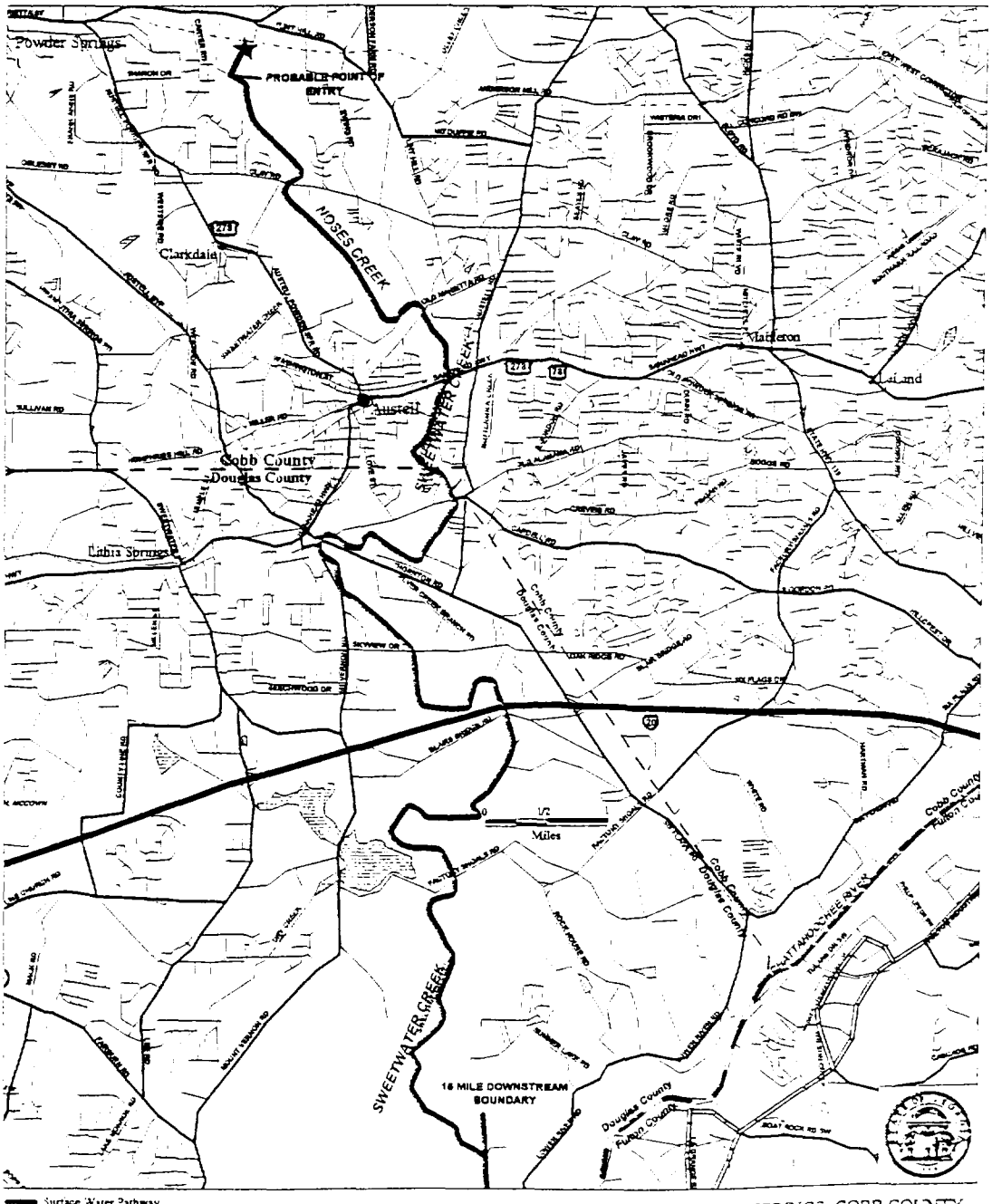
GROUND WATER PATHWAY SCORE: (LR X T X WC)/82,500

0.93

(Maximum of 100)

SURFACE WATER PATHWAY

Sketch of the Surface Water Migration Route:
Label all surface water bodies. Include runoff route and drainage direction, probable point of entry, and 15-mile target distance limit. Mark sample locations, intakes, fisheries, and sensitive environments. Indicate flow directions, tidal influence, and rate.



SURFACE WATER PATHWAY

LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET

LIKELIHOOD OF RELEASE-OVERLAND/FLOOD MIGRATION	Score	Data Type	Refs
1. OBSERVED RELEASE: If sampling data or direct observation support a release to surface water in the watershed, assign a score of 550. Record observed release substances on SI Table 7.	**0**		
2. POTENTIAL TO RELEASE: Distance to surface water: 100 (feet) If sampling data do not support a release to surface water in the watershed, use the table below to assign a score from the table below based on distance to surface water and flood frequency.	**500**	**H**	**1**
Optionally, evaluate surface water potential to release according to HRS Section 4.1.2.1.2			
LR =	**500**		

Distance to surface water <2500 feet	500
Distance to surface water >2500 feet, and:	
Site in annual or 10-yr floodplain	500
Site in 100-yr floodplain	400
Site in 500-yr floodplain	300
Site outside 500-yr floodplain	100

LIKELIHOOD OF RELEASE GROUNDWATER TO SURFACE WATER MIGRATION	Score	Data Type	Refs
1. OBSERVED RELEASE: If sampling data or direct observation support a release to surface water in the watershed, assign a score of 550. Record observed release substances on SI Table 7. NOTE: Evaluate ground water to surface water migration only for a surface water body that meets all of the following conditions: 1) A portion of the surface water is within 1 mile of site sources having a containment factor greater than 0. 2) No aquifer discontinuity is established between the source and the above portion of the surface water body. 3) The top of the uppermost aquifer is at or above the bottom of the surface water. Elevation of top of uppermost aquifer ___ft___ Elevation of bottom of surface water body ___ft___	**0**	**E**	**6**
LR =	**0**		

SURFACE WATER PATHWAY
LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET (CONTINUED)

DRINKING WATER THREAT TARGETS	Score	Data Type	Refs
Record the water body type, flow, and number of people served by each drinking water intake within the target distance limit in the watershed. **If there is no drinking water intake within the target distance limit, assign 0 to factors 3, 4, and 5.**	0		

Intake Name	Water Body Type	Flow	People Served

Are any intakes part of a blended system? Yes____ No____
If yes, attach a page to show apportionment calculations.

3. ACTUAL CONTAMINATION TARGETS: If analytical evidence indicates a drinking water intake has been exposed to a hazardous substance from the site, list the intake name and evaluate the factor score for the drinking water population (SI Table 8).

Level I: _____ People x 10 = ____
Level II: _____ People x 1 = ____ **Total =**

4. POTENTIAL CONTAMINATION TARGETS: Determine the number of people served by drinking water intakes for the watershed that have not been exposed to a hazardous substance from the site. Assign the population values from SI Table 9. Sum the values and multiply by 0.1.	0		
5. NEAREST INTAKE: Assign a score of 50 for any Level I Actual Contamination Drinking Water Targets for the watershed. Assign a score of 45 if there are Level II targets for the watershed, but no Level I targets. If no Actual Contamination Drinking Water Targets exist, assign a score for the intake nearest the PPE from SI Table 9. If no drinking water intakes exist, assign 0.	0		
6. RESOURCES: Assign a score of 5 if one or more surface water resource applies; assign 0 if none applies. • Irrigation (5 acre minimum) of commercial food crops or commercial forage crops • Watering of commercial livestock • Ingredient in commercial food preparation • Major or designated water recreation area, excluding drinking water use	5	E	7

SUM OF TARGETS T= **5.0**

SURFACE WATER PATHWAY (continued)
HUMAN FOOD CHAIN THREAT WORKSHEET

HUMAN FOOD CHAIN THREAT TARGETS	Score	Data Type	Refs
Record the water body type and flow for each fishery within the target distance limit. If there is no fishery within the target distance limit, assign a score of 0 at the bottom of this page.			
Fishery Name unnamed Water Body Noses Creek Flow 10-100 cfs Species Unknown Production _____ lbs/yr Species _____ Production _____ lbs/yr Fishery Name _____ Water Body Sweetwater Creek Flow 10-100 cfs Species _____ Production _____ lbs/yr Species _____ Production _____ lbs/yr Fishery Name _____ Water Body _____ Flow ____ cfs Species _____ Production _____ lbs/yr Species _____ Production _____ lbs/yr			
FOOD CHAIN INDIVIDUAL 7. ACTUAL CONTAMINATION FISHERIES: If analytical evidence indicates that a fishery has been exposed to a hazardous substance with a bioaccumulation factor greater that or equal to 500 (SI Table 10), assign a score of 50 if there is a Level I fishery. Assign 45 if there is a Level II fishery, but no Level I fishery. 8. POTENTIAL CONTAMINATION FISHERIES: If there is a release of a substance with a bioaccumulation factor greater than or equal to 500 to a watershed containing fisheries within the target distance limit, but there are no Level I or Level II fisheries, assign a score of 20. If there is no observed release to the watershed, assign a value for potential contamination fisheries from the table below using the lowest flow at all fisheries within the target distance limit:	**45**	**H**	**A5**

Lowest Flow	FCI Value
<10 cfs	20
10 to 100 cfs	2
>100 cfs, coastal tidal waters, oceans, or Great Lakes	0
3-mile mixing zone in quiet flowing river	10

FCI Value =

SUM OF TARGETS T= 45

SI TABLE 10: HUMAN FOOD CHAIN ACTUAL CONTAMINATION TARGETS FOR WATERSHED

Fishery ID: Noses Creek Sample Type: Sediment Level I _____ Level II ___X_____ References _SCDM (JUN96)__

Sample ID	Hazardous Substances	Concentration (mg/kg)	Benchmark Concentration (FDAAL)	% of Benchmark	Cancer Risk Concentration	% of Cancer Risk Concentration	RfD	% of RfD
SED-3	Copper	1100	NA	NA	NA	NA	NA	NA
			Highest Percentage	NA	Sum of Percents	NA	Sum of Percents	NA

SI TABLE 11: SENSITIVE ENVIRONMENT ACTUAL CONTAMINATION TARGETS FOR WATERSHED

none observed

Environment ID: _____ Sample Type: _____ Level I ___ Level II ___ Environmental Value _____

Sample ID	Hazardous Substances	Concentration (ug/l)	Benchmark Concentration (ASQC or AALAC)	% of Benchmark	References
			Highest Percent		

SURFACE WATER PATHWAY (continued)
ENVIRONMENTAL THREAT WORKSHEET

When measuring length of wetlands that are located on both sides of a surface water body, sum both frontage lengths. For a sensitive environment that is more than one type, assign a value for each type.

ENVIRONMENTAL THREAT TARGETS	Score	Data Type	Refs
Record the water body type and flow for each surface water sensitive environment within the target distance (see SI Table 12). If there is no sensitive environment within the target distance limit, assign a score of 0 at the bottom of the page.		E	5

Environment Name	Water Body Type	Flow
_____	_____	_____ cfs
_____	_____	_____ cfs
_____	_____	_____ cfs
_____	_____	_____ cfs

9. ACTUAL CONTAMINATION SENSITIVE ENVIRONMENTS: If sampling data or direct observation indicate any sensitive environment has been exposed to a hazardous substance from the site, record this information on SI Table 11, and assign a factor value for the environment (SI Tables 13 and 14).

Environment Name	Environment Type and Value (SI Tables 13 & 14)	Multiplier (10 for Level I, 1 for Level II)	Product

Score: 0

10. POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS: Score: 0 | Data Type: E | Refs: 4

Flow	Dilution Weight (SI Table 12)	Environment Type and Value (SI Tables 13 & 14)	Pot. Cont.	Product
20 cfs	0.1	0	0.1 =	0
cfs	X	X	0.1 =	
cfs	X	X	0.1 =	
cfs	X	X	0.1 =	
				Sum =

T = 0

SURFACE WATER PATHWAY (concluded)
WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY

WASTE CHARACTERISTICS

				Score
11. If an Actual Contamination Target (drinking water, human food chain, or environmental threat) exists for the watershed, assign the calculated hazardous waste quantity score, or a score of 100, whichever is greater.				**100**
12. Assign the highest value from SI Table 7 (observed release) or SI Table 3 (no observed release) for the hazardous substance waste characterization factors below. Multiply each by the surface water characteristics score for each threat.				
	Substance Value	HWQ	Product	WC Score (from Table)
Drinking Water Threat Toxicity/Persistence	100	1	1.00e+02	**3 (100 Max)**
Food Chain Threat Toxicity/Persistence Bioaccumulation	5.00e+05	100	5.00e+07	**18 (1000 Max)**
Environmental Threat Ecotoxicity/Persistence/Ecobioaccumulation	5.00e+06	1	5.00e+06	**32 (1000 Max)**

Product	WC Score
0	0
>0 to <10	1
10 to <100	2
100 to < 1,000	3
1,000 to < 10,000	6
10,000 to < 1E + 05	10
1E + 05 to <1E + 06	18
1E + 06 to <1E + 07	32
1E + 07 to <1E + 08	56
1E + 08 to <1E + 09	100
1E + 09 to <1E + 10	180
1E + 10 to <1E + 11	320
1E + 11 to <1E + 12	560
1E + 12 or greater	1000

SURFACE WATER PATHWAY THREAT SCORES

Threat	Likelihood of Release (LR) Score	Targets (T) Score	Pathway Waste Characteristics (WC) Score (determined above)	Threat Score (LR x T x WC)/82,500
Drinking Water	**500**	**5**	**3**	**0.09** (100 Max)
Human Food Chain	**500**	**45**	**18**	**4.91** (100 Max)
Environmental	**500**	**0**	**32**	**0.00** (60 Max)
SURFACE WATER PATHWAY SCORE (Drinking Water Threat + Human Food Chain Threat + Environmental Threat)				**5.00** (100 max)

SOIL EXPOSURE PATHWAY WORKSHEET
RESIDENT POPULATION THREAT

LIKELIHOOD OF EXPOSURE	Score	Data Type	Refs
1. OBSERVED CONTAMINATION: If evidence indicates presence of observed contamination (depth of 2 feet or less), assign a score of 550; otherwise, assign a 0. Note that a likelihood of exposure score of 0 results in a soil exposure pathway score of 0.	**0**	**H**	**A5**
LE =	**0**		

TARGETS

2. RESIDENT POPULATION: Determine the number of people occupying residences or attending school or day care on the property and within 200 feet of areas of observed contamination (HRS section 5.1.3). Level I: _____ people x 10 = _____ Level II: _____ people x 1 = _____ **Sum =**			
3. RESIDENT INDIVIDUAL: Assign a score of 50 if any Level I resident population exists. Assign a score of 45 if there are Level II targets but no Level I targets. If no resident population exists (i.e., no Level I or Level II targets), assign 0 (HRS Section 5.1.3).			
4. WORKERS: Assign a score from the table below for the total number of workers at the site and nearby facilities and within 200 ft. Of areas of observed contamination associated with the site.			

Number of Workers	Score
0	0
1 to 100	5
101 to 1,000	10
>1,000	15

5. TERRESTRIAL SENSITIVE ENVIRONMENTS: Assign a value for each terrestrial sensitive environment (SI Table 16) in an area of observed contamination.			

Terrestrial Sensitive Environment Type	Value
Sum =	0

0			
6. RESOURCES: Assign a score of 5 if any one or more of the following resources is present on an area of observed contamination at the site: assign 0 if none applies. - Commercial agriculture, - Commercial silviculture, - Commercial livestock production or commercial livestock grazing			
Total of Targets T=	**0**		

SOIL EXPOSURE PATHWAY WORKSHEET
NEARBY POPULATION THREAT

LIKELIHOOD OF EXPOSURE	Score	Data Type	Ref.
7. Attractiveness/Accessibility (from SI Table 17 or HRS Table 5-6) Value _____ Area of Contamination (from SI Table 18 or HRS Table 5-7) Value _____ Likelihood of Exposure (from SI Table 19 or HRS Table 5-8)			
LE =	**0**		

TARGETS	Score	Data Type	Ref.
8. Assign a score of 0 if Level I or Level II resident individual has been evaluated or if no individuals live within 1/4 mile travel distance of an area of observed contamination. Assign a score of 1 if nearby population is within 1/4 mile travel distance and no Level I or Level II resident population has been evaluated.			
9. Determine the population within 1 mile travel distance that is not exposed to a hazardous substance from the site (i.e., properties that are not determined to be Level I or Level II); record the population for each distance category in SI Table 20 (HRS Table 5-10). Sum the population values and multiply by 0.1.			
T =	**0**		

SOIL EXPOSURE PATHWAY WORKSHEET (concluded)

WASTE CHARACTERISTICS

10. Assign the hazardous waste quantity score calculated for soil exposure.	
11. Assign the highest toxicity value from SI Table 15 or 3.	
12. Multiply the toxicity and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below:	

Product	WC Score
0	0
>0 to <10	1
10 to <10	2
100 to <1,000	3
1,000 to < 10,000	6
10,000 to < 1E + 05	10
1E + 05 to < 1E + 06	18
1E + 06 to < 1E + 07	32
1E + 07 to < 1E + 08	56
1E + 08 or greater	100

Product = 0.00e+00

WC =

RESIDENT POPULATION THREAT SCORE: (Likelihood of Exposure, Question 1; Targets = Sum of Questions 2, 3, 4, 5, 6) $\frac{LE \times T \times WC}{82{,}500}$	**0.00**
NEARBY POPULATION THREAT SCORE: (Likelihood of Exposure, Question 7; Targets = Sum of Questions 8,9) $\frac{LE \times T \times WC}{82{,}500}$	**0.00**
SOIL EXPOSURE PATHWAY SCORE: **Resident Population Threat + Nearby Population Threat**	**0.00** (100 Max)

AIR PATHWAY WORKSHEET

LIKELIHOOD OF RELEASE

	Score	Data Type	Refs
1. OBSERVED RELEASE: If sampling data or direct observation support a release to air, assign a score of 550. Record observed release substances on SI Table 21.			
2. POTENTIAL TO RELEASE: If sampling data do not support a release to air, assign a score of 500. Optionally, evaluate air migration gaseous and particulate potential to release (HRS Section 6.1.2.).	**500**	E	9
LR =	**500**		

TARGETS

3. ACTUAL CONTAMINATION POPULATION: Determine the number of people within the target distance limit subject to exposure from a release of a hazardous substance to the air. a) Level I: _____ people x 10 = _____ b) Level II: _____ people x 1 = _____ **Total =**	**0**		
4. POTENTIAL TARGET POPULATION: Determine the number of people within the target distance limit not subject to exposure from a release of a hazardous substance to the air, and assign the total population score from SI Table 22. Sum the values and multiply the sum by 0.1.	**14.1**	E	10
5. NEAREST INDIVIDUAL: Assign a score of 50 if there are any Level I targets. Assign a score of 45 if there are Level II targets but no Level I targets. If no Actual Contamination Population exists, assign the Nearest Individual score from SI Table 22.	**7**	E	10
6. ACTUAL CONTAMINATION SENSITIVE ENVIRONMENTS: Sum the sensitive environment values (SI Table 13) and wetland acreage values (SI Table 23) for environments subject to exposure from the release of a hazardous substance to the air.			

Sensitive Environment Type	**Value**
Wetland Acreage	**Value**

7. POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS: Use SI Table 24 to evaluate sensitive environments not subject to exposure from a release.	**0**		
8. RESOURCES: Assign a score of 5 if one or more air resources apply within ½ mile of a source; assign a 0 if none applies. - Commercial agriculture, - Commercial silviculture, - Major or designated recreation area.	**0**		
T =	**21.1**		

SI TABLE 22 (From HRS TABLE 6-17): VALUES FOR POTENTIAL CONTAMINATION AIR TARGET POPULATIONS

Distance from Site	Pop.	Nearest Individual (choose highest)	Number of People within the Distance Category												Pop. Value
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,000 to 3,000,000	
On a source		20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	
0 to $\frac{1}{4}$ mile	89	*	1	4	13	41	131	408	1,304	4,081	13,034	40,812	130,340	408,114	13
> $\frac{1}{4}$ to $\frac{1}{2}$ mile	242	2	0.2	0.9	3	9	28	88	282	882	2,815	8,815	28,153	88,153	9
> $\frac{1}{2}$ to 1 mile	2574	1	0.06	0.3	0.9	3	8	26	83	261	834	2,612	8,342	26,119	26
> 1 to 2 miles	9792	0	0.02	0.09	0.3	0.8	3	8	27	83	266	833	2,659	8,326	27
> 2 to 3 miles	15951	0	0.009	0.04	0.1	0.4	1	4	12	38	120	375	1,199	3,755	38
>3 to 4 miles	19207	0	0.005	0.02	0.07	0.2	0.7	2	7	28	73	229	730	2,285	28
	Nearest Individual =	7												**Sum =**	141

References U.S. Census Bureau

* Score = 20 if the Nearest Individual is within $\frac{1}{8}$ mile of a source; score = 7 if the Nearest Individual is between $\frac{1}{8}$ and $\frac{1}{4}$ mile of a source.

AIR PATHWAY (concluded)

9. If any Actual Contamination Targets exist for the air pathway, assign the calculated hazardous waste quantity score or a score of 100, whichever is greater; if there are no Actual Contamination Targets for the air pathway, assign the calculated HWQ score for sources available to air migration.	**1**
10. Assign the highest air toxicity/mobility value from SI Table 21 &23.	**0**
11. Multiply the air pathway toxicity/mobility and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below:	**0**

Product	**WC Score**
0	0
>0 to <10	1
10 to <10	2
100 to <1,000	3
1,000 to < 10,000	6
10,000 to < 1E + 05	10
1E + 05 to < 1E + 06	18
1E + 06 to < 1E + 07	32
1E + 07 to < 1E + 08	56
1E + 08 or greater	100

Product = ***0.00e+00***

WC =

AIR PATHWAY SCORE: $\frac{\text{LE x T x WC}}{82{,}500}$

0.0 (100 max)

SITE SCORE CALCULATION	S	S^2
GROUND WATER PATHWAY SCORE (S_{GW})	0.93	0.86
SURFACE WATER PATHWAY SCORE (S_{SW})	5.00	25.00
SOIL EXPOSURE (S_S)	0.00	0.00
AIR PATHWAY SCORE (S_A)	0.00	0.00
SITE SCORE $\sqrt{\frac{S_{GW}^2+S_{SW}^2+S_S^2+S_A^2}{4}}$ =	2.5	

COMMENTS

WMD/SSMB
RECEIVED
JUN 02 1998
EPA-REGION 4
ATLANTA, GA

SITE INSPECTION SAMPLING PLAN

AJAY North America, LLC.
1400 Industry Road
Powder Springs, Cobb County, Georgia

EPA ID # GAD061425104

Prepared for
U.S. Environmental Protection Agency
Region IV

Prepared by
Montague M^c^Pherson
Environmental Specialist

Georgia Environmental Protection Division
Hazardous Waste Management Branch

May 29, 1998

Reviewed By:
Jane Hendricks
Acting Unit Coordinator

Approved By:

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1.0 INTRODUCTION

Under authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Acts of 1986 (SARA), the Georgia Environmental Protection Division (EPD), Hazardous Waste Management Branch will conduct a site investigation (SI) at the Ajay North America LLC site in Cobb County, Georgia. The purpose of this investigation is to collect information concerning conditions at the Ajay North America site sufficient to assess the threat posed to human health and the environment and to determine the need for additional investigation under CERCLA/SARA or other authority, and, if appropriate, support site evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL). The scope of the investigation includes the review of previous information, collection of non-sampling data and sampling waste and environmental media to test preliminary assessment (PA) hypotheses.

2.0 SITE DESCRIPTION, REGULATORY AND OPERATIONAL HISTORY

2.1 Location

The site is located at 1400 Industry Road SW, Cobb County, approximately 2 miles east-southeast of Powder Springs, Georgia. An access road to Ajay North America is located west of Industry Road just north of Georgia Metals, Inc. The geographical coordinates are approximately 33° 51' 25.5" latitude and 84° 39' 2.3" longitude as shown on the U.S. Geological Survey quadrangle topographical map (Reference 1).

The climate of Cobb County is generally mild to hot with humid summers and cool winters. The average daily maximum temperature during the summer is about 90° F and the average daily minimum temperature during the winter is about 30° F. Average annual precipitation is approximately 49 inches (Reference 2).

2.2 Site Description/History

The Ajay North America site occupies an area of approximately 12 acres and is located west of Industry Road. The site is bordered on the north by wooded areas and a railroad bed (former Seaboard Coastal railroad track), on the south by Noses Creek, on the west by Blue Flame Gas Company and on the east by Georgia Metals, Inc. (References 3 and 4). Phibro-Tech (formerly C.P. Chemicals) is located south-southeast of Ajay Chemicals. The property slopes gently to the south toward Noses Creek. The site has one main structure on it housing the offices and operations. Two additional buildings have recently been constructed; however, operations in those buildings have not begun (Reference 4). The site formerly had two surface impoundments; an unlined retention pond and a lined impoundment.

2.3 Operational History and Waste Characteristics

Ajay North America is a producer of inorganic chemicals for both agricultural and industrial uses including cuprous iodide for military batteries; potassium iodate, an oxidizer used in the textile industry; sodium selenite, a nutrition supplement for animal feed; and zinc selenite, a glass coloring (Reference 5). In order to manufacture the selenite products it is necessary to produce selenious acid from selenite metal, which is mixed with other compounds, including water, to make a salt. The dust from this process enters a scrubber which produces a liquor that is reused in the selenite manufacturing process. A caustic scrubber is also used in this process to reduce chlorine emissions. The process generates water that is reused in the

system. According to reports, the only water that is discharged is the cooling water which does not come into contact with any of the process material (Reference 4). The cooling water is discharged into Noses Creek. Floor washings from the drying room are collected in a small concrete floor sump and are allowed to evaporate.

During a 1987 site inspection conducted by EPD, two surface impoundments were observed on site, one lined and one unlined. The unlined impoundment had been in existence since 1974 and was used to hold discharge from the iodine manufacturing process. The discharge of this material resulted in approximately 52 tons of soil contaminated with iodate salt (Reference 5). Ajay installed a system to recover the iodine from the soil and the lined impoundment was then used for discharge from the iodine manufacturing process. Also discharged to the holding ponds were floor washings from the selenium products manufacturing area (Reference 5). As explained to EPD personnel conducting an inspection in June 1997, the selenium is totally consumed because two scrubbers are used for the selenium manufacturing process and floor washings are pumped through a filter system that recovers any unused selenium. At the request of EPD during the July 1987 site inspection, Ajay Chemicals sampled the sludge in the lined impoundment. There was no standing water in the unlined impoundment at the time of the inspection. The chemical analysis of the sludge material revealed that Ajay Chemical did discharge contaminants, including selenium, into the lined surface impoundment, but not at hazardous waste concentrations (Reference 5). Selenium was detected at a concentration of 0.75 mg/L.

2.4 Past Regulatory Activities

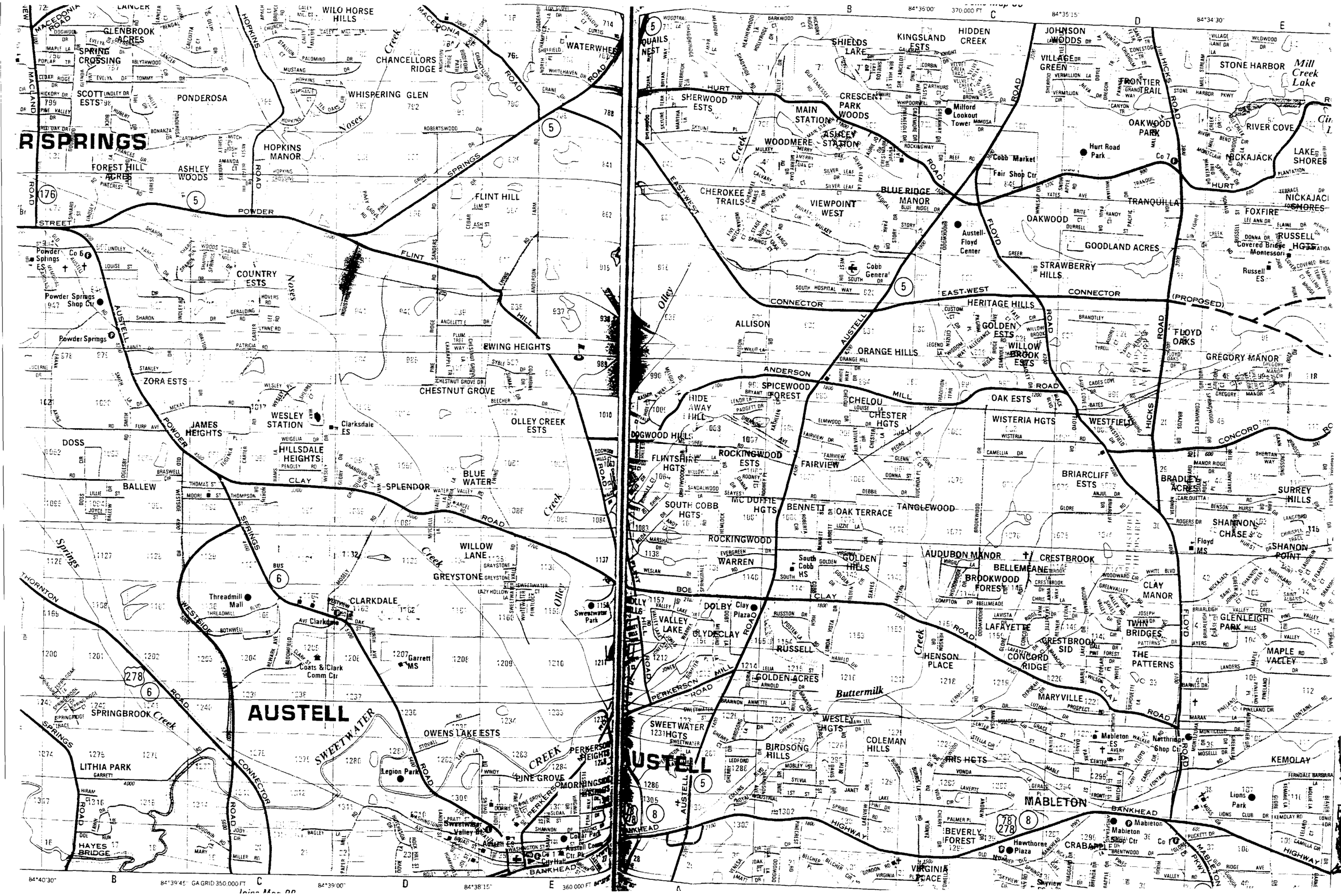
The surface impoundments closed in February 1994. According to Mr. Alan Shipp and Mr. Charles Pittard of Ajay Chemicals, material was excavated to approximately 8 feet below grade in the area of the unlined impoundment. A sample of this material was analyzed for volatiles, semi-volatiles, pesticides/herbicides and metals. The results indicated all constituents analyzed to be below their respective detection limits (Reference 4).

In March of 1994 EPD collected soil samples and one groundwater sample from the Georgia Metals site as part of a Site Investigation regarding lead contamination (Reference 3). The groundwater sample was obtained from a supply well on the Georgia Metals site. The supply well is 500 feet deep and Ajay North America uses water from this well in their production process (Reference 3). Results of the sample from the well detected selenium at 0.1 mg/l. No lead was detected in the well and there is no known source for selenium at the Georgia Metals facility.

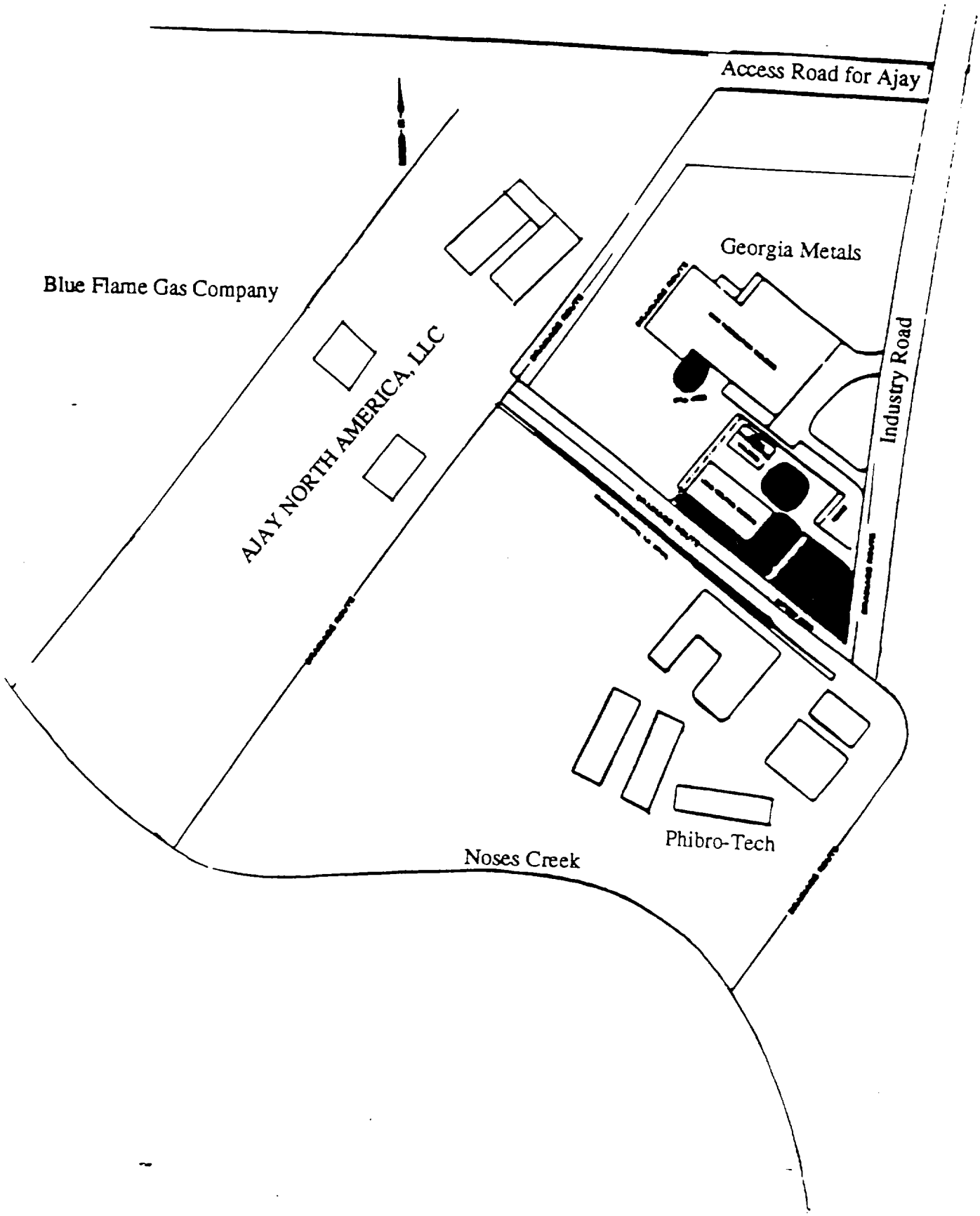
A review of EPD's facility file for the neighboring Phibro-Tech site revealed that selenium has been detected in monitoring wells on their property and in Noses Creek (Reference 6).

3.0 COLLECTION OF NON-SAMPLING DATA

A reconnaissance at the site was conducted on May 20, 1998 to determine if any of the site conditions had changed since the PA was completed. The facility is still active. The lined and unlined pond areas were covered with gravel. Access to Georgia Metals, an adjacent property, was provided since Ajay Chemical is the current owner. This access is necessary for the sampling of the supply well there. Permission to gain access to the property of Phibro-Tech is being negotiated. Sampling of groundwater wells along the western portion of the property is needed to characterize the selenium contamination.



R SPRINGS
AUSTELL
MABLETON
WILO HORSE HILLS
GLENBROOK ACRES
SPRING CROSSING
SCOTT ESTS
PONDEROSA
CHANCELLORS RIDGE
WHISPERING GLEN
HOPKINS MANOR
FOREST HILL ACRES
ASHLEY WOODS
FLINT HILL
COUNTRY ESTS
Powder Springs ES
Powder Springs Shop Ctr
Powder Springs
EWING HEIGHTS
ZORA ESTS
CHESTNUT GROVE
WESLEY STATION
Clarksdale ES
JAMES HEIGHTS
OLLEY CREEK ESTS
DOSS
HILLSDALE HEIGHTS
BLUE WATER
BALLEW
SPLENDOR
WILLOW LANE
GREYSTONE
CLARKDALE
Threadmill Mall
Coats & Clark Comm Ctr
Garrett MS
SPRINGBROOK
OWENS LAKE ESTS
LITHIA PARK
Legion Park
PINE GROVE
HAYES BRIDGE
Sweetwater Park
WATERWHEEL
QUAILS NEST
SHIELDS LAKE
KINGSLAND ESTS
HIDDEN CREEK
JOHNSON WOODS
VILLAGE GREEN
STONE HARBOR
Mill Creek Lake
FRONTIER TRAIL
SHERWOOD ESTS
MAIN STATION
CRESCENT PARK WOODS
Milford Lookout Tower
OAKWOOD PARK
RIVER COVE
WOODMERE
ASHLEY STATION
Hurt Road Park
Cobb Market
Fair Shop Ctr
NICKAJACK
LAKE SHORES
CHEROKEE TRAILS
VIEWPOINT WEST
BLUE RIDGE MANOR
TRANQUILLA
OAKWOOD
Austell-Floyd Center
GOODLAND ACRES
FOXFIRE
RUSSELL
Covered Bridge Montessori
Russell ES
STRAWBERRY HILLS
Cobb General
EAST-WEST CONNECTOR (PROPOSED)
HERITAGE HILLS
ALLISON
GOLDEN ESTS
WILLOW BROOK ESTS
FLOYD OAKS
ORANGE HILLS
GREGORY MANOR
SPICEWOOD FOREST
CHELOU
OAK ESTS
HIDE AWAY HILL
CHESTER HGTS
WISTERIA HGTS
WESTFIELD
DOGWOOD HILLS
ROCKINGWOOD ESTS
FLINTSHIRE HGTS
FAIRVIEW
BRIARCLIFF ESTS
BRADLEY ACRES
SURREY HILLS
SOUTH COBB HGTS
MC DUFFIE HGTS
BENNETT
OAK TERRACE
TANGLEWOOD
SHANNON CHASE
SHANON POINT
ROCKINGWOOD
WARREN
South Cobb HS
GOLDEN HILLS
AUDUBON MANOR
CRESTBROOK
BELLEMEANE
BROOKWOOD FOREST
CLAY MANOR
DOLBY
Clay Plaza
VALLEY LAKE
CLYDE CLAY
RUSSELL
LAFAYETTE
TWIN BRIDGES
GLENLEIGH PARK
CRESTBROOK SID
CONCORD RIDGE
HENSON PLACE
THE PATTERNS
MAPLE VALLEY
GOLDEN ACRES
Buttermilk
MARYVILLE
SWEETWATER HGTS
WESLEY HGTS
COLEMAN HILLS
BIRDSONG HILLS
Mableton ES
Northridge Shop Ctr
KEMOLAY
IRIS HGTS
BEVERLY FOREST
CRABAPPLE
Hawthorne Plaza
VIRGINIA PLACE
Lions Park
Mableton
Mableton Shop Ctr
Skyview


Access Road for Ajay
Blue Flame Gas Company
AJAY NORTH AMERICA, LLC
Georgia Metals
Industry Road
Phibro-Tech
Noses Creek

Site Sketch

4.0 SAMPLING ACTIVITIES

4.1 Sampling Objectives

The objectives of the SI are to collect analytical data to identify hazardous substances at the site and investigate whether hazardous substances have been released to the environment and whether the substances have affected human health and the environment. The proposed sampling plan calls for collection of groundwater, surface water and soil samples to address potential pathways of exposure identified in the PA. All samples will be analyzed for selenium.

4.2 Quality Assurance Program

The sampling methods will follow Region IV's EISOPQAM (Reference 3). New disposable latex sampling gloves will be worn by sampling personnel for each new sampling location. Following collection, each sample will be placed in a Zip-Lock® or similar bag and then placed in a cooler that is filled with ice. The samples will be kept in the coolers until they are transported to the EPD Laboratory in Atlanta. Chain-of-custody sheets will be maintained by field personnel until samples are handed over to the EPD Laboratory in Atlanta. All the analyses of the samples will be performed at the EPD Laboratory.

The quality assurance samples will include a duplicate soil sample. A trip blank will be carried in the cooler during the entire sampling event. One equipment field rinsate blank will be collected. Two background soil samples will be collected to determine background levels of metals.

4.3 Decontamination Procedures

Stainless steel hand augers and soil sampling equipment will be decontaminated in the field, unless enough clean equipment is available to negate the need for decontamination. A decontamination area will be set up in front of the office in the parking area. The augers will be washed with a phosphate-free detergent (such as Alconox), and rinsed with distilled water. The liquids from the decontamination will be collected in 5-gallon buckets and transported back to the lab where disposal will be determined following receipt of the final laboratory analyses. The Geoprobe will be decontaminated at the EPD Laboratory.

4.4 Source Sampling

Soils from the lined and unlined ponds were removed in 1994 . Therefore, no source sampling will be attempted.

4.5 Groundwater Sampling

Selenium was detected in a groundwater sample taken from the supply well on the Georgia Metals site. This sample was taken by EPD in March of 1994. Another groundwater sample taken in June of 1997 detected selenium at < 0.01 ppm. A repeat groundwater sample (WA1) will be taken from this supply well. Since groundwater flow is to the south/southeast, samples (WA2 and WA3, respectively) will be collected from groundwater wells MW-16 and MW-17 (References 5 and 6) (see Appendix A) .

4.6 Surface Water and Sediment Sampling

Selenium was detected in Noses Creek near the Ajay facility, so samples will be collected from surface water sampling locations in Noses Creek. One sample (WA4) will be taken upstream and southwest of Ajay's property, another sample (WA5) southeast at the SW-9 location and another sample (WA6) at the SW-1 location (see Appendix A1). Surface water samples will also be taken in the unnamed tributary if water is present.

4.7 Soil Sampling

Two background soil samples (S1 and S2) will be taken in the area of the office and near the fence bordering the Blue Flame Gas Company. This area is also upslope from the ponds. One sample (S3) will be taken in the area, where possible, near the lined and unlined ponds. These ponds are now excavated, filled and covered with gravel. Another sample (S4) will be taken from the area of the property line where Ajay Chemical and Phibro-Tech meet. One sample (S5) from the culvert/ditch area will be taken and two others (S6) and (S7) will be taken from the ditch/drainage areas by the southwest and southeast property fence, respectively (see Appendix A2). Additional soil samples, where deemed necessary, will be collected.

Soil samples will be collected by advancing a stainless steel sampling auger to approximately 6 inches below the land surface. As discussed above, the hand augers will be decontaminated between sampling locations. Direct Push Technology will also be used to collect samples in the area of the former ponds and by the culvert/ditch area.

5.0 INVESTIGATION DERIVED WASTES PLAN

Investigation-derived wastes (IDW) include personal protective equipment, disposable sampling equipment, and soil not collected as a sample. Reusable personal protective equipment will be decontaminated. All disposable personal protective and sampling equipment will be double-bagged and taken to the EPD Laboratory. Soil not collected as a sample will be returned to the ground at the sample point. Water collected from decontamination procedures is not expected to be hazardous and will be held at the EPD Laboratory until the sample analyses are received. All IDW will be disposed of in accordance with state and federal regulations.

6.0 PROJECT MANAGEMENT

6.1 Field Equipment/Health and Safety

Field respiratory protection will be Level D. If air-borne dust levels increase significantly, sampling will continue at Level C. Off-site sampling will be conducted at Level D protection. Field dress for the reconnaissance will include steel-toe work boots, disposable gloves, and hard hat. For sampling, disposable gloves will be worn. Other items required for this investigation include sample containers and sampling tools. A complete equipment list is provided as Appendix B. The Site Health and Safety Plan is included as Appendix C. All field personnel will be briefed on the Health and Safety issues.

6.2 Project Schedule

The project started in mid-May 1998 and is expected to end in August 1998. Non-sampling data collection began in late May and will continue through June 1998. The SI field work will take place the week of June 8, 1998. When the field tasks are completed, preparation of the draft SI report will begin. Analytical results will be reviewed by the middle of July, and the final SI report and HRS score will be completed by the end of August 1998.

REFERENCES

1. United States Geological Survey (U.S.G.S.) Topographic Quadrangles; Mableton, Marietta, Austell and Lost Mountain, Georgia.

2. Soil Survey of Cobb County, Georgia, Grover J. Thomas, Jr., Soil Conservation Service, Issued December 1973.

3. Georgia Metals, Inc., Facility File, Georgia Department of Natural Resources (DNR), Environmental Protection Division (EPD), Hazardous Waste Management Branch.

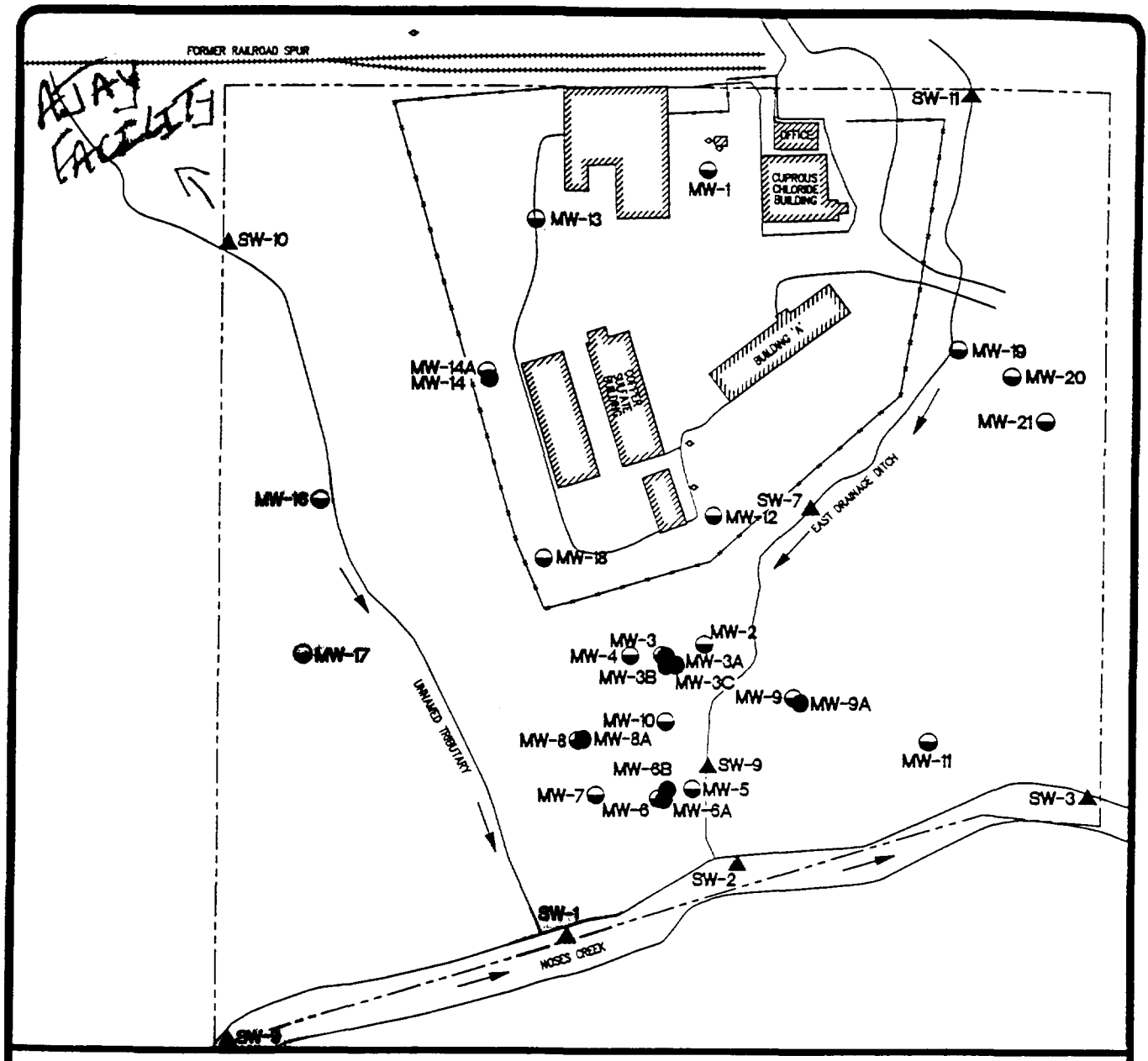
4. Preliminary Assessment, Ajay Chemicals, Inc., Powder Springs, Georgia, Nicole Long of Georgia Environmental Protection Division, June 26, 1997.

5. Ajay Chemicals, Inc., Facility File, Georgia DNR, EPD, Hazardous Waste Management Branch, Generator Compliance Program.

6. Phibro-Tech, Inc., Semi-Annual Groundwater Monitoring Reports, 1990-1997, Facility File, Georgia DNR, EPD, Hazardous Waste Management Branch, Land Disposal Unit.

APPENDICES

APPENDIX A



LEGEND

- PROPERTY LINE
- FENCE
- RAILROAD SPUR
- BUILDING
- CREEK FLOW DIRECTION
- MW-1 EXISTING SHALLOW MONITORING WELL & ID #
- MW-16 EXISTING DEEP MONITORING WELL & ID #
- SW-1 SURFACE WATER SAMPLING LOCATIONS & ID #

NORTH

SCALE

50 0 25 50

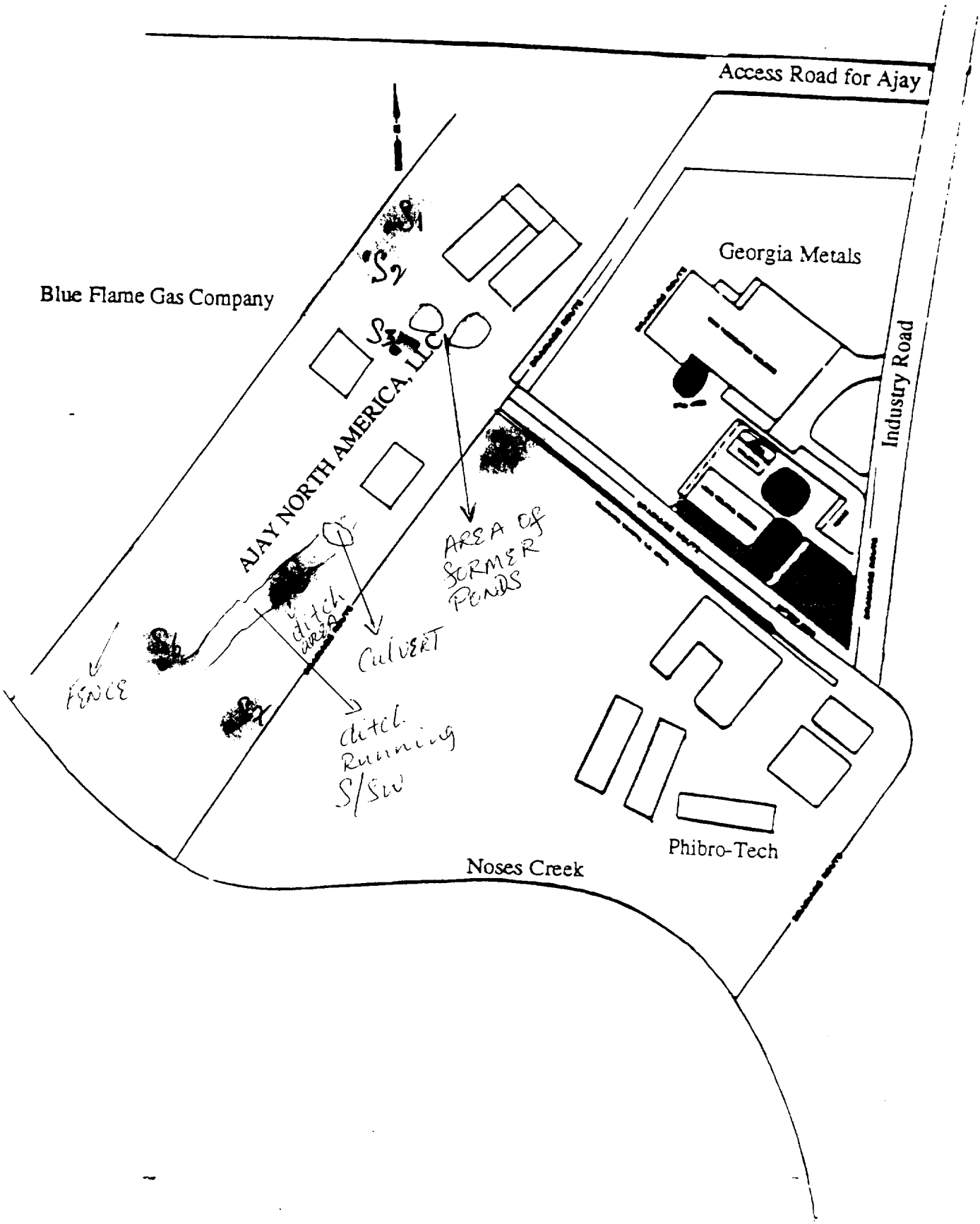
FEET

NOTES

1480-105 STF HP4LMM 12-22-97 RCW 1480.40002 PART B

GROUNDWATER MONITOR WELL AND SURFACE WATER SAMPLE LOCATIONS

A1



Site Sketch

A2

Appendix B

EQUIPMENT LIST:

Geoprobe
Tyvek
Hard hats
Dust Cartridges (Respirator)
Disposable Gloves
Trash Bags
Tape
Zip-Lock bags
Cooler
Sample Bottles and labels
Ice
Field Book
Sample Bottle Labels
Custody Sheets
Wading Boots
Hand Auger
Dedicated Sampling Scoops
Steel-toe Work Boots
Camera and film
Safety Glasses/Goggles
Decon bucket and brush
Deionized water and alconox for decontamination
Bucket to collect decontamination water

APPENDIX C

HAZARDOUS WASTE MANAGEMENT BRANCH
SITE SAFETY AND WORK PLAN

SITE DESCRIPTION

DATE: June 8-9, 1998

LOCATION: Ajay North America, LLC.
1400 Industry Road
Powder Springs, Cobb County, Georgia 30315

HAZARDS: Selenium contamination

AREA AFFECTED: Groundwater, surface water and possibly soil contamination

ADDITIONAL INFORMATION:

Selenium was detected in soil and groundwater samples. Surface water samples are planned to be taken in addition to the Creek samples, but this depends on the presence of water runoff.

ENTRY OBJECTIVES:
(Actions, tasks to be accomplished, etc.)

On-site collection of non-sampling data (photographs, inventory, measurements)
On-site collection of soil, groundwater and surface water samples.
Off-site collection of surface water and groundwater samples.

ONSITE ORGANIZATION/COORDINATION

Team Leader	Jane Hendricks
Team Members	Montague M^c^Pherson, David Brownlee, Sarah Merchant

ONSITE CONTROL

The site was in use during a previous visit. The property owner will be contacted prior to arrival at the site. Montague M^c^Pherson will be the site contact.

HAZARD EVALUATION

Hazards known or suspected to be on site based on sampling in 1994 include Selenium.

The primary hazards of known contamination are identified below:

Substances Involved	Concentrations	Primary Hazard (i.e., toxic, inhalation, etc)
Selenium	0.1 mg/L	Toxic by ingestion, adsorbtion, inhalation

PERSONAL PROTECTIVE EQUIPMENT

Based on the evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

Steel-toe boots, hard hats and safety glasses shall be worn during the site visit. No team member will enter

a building alone. Disposable sampling gloves will be worn during all sample collection.

SITE SAFETY AND HEALTH PLAN

Site Safety Officer
Montague McPherson is the designated Site Safety Officer and is directly responsible for safety recommendations on-site.

Emergency Medical Care

Grady Hospital at 80 Butler Street is located within 7 minutes of the site at 162 Milton Avenue, SE The attached map shows a route to this medical facility. The phone number at the Medical Center is (404) 616-4307.

First aid equipment if available onsite at the following locations:

Equipment	Location
First-aid Kit	Vehicle

List of Emergency Phone Numbers: 911 shall be contacted for medical emergencies.

Personal Monitoring

The following personal monitoring will be in effect onsite:

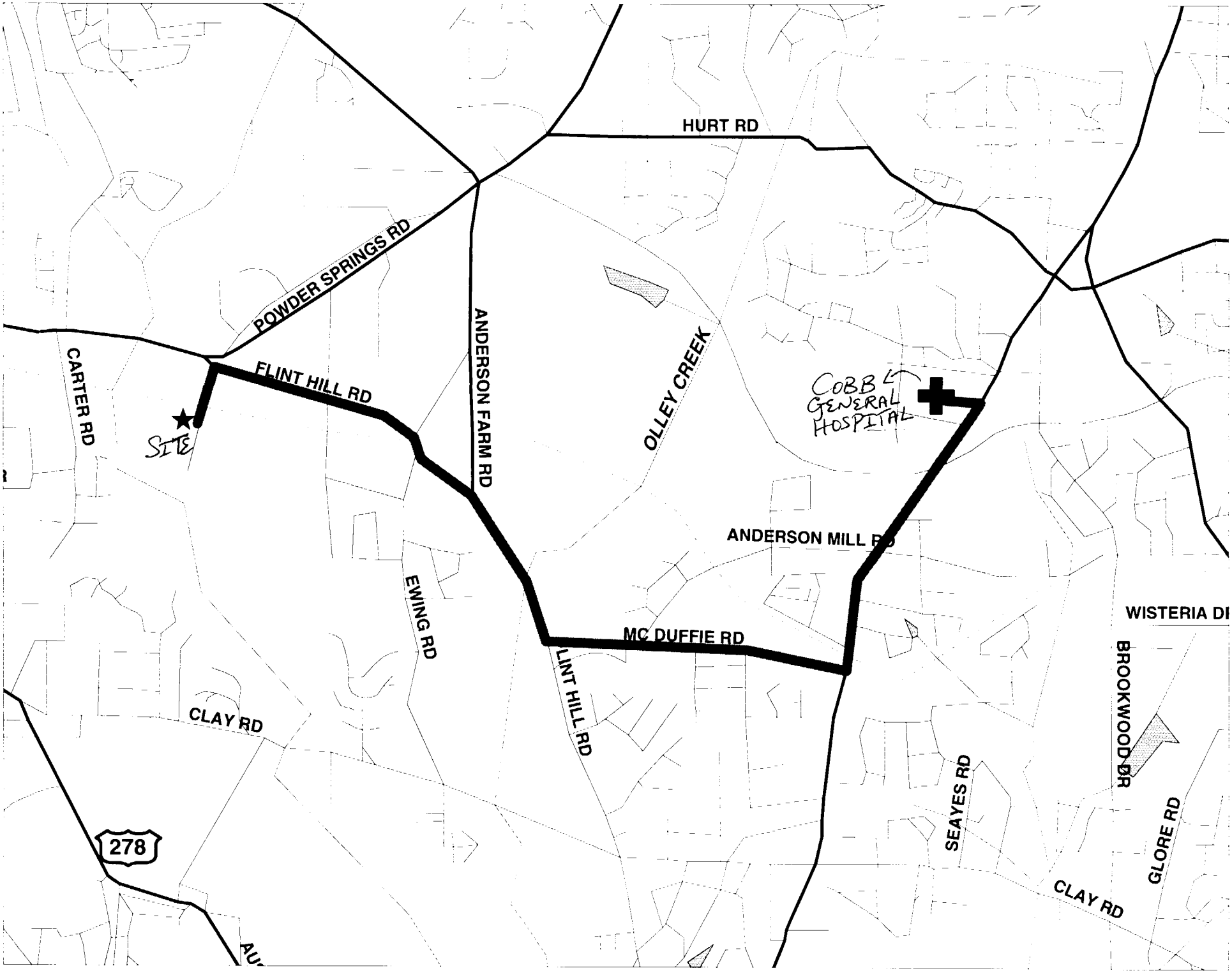
Personal exposure sampling: Personal Exposure sampling will not be conducted.

Medical monitoring: No medical monitoring is to be performed during the site visit.

All site personnel have read the above plan and are familiar with its provision.

	Name	Signature
Site Safety Officer	Montague McPherson	_____
Other Site Personnel	David Brownlee	_____

Approved by _____ Date__/ /98



DISTANCE TO HOSPITAL IS 5 MILES.

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

EPA ID: GAD061425104 **Site Name:** AJAY **State ID:**

Alias Site Names:

City: POWDER SPRINGS **County or Parish:** COBB **State:** GA

Refer to Report Dated: **Report Type:** PRELIMINARY ASSESSMENT 001

Report Developed by:

DECISION:

- ☐ **1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**
  - ☐ **1a. Site does not qualify for further remedial site assessment under CERCLA (No Further Remedial Action Planned - NFRAP)**
  - ☐ **1b. Site may qualify for action, but is deferred to:**
- ☒ **2. Further Assessment Needed Under CERCLA:**
  - **2a. Priority:** ☐ **Higher** ☒ **Lower**
  - **2b. Other: (recommended action)**

DISCUSSION/RATIONALE:

PA score is 32.83

Site Decision Made by: ANNIE M. GODFREY

Signature: Annie M. Godfrey **Date:** 12/08/97

EPA Form # 9100-3

PRELIMINARY ASSESSMENT

Ajay North America, LLC.
Powder Springs, Cobb County, Georgia

EPA ID # GAD061425104

Prepared for
U.S. Environmental Protection Agency
Region IV

Prepared by
Nicole Long
Environmental Engineer

Georgia Environmental Protection Division
Hazardous Waste Management Branch

June 30, 1997

Reviewed by Steve White

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Appendix A Flood Insurance Rate Map
Appendix B Trip Report

June 30, 1997

PREPARED BY: Nicole Long
Georgia Environmental Protection Division

SITE: Ajay North America, LLC.
Powder Springs, Cobb County, GA

1.0 INTRODUCTION

Under authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendment and Reauthorization Act of 1986 (SARA), the Georgia Environmental Protection Division (EPD), Hazardous Waste Management Branch, conducted a Preliminary Assessment (PA) at the Ajay North America site, Cobb County, Georgia (USEPA ID GAD061425104). The purpose of this investigation was to collect information concerning conditions at the Ajay North America site sufficient to assess the threat posed to human health and the environment and to determine the need for additional investigation under CERCLA/SARA, or other appropriate action. The scope of the investigation included review of available file information, a comprehensive target survey and an on-site and off-site reconnaissance.

2.0 SITE DESCRIPTION, OPERATIONAL HISTORY AND WASTE CHARACTERISTICS

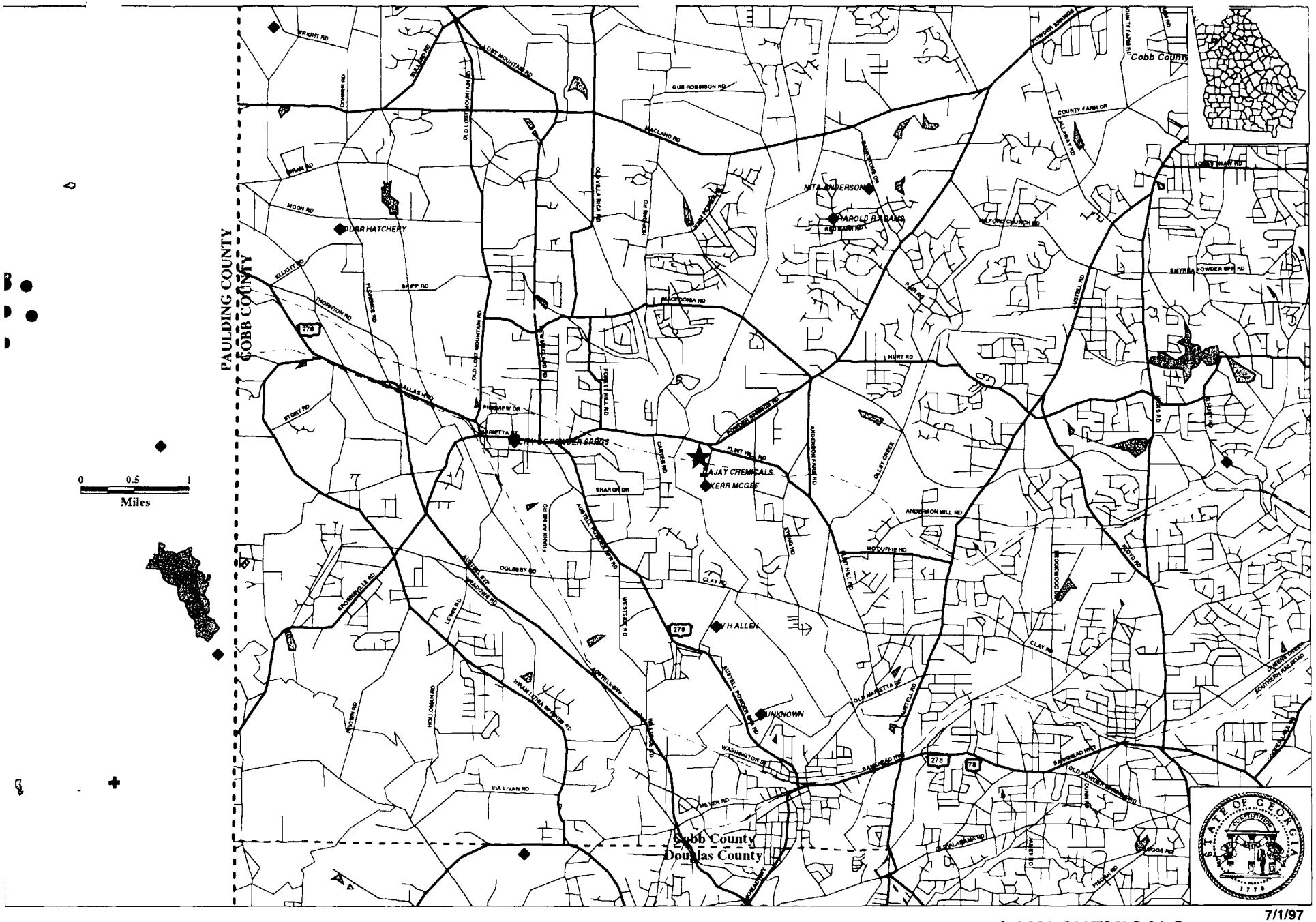
2.1 Location

The site is located at 1400 Industry Road SW, Cobb County, approximately 2 miles east-southeast of Powder Springs, Georgia . An access road to Ajay North America is located west of Industry Road just north of Georgia Metals, Inc. The geographical coordinates are approximately 33° 51' 25.5" latitude and 84° 39' 2.3" longitude as shown on the U.S. Geological Survey quadrangle topographical map, included in Plate 1, (Reference 1).

The climate of Cobb County is generally mild to hot with humid summers and cool winters. The average daily maximum temperature during the summer is about 90° F and the average daily minimum temperature during the winter is about 30° F. Average annual precipitation is approximately 49 inches (Reference 2).

2.2 Site Description

The Ajay North America site occupies an area of approximately 12 acres and is located west of Industry Road. The site is bordered on the north by wooded areas and a railroad bed (former Seaboard Coastal railroad track), on the south by Noses Creek, on the west by Blue Flame Gas Company and on the east by Georgia Metals, Inc. (References 3 and 4). Phibro-Tech (formerly C.P. Chemicals) is located south-southeast of Ajay Chemicals. The property slopes gently towards the south toward Noses Creek. The site has one main structure on



- Public Supply Well
- Surface Water Intake
- Domestic Well
- Unused Well
- Spring
- Industrial Well
- Commercial Well
- Irrigation Well
- Livestock well
- Well - Unknown use
- Other Well
- County Boundary
- Road
- Major Highway
- Stream/River
- Railroad

FIGURE 1

7/1/97

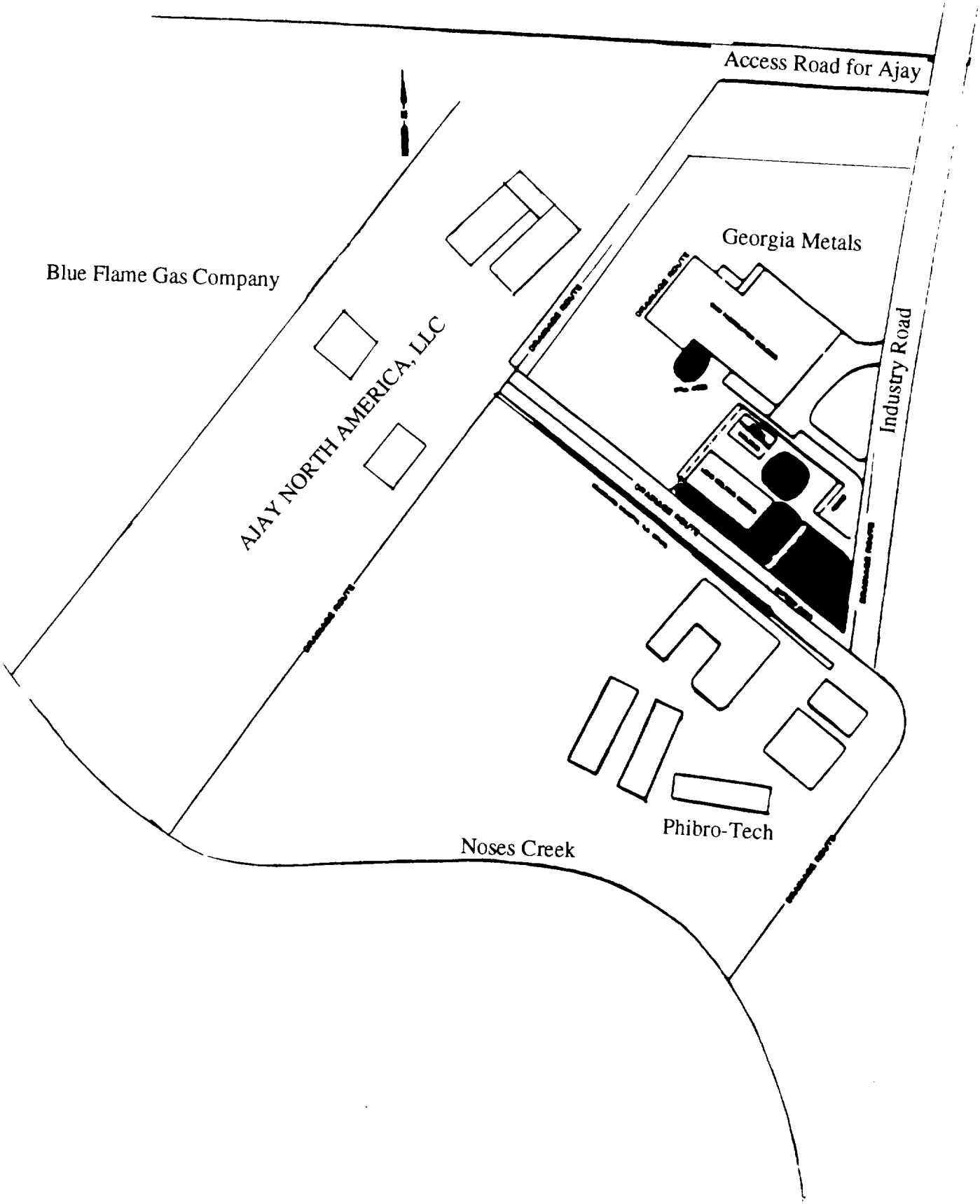
AJAY CHEMICALS
1400 INDUSTRY ROAD
POWDER SPRINGS, COBB COUNTY

Well Locations

33 51' 25.5" LAT / 84 39' 2.3" LONG

SOURCES: Georgia Public Water Source Inventory, 1994; US Census Bureau 1990; Ga. Water Source Inv., USGS, 1995

2



Site Sketch

Adapted from illustration from surface soil sampling and analysis plan submitted by Lake Engineering and Development, Inc.

FIGURE 2

it housing the offices and operations. Two additional buildings have recently been constructed; however, operations in those buildings have not begun (Reference 4). The site formerly had two surface impoundments on the property; an unlined retention pond and a lined impoundment.

2.3 Operational History and Waste Characteristics

Ajay North America is a producer of inorganic chemicals for both agricultural and industrial uses including cuprous iodide for military batteries, potassium iodate, an oxidizer used in the textile industry, sodium selenite, a nutrition supplement for animal feed, and zinc selenite, a glass coloring (Reference 12). In order to manufacture the selenite products it is necessary to produce selenious acid from selenite metal which is mixed with other compounds, including water, to make a salt. The dust from this process enters a scrubber which produces a liquor that is reused in the selenite manufacturing process. A caustic scrubber is also used in this process to reduce chlorine emissions. The process generates water that is reused in the system. According to Mr. Alan Shipp of Ajay North America, the only water that is discharged is the cooling water which does not come into contact with any of the material (Reference 4). The cooling water is discharged into Noses Creek. Floor washings from the drying room are collected in a small concrete floor sump and are allowed to evaporate.

During a 1987 site inspection conducted by EPD, two surface impoundments were observed on site, one lined and one unlined. The unlined impoundment was in existence since 1974 and had been used to hold discharge from the iodine manufacturing process. The discharge of this material resulted in approximately 52 tons of soil contaminated with iodate salt (Reference 12). Ajay installed a system to recover the iodine from the soil and the lined impoundment was then used for discharge from the iodine manufacturing process. Also discharged to the holding ponds were floor washings from the selenium products manufacturing area (Reference 12). Mr. Shipp explained to EPD personnel conducting the inspection that the selenium is totally consumed because two scrubbers are used for the selenium manufacturing process and floor washings are pumped through a filter system that recovers any unused selenium. At the request of EPD during the July 1987 site inspection, Ajay Chemicals sampled the sludge in the lined impoundment. There was no standing water in the unlined impoundment at the time of the inspection. The chemical analysis of the sludge material revealed that Ajay Chemical did discharge contaminants, including selenium, into the lined surface impoundment, but not at hazardous concentrations (Reference 12). Selenium was detected at a concentration of 0.75 mg/L.

The surface impoundments were removed from the site in February 1994. According to Mr. Shipp and Mr. Charles Pittard, also of Ajay Chemicals, material was excavated to approximately 8 feet below grade in the area of the unlined impoundment. A soil sample of this material was analyzed for volatiles, semi-volatiles, pesticides/herbicides and metals. Results indicated all constituents analyzed to be below their respective detection limits (Reference 4).

In March of 1994 EPD collected soil samples and one groundwater sample from the Georgia Metals site as part of a Site Investigation regarding lead contamination (Reference 3). The groundwater sample was obtained from a supply well on the then Georgia Metals property.

The supply well is 500 feet deep and Ajay North America uses water from this well in their production process (Reference 3). Results of the sample from the well revealed selenium at 0.1 mg/l. No lead was detected in the well and there is no known source for selenium at the Georgia Metals facility.

A review of EPD's facility file for the neighboring Phibro-Tech site revealed that selenium has been detected in monitoring wells on their property and in Noses Creek (Reference 13).

3.0 GROUNDWATER PATHWAY

3.1 Hydrogeologic Setting

Cobb County is in the central uplands district of the Piedmont physiographic province (Reference 5). The underlying geology of the area is made up of metamorphic and igneous rocks. Covering most of the area is saprolite, a clayey residual deposit produced by the weathering of the rocks. Depending on the properties of the parent rock and the topography, the saprolite in this area can range from 0 to 200 feet.

Groundwater in the area occupies joints, fractures and other secondary openings in the bedrock and pore spaces of the overlying soil. Precipitation recharges the groundwater found in these underground openings. Generally groundwater tends to flow the way of the surface topography of the area. This area slopes to the south/southwest toward Noses Creek (References 1 and 4). Groundwater flow direction was determined to be to the west-southwest at the neighboring Phibro-Tech site (Reference 13). Depth to groundwater in the vicinity of the site is about 7 feet and near Noses Creek, 4 feet.

3.2 Groundwater Targets

There are approximately 851 people within a 4 mile radius of the site who rely on private wells for their drinking water. Approximately four of these people live within 1/2 mile of the site (Reference 7). The Powder Springs City well, located approximately 1.7 miles from the site, supplies water to 280 connections in the old central part of the City. Powder Springs buys drinking water from the Cobb/Marietta Water Authority that supplies water to the majority of the population within a four mile radius of the site. The Cobb/Marietta Water Authority gets its water from two surface water intakes. One intake is located on the Chattahoochee River and the other is located on Allatoona Lake.

Table 1 shows a population breakdown, by radial distance from the site, of private and public water users based on U.S. Census data (Reference 7). According to this information, no one within 1/4 mile, and four person within 1/2 mile of the site draws drinking water from a private well.

Table 1: Population Using Public and Private Drinking Water

	Distance from Site (Miles)						
	0 to .25	.25 to .5	.5 to 1	1 to 2	2 to 3	3 to 4	Total
Total Pop.	89	242	2574	9792	15951	19207	47855
Private Well Users	0	4	36	229	299	283	851
Public Water Users	89	238	2538	9562	15652	18924	47004

3.3 Groundwater Conclusions

Selenium has been detected in the supply well on the property now owned by Ajay North America (property formerly owned by Georgia Metals). This well is not used for drinking water, but for process supply at Ajay. The groundwater flow direction is generally to the west-southwest and groundwater in the area discharges to rivers and creeks. Selenium has also been detected in monitoring wells at the Phibro-Tech facility located southeast of Ajay North America. Selenium has not been detected in the Powder Springs City well (Reference 14). According to 1990 U.S. Census data, the nearest resident drinking ground water is located within one-half mile of the site. However, it is not suspected that any drinking water wells have been impacted.

4.0 SURFACE WATER PATHWAY

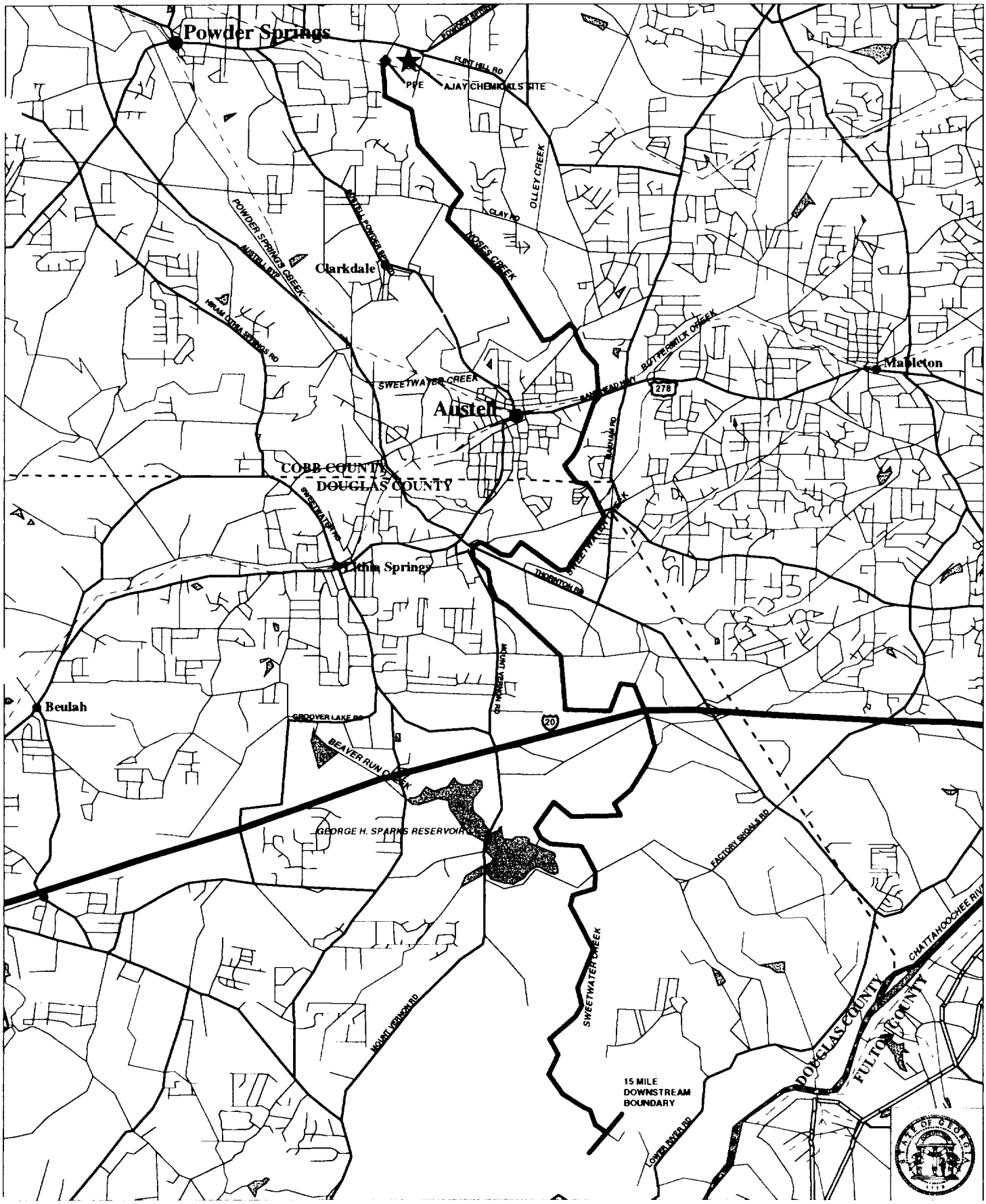
4.1 Hydrologic Setting

The general area slopes to the south. A drainage ditch is located east of the site and is separated from the drainage ditch for the Georgia Metals site. The runoff from the site empties into Noses Creek south of the site. The site is not within a 500 year floodplain (Reference 9).

The drainage ditch along the east side of Ajay Chemicals is approximately the site boundary with Georgia Metals and Phibro-Tech. The drainage ditch does not cross either of these two properties. The infiltration rate is expected to be low since clayey soils were observed in the area (Reference 4).

4.2 Surface Water Targets

There are no drinking water intakes on the surface water pathway for a distance of 15 miles downstream of the site (see Figure 3). However, these waters are used for fishing and include Sweetwater Creek State Park. Groundwater in the area discharges to rivers and creeks.



Site location
Wetlands
Surface Water Pathway
County Boundary
Hydrology
City/Town
Unincorporated Town
Probable Point of Entry

AJAY CHEMICALS SITE - POWDER SPRINGS, COBB COUNTY
15 MILE SURFACE WATER DOWNSTREAM PATHWAY

Source: 1990 Census (TIGER), 1985 GA DOT (Wetlands)
6/20/97

FIGURE 3

There are no federally or state designated endangered or threatened wildlife found in Cobb County (Reference 10). Six threatened or endangered plants are found in Cobb County: Draba aprica, Nestronia umbellula, Arabis georgianna, Cypripedium aculae, Cyripedium calceolus and Schisandra glabra (Reference 11). These plants are not expected to be found in the release source area given their habitats (Reference 11).

4.3 Surface Water Conclusions

The distance to the nearest water body is approximately 1400 feet from the site. The surface impoundments previously at Ajay North America have been removed. All floor washings are collected in floor sumps and are allowed to evaporate. Ajay and Phibro-Tech both discharge "non-contact cooling water" to drainage ditches that empty into Noses Creek. As part of their semi-annual groundwater monitoring, Phibro-Tech analyzes surface water samples at three points along Noses Creek (see Figure 4). The highest selenium concentration detected during this sampling has been 0.07 mg/l in March of 1995 at sampling point SW-1. Samples obtained further downstream at Phibro-Tech's east boundary have been non-detect for selenium.

Phibro-Tech's consultant did report in an exposure information report that vertical groundwater flow gradients measured during the groundwater assessment indicate that groundwater from the Phibro-Tech facility is discharging to Noses Creek. It is reasonable to hypothesize that surface water contamination could result from such a discharge from selenium contaminated groundwater. Based on this information the surface water pathway is an area of concern.

5.0 SOIL EXPOSURE AND AIR PATHWAYS

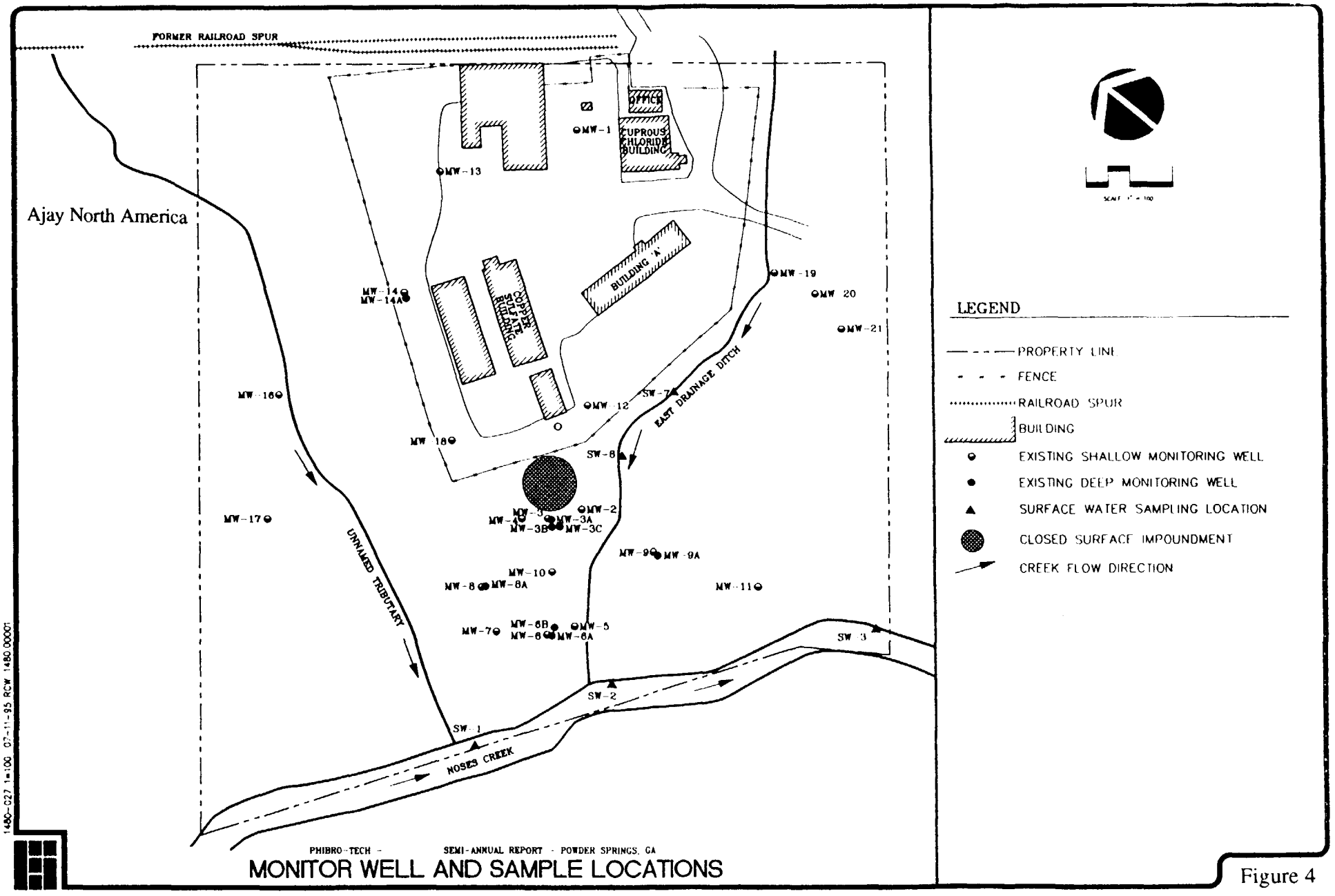
5.1 Physical Conditions

Ajay North America is located in an urban setting in a small industrial park. Noses Creek and a tributary to the east form the east, south, and west boundaries of the park. Flint Hill Road forms the north boundary. Ajay is surrounded by other industries on the north, west, and east. Within 1/2 mile from the facility is residential land use. Access to the site is limited by a fence around most of the property.

The area where the supply well is located and the area along the eastern property boundary is not paved. Two additional buildings have recently been constructed on site south of the main building. Operations in these two buildings have not begun. The location of the former unlined surface impoundment is paved and the location of the former lined impoundment is covered with gravel. No staining or spilled material was observed during an EPD site inspection on June 26, 1997. Selenium used in the selenite manufacturing process was observed in one gallon containers on a wood pallet (see Appendix B, Trip Report) (Reference 4).

5.2 Soil and Air Targets

The total population within a 4 mile radius of the site is 47,855 (Reference 7). The population within 1/4 mile of the site is 89 (Reference 7). There are no wetlands within 4 miles of the



PHIBRO-TECH - SEMI-ANNUAL REPORT - POWDER SPRINGS, GA

MONITOR WELL AND SAMPLE LOCATIONS

Figure 4

1480-027 1=100 07-11-95 RCW 1480.00001

site (Reference 8). Six threatened or endangered plants are found in Cobb County which are not expected to have been impacted by the release (Reference 11).

5.3 Soil Exposure and Air Pathway Conclusions

During the 1994 Site Investigation for the Georgia Metals facility soil samples were obtained and analyzed for metals. Selenium and lead were the only metals detected in these samples that warranted analysis using the toxicity characteristic leaching procedure (TCLP). TCLP results indicated 0.011 mg/l selenium in sample GM-94-5 (see Figure 4 for location of sample). All other TCLP results for selenium were non-detect. Total metal results revealed selenium in all samples obtained on the Georgia Metals site at a maximum concentration of 25 mg/l in sample GM-94-8. Soil exposure to workers on-site and at neighboring facilities and to animals is likely.

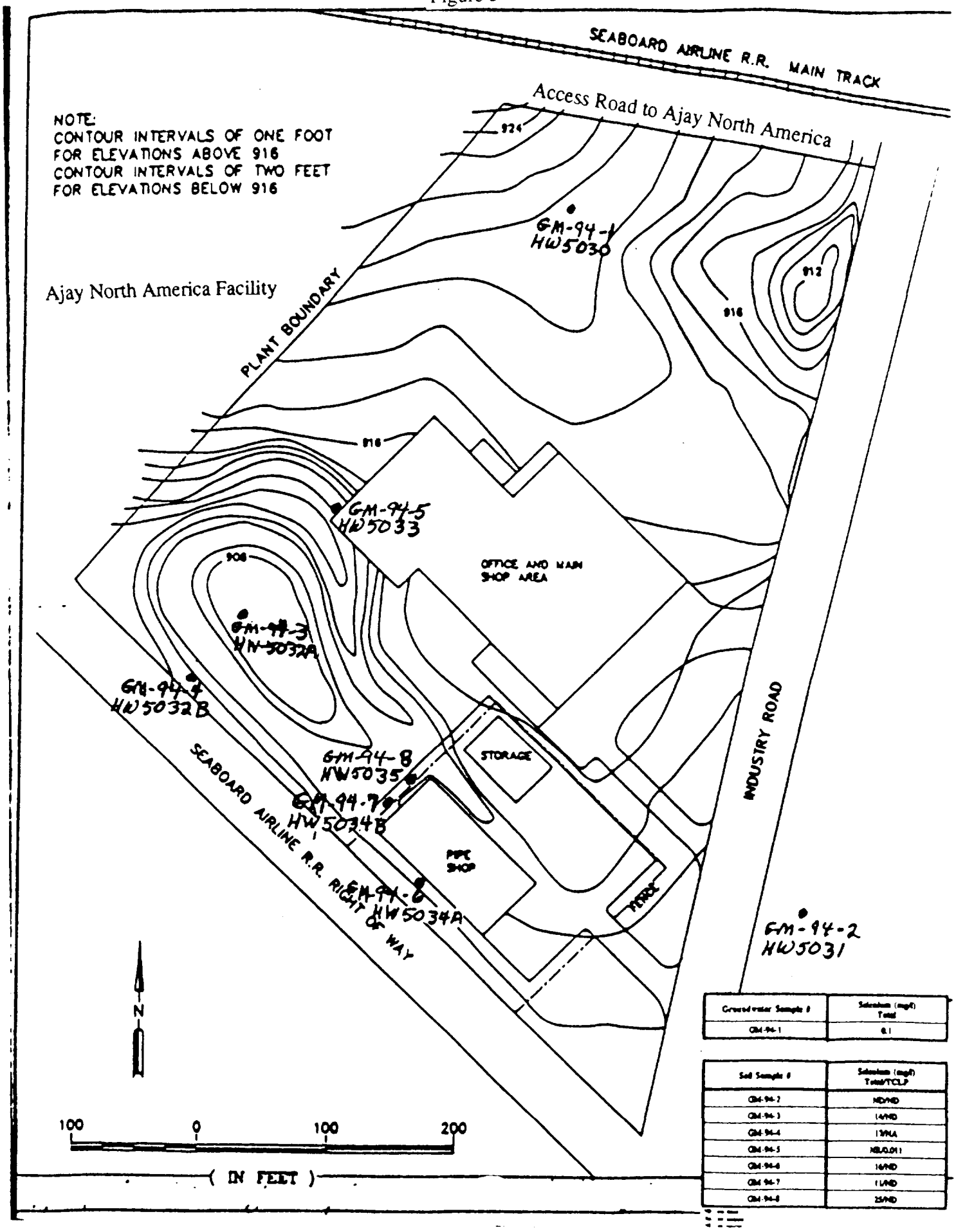
Releases to the air above permitted levels are not known to have occurred at the facility. Manufacturing processes at Ajay North America are permitted by EPD's Air Quality Branch (Reference 12). These permits require that a report be filed with EPD if emissions increase for 4 hours or more. No reports of increased emissions have been submitted to EPD for this facility (Reference 6). Releases to the air as a result of materials discharged to the former surface impoundments are likely to have occurred; however, the presence of odors was not mentioned in an EPD Trip Report prepared in 1987 when the surface impoundments were investigated (Reference 12). Odors were not detected during the June 26, 1997 inspection. Present exposure to an air release by workers or nearby residents is not suspected.

6.0 SUMMARY AND CONCLUSIONS

Ajay North America produces inorganic chemicals for both agricultural and industrial uses. Two surface impoundments, one lined and one unlined, were formerly located at the facility and were used to collect discharge from the iodine manufacturing process as well as floor washings from the selenium products manufacturing area. Soil from the unlined impoundment was excavated and disposed of in 1994 and the lined impoundment was also removed in 1994. Selenium has been detected in groundwater, surface water and in soil at locations near the facility. The likelihood of human exposure to selenium contaminated drinking water is minimal since selenium has not been consistently detected in numerous downgradient monitoring wells located at the adjacent Phibro-Tech facility and since the closest drinking water well is 1/4 to 1/2 mile from the site. The selenium that has been periodically detected in Noses Creek is at a location closest to the Ajay North America facility. Sampling locations further downstream along Noses Creek have been non-detect. Access to the site is limited so exposure to contaminated soil is likely for workers at the facility and at neighboring facilities. The site is located in a small industrial park. A release to the air was likely to have occurred during the time the surface impoundments were on site, even though no odors were detected during a site inspection in 1987. Present exposure to an air release is not suspected based on information on file with EPD's Air Quality Branch and given the lack of odors during the site reconnaissance.

Approximate Locations and Selenium Analytical Results of Samples Collected at Georgia Metals by Georgia EPD March 24, 1994

Figure 3



Groundwater Sample #	Selenium (mg/l) Total
GM-94-1	0.1

Soil Sample #	Selenium (mg/l) Total/TCLP
GM-94-2	ND/ND
GM-94-3	14/ND
GM-94-4	13/NA
GM-94-5	NR/0.011
GM-94-6	16/ND
GM-94-7	11/ND
GM-94-8	25/ND

REFERENCES

1. United States Geological Survey (U.S.G.S.) Topographic Quadrangles; Mableton, Marietta, Austell and Lost Mountain, Georgia.

2. Soil Survey of Cobb County, Georgia, Grover J. Thomas, Jr., Soil Conservation Service, Issued December 1973.

3. Facility File, Georgia Metals, Inc., Georgia Department of Natural Resources (DNR), Environmental Protection Division (EPD), Hazardous Waste Management Branch.

4. Site Reconnaissance, Ajay Chemicals, Inc., Powder Springs, Georgia, Nicole Long of Georgia Environmental Protection Division, June 26, 1997.

5. "Ground Water in the Greater Atlanta Region", C.W. Cressler, C.J. Thurmond and W.G. Hester, Georgia Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey, Information Circular 63, 1983.

6. Telephone Conversation between Stacey Hodge, Georgia EPD, Air Protection Branch and Nicole Long, Georgia EPD, Hazardous Waste Management Branch, June 30, 1997.

7. CENTRACTS data, Frost Associates, Essex, CT, Feb. 27, 1996.

8. National Wetlands Inventory Maps, U.S. Fish and Wildlife, Austell, Ben Hill, Campbellton and Mableton, Georgia.

9. Flood Insurance Rate Map, National Flood Insurance Program, Federal Emergency Management Agency, Map Number 13067C0070 F.

10. "Georgia's Protected Wildlife", Ron Odom, Jerry McCollum, Mary Neville and David Ettman of the Georgia Department of Natural Resources, 1977.

11. "Georgia's Protected Plants", Jerry McCollum and David Ettman of the Georgia Department of Natural Resources, 1991.

12. Facility File, Ajay Chemicals, Inc., Georgia DNR, EPD, Hazardous Waste Management Branch, Generator Compliance Program

13. Phibro-Tech, Inc., Semi-Annual Groundwater Monitoring Reports, 1990-1997, Facility File, Georgia DNR, EPD, Hazardous Waste Management Branch, Land Disposal Unit.

14. Drinking Water Files, Cobb County, Georgia DNR, EPD, Water Resources Management Branch

OVERSIZED

DOCUMENT

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

COBB COUNTY,
GEORGIA AND
INCORPORATED AREAS

PANEL 70 OF 95

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SMYRNA, CITY OF	130057	0070	F
UNINCORPORATED AREAS	130052	0070	F

MAP NUMBER:
13067C0070 F

EFFECTIVE DATE:
AUGUST 18, 1992

Federal Emergency Management Agency

ZONE X
912
ZONE X
RM206
908
911
910
ZONE X
ZONE X
H
H
EAST-WEST
RM205
G
906
G
FLINT
HILL
ROAD
F
RM204
ZONE AE
ANDERSON
ZONE X
898
904
F
ZONE X
ZONE X
E
ZONE X
ZONE X
E
ZONE A
MCDUFFIE
ZONE X
ZONE X
D
D
ZONE AE
891
POWDER

Georgia Department of Natural Resources

205 Butler St. S.E., Floyd Towers, East, Suite 1462, Atlanta, Georgia 30334
Lonice C. Barrett, Commissioner
Environmental Protection Division
Harold F. Reheis, Director
Hazardous Waste Management Branch
404/656-2833

Trip Report
June 26, 1997

Site Name and Location:	Ajay North America, LLC 1400 Industry Road Powder Springs, Cobb Co., GA
Trip By:	Nicole Long Environmental Engineer Hazardous Sites Response Program
Date of Trip:	June 26, 1997
Persons Contacted:	Alan Shipp and Charles Pittard Ajay North America
Reference:	Ajay Chemicals Facility File Generator Compliance Program

Comments:

Background

A preliminary assessment on the subject site is being prepared by EPD. Selenium has been detected in groundwater obtained from the on site supply well. The site inspection was conducted to gather information on the status and operations at the subject facility.

Ajay North America produces inorganic chemicals for agricultural and industrial uses. Materials used in the production of these chemicals include iodine, selenium, potassium and sodium. Previous inspections of the facility revealed two surface impoundments, one lined and one unlined, on site. The impoundments were used for discharge from the iodine manufacturing process and for the collection of floor washings from the selenite manufacturing area. In 1987 a recovery system was installed on site to recover iodine from the soil of the unlined impoundment. In February of 1994 the soil from the unlined impoundment was excavated and disposed of off site and the lined impoundment was also removed in 1994.

Findings

I was met on site by Mr. Alan Shipp of Ajay North America. I informed Mr. Shipp about the selenium detected in the supply well and about the preliminary assessment being prepared. Mr. Shipp expressed that he was surprised that selenium was detected given the process for production of the sodium selenite is a no discharge process. He proceeded to explain the process and indicated that water used in the two scrubbers is the only by product and it is recycled back into the system. Mr. Shipp did state that "non-contact cooling water" is discharged into nearby Noses Creek for which they have a permit .

There are three buildings on-site, one building houses the office and the existing operations, the other two buildings were recently constructed and operations in those buildings have not begun. A Freon substitute using iodine will be manufactured in one of the buildings and a material used by the pharmaceutical industry will be manufactured in the other. We proceeded to the sodium selenite process area. I observed one 55 gallon drum in this area marked hazardous waste. Mr. Shipp explained that spent filters, soiled gloves and miscellaneous debris contaminated with selenious acid, selenite or selenium is the only hazardous waste generated on site and that Ajay is listed as a small quantity generator. In this area I also observed selenium used in the process. The selenium is contained in 50 kilogram pales and is stored on wooden pallets. No spills or staining were observed on site. I requested to see the locations of the former surface impoundments. The area of the unlined impoundment is now paved and the area of the lined impoundment is covered with gravel and is used for storage of old parts. The majority of the site is paved or covered with gravel. A rain water collection system has recently been installed as required by Cobb County. According to Mr. Shipp water from the supply well is used in the manufacturing process.

We returned to the office and Mr. Shipp indicated that there have been no overflows and no discharge from the system and that selenium contaminated material is containerized for disposal. The discharge from the iodine process that previously went to the impoundments is now discharged to the sewer and floor washings from the sodium selenite drying area are collected in a small concrete floor sump, which I observed, and allowed to evaporate. Mr. Charles Pittard of Ajay North America informed me that soil from the unlined impoundment was excavated down to approximately 8 feet below grade. A soil sample of the material was obtained and analyzed (see attached results).

Conclusion

No indications of spills or releases were observed at the facility. The selenium detected in the nearby supply well is possibly from contamination from the former surface impoundments.

Attachments: Photographs (3)
Soil sample results provided by Ajay

UNSCANNABLE

MEDIA

(PHOTOGRAPHS)

ACL

ADVANCED CHEMISTRY LABS, INC.

DR. STEVE N. TSOUKALAS
DIRECTOR

P.O. BOX 88610 • ATLANTA, GEORGIA 30356
PHONE (404) 409-1444 • FAX (404) 409-1844

Client: Federal Environmental Services
1100 Northmeadow Pkwy
Suite 108
Roswell, GA 30076

Attention: Mr. Mark Babcock

Client Project No.: Ajay Chemical
ACL Project No.: 15295
Date Received: 01-27-94
Report Date: 02-04-94

TCLP VOLATILES/SEMI-VOLATILES

STATION:	Soil
ACL #:	79998

VOLATILES (mg/liter)	Results	Federal Regulatory Level
Benzene	< 0.05	0.5
Carbon tetrachloride	< 0.05	0.5
Chlorobenzene	< 10	100
Chloroform	< 0.60	6.0
1,2-Dichloroethane	< 0.05	0.5
1,1-Dichloroethylene	< 0.07	0.7
Methyl ethyl ketone	< 20	200
Tetrachloroethylene	< 0.07	0.7
Trichloroethylene	< 0.05	0.5
Vinyl chloride	< 0.10	0.2

SEMI-VOLATILES (mg/liter)		
m-Cresol	< 20	200
o-Cresol	< 20	200
p-Cresol	< 20	200
Total Cresol*	----	200
1,4-Dichlorobenzene	< 0.75	7.5
2,4-Dinitrotoluene	< 0.10	0.13
Hexachlorobenzene	< 0.10	0.13
Hexachlorobutadiene	< 0.10	0.5
Hexachloroethane	< 0.30	3.0
Nitrobenzene	< 0.20	2.0
Pentachlorophenol	< 10	100
Pyridine	< 1.0	5.0
2,4,5-Trichlorophenol	< 40	400
2,4,6-Trichlorophenol	< 0.20	2.0

* If m-,o- and p-Cresol cannot be differentiated, the total Cresol concentration is used.

ACL

ADVANCED CHEMISTRY LABS, INC.

DR. STEVE N. TSOUKALAS
DIRECTOR

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PHONE (404) 409-1444 • FAX (404) 409-1844

Client: Federal Environmental Services
1100 Northmeadow Pkwy
Suite 108
Roswell, GA 30076

Attention: Mr. Mark Babcock

Client Project No.: Ajay Chemical
ACL Project No.: 15295
Date Received: 01-27-94
Report Date: 02-04-94

STATION: Soil
ACL #: 79998

MATRIX: Soil

PARAMETERS:	RESULTS	DATE ANALYZED	METHOD
TCLP Metals (mg/liter)			
Arsenic	< 0.10	01-28-94	1311/6010
Barium	< 2.0	01-28-94	1311/6010
Cadmium	< 0.10	01-28-94	1311/6010
Chromium	< 0.20	01-28-94	1311/6010
Lead	< 0.50	01-28-94	1311/6010
Mercury	< 0.002	01-28-94	1311/7470
Selenium	< 0.10	01-28-94	1311/6010
Silver	< 0.50	01-28-94	1311/6010
Free Liquids (%)	-0-	01-27-94	9095
Reactivity Cyanides (mg/kg)	< 5.0	02-01-94	Section 7.3.3.2
Reactivity Sulfides (mg/kg)	< 5.0	02-01-94	Section 7.3.4.1

John Andros
Lab Manager

ACL

ADVANCED CHEMISTRY LABS, INC.

DR. STEVE N. TSOUKALAS
DIRECTOR

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PHONE (404) 409-1444 • FAX (404) 409-1844

Client: Federal Environmental Services
1100 Northmeadow Pkwy
Suite 108
Roswell, GA 30076

Attention: Mr. Mark Babcock

Client Project No.: Ajay Chemical
ACL Project No.: 15295
Date Received: 01-27-94
Report Date: 02-04-94

TCLP PESTICIDES/HERBICIDES

STATION:	Soil
ACL #:	79998

PESTICIDES (mg/liter):	Results	Federal Regulatory Level
Chlordane	< 0.005	0.03
Endrin	< 0.002	0.02
Heptachlor	< 0.002	0.008
Lindane	< 0.04	0.4
Methoxychlor	< 1.0	10.0
Toxaphene	< 0.10	0.5

HERBICIDES (mg/liter):		
2,4-D	< 1.0	10.0
2,4,5-TP (Silvex)	< 0.10	1.0

ACL ADVANCED CHEMISTRY LABS, INC.
3039 AMWILER RD., SUITE 100 • ATLANTA, GEORGIA 30360
PHONE (404) 409-1444 • FAX (404) 409-1844

Attn: Mark Babcock

ACL CLIENT: Federal Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT NO.

PROJECT NAME: Ajay Chemical

SAMPLERS (Signature)

I = Iced Only P = Preserved

SAMPLE ID	DATE	TIME	COMP	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	Full TCLP (I P)	Paint Filter (I P)	Reactivity Cn+Cs (I P)							Remarks
Soil						1	✓	✓	✓							1 week T/A

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Remarks:
Relinquished by:	Date / Time	Received by:	Received for Laboratory by: C Tracey	DATE / TIME 1-27-94 11:30 a.m.	

APPENDIX A

OMB Approval Number: 2050-0095
Approved for Use Through: 1/92

PA Scoresheets

Site Name: _____

CERCLIS ID No.: _____

Street Address: _____

City/State/Zip: _____

Investigator: _____

Agency/Organization: _____

Street Address: _____

City/State/Zip: _____

Date: _____

INSTRUCTIONS FOR SCORESHEETS

Introduction

This scoresheets package functions as a self-contained workbook providing all of the basic tools to apply collected data and calculate a PA score. Note that a computerized scoring tool, "PA-Score," is also available from EPA (Office of Solid Waste and Emergency Response, Directive 9345.1-11). The scoresheets provide space to:

- Record information collected during the PA
- Indicate references to support information
- Select and assign values ("scores") for factors
- Calculate pathway scores
- Calculate the site score

Do not enter values or scores in shaded areas of the scoresheets. You are encouraged to write notes on the scoresheets and especially on the Criteria Lists. On scoresheets with a reference column, indicate a number corresponding to attached sources of information or pages containing rationale for hypotheses; attach to the scoresheets a numbered list of these references. Evaluate all four pathways. Complete all Criteria Lists, scoresheets, and tables. Show calculations, as appropriate. If scoresheets are photocopy reproduced, copy and submit the numbered pages (right-side pages) only.

GENERAL INFORMATION

Site Description and Operational History: Briefly describe the site and its operating history. Provide the site name, owner/operator, type of facility and operations, size of property, active or inactive status, and years of waste generation. Summarize waste treatment, storage, or disposal activities that have or may have occurred at the site; note also if these activities are documented or alleged. Identify probable source types and prior spills. Summarize highlights of previous investigations.

Probable Substances of Concern: List hazardous substances that have or may have been stored, handled, or disposed at the site, based on your knowledge of site operations. Identify the sources to which the substances may be related. Summarize any existing analytical data concerning hazardous substances detected onsite, in releases from the site, or at targets.

GENERAL INFORMATION

Site Description and Operational History:

The Ajay North America site occupies an area of approximately 12 acres and is located west of Industry Road. The site is bordered on the north by wooded areas and a railroad bed (former Seaboard Coastal railroad track), on the south by Noses Creek, on the west by Blue Flame Gas Company and on the east by Georgia Metals, Inc. (References 3 and 4). Phibro-Tech (formerly C.P. Chemicals) is located south-southeast of Ajay Chemicals. The property slopes gently towards the south toward Noses Creek. The site has one main structure on it housing the offices and operations. Two additional buildings have recently been constructed; however, operations in those buildings have not begun (Reference 4). The site formerly had two surface impoundments on the property; an unlined retention pond and a lined impoundment. The surface impoundments were removed from the site in February 1994.

Ajay North America is a producer of inorganic chemicals for both agricultural and industrial uses including cuprous iodide for military batteries, potassium iodate, an oxidizer used in the textile industry, sodium selenite, a nutrition supplement for animal feed, and zinc selenite, a glass coloring. (Reference 12). In order to manufacture the selenite products it is necessary to produce selenious acid from selenite metal which is mixed with other compounds, including water, to make a salt. The dust from this process enters a scrubber which produces a liquor that is reused in the selenite manufacturing process. A caustic scrubber is also used in this process to reduce chlorine emissions. The process generates water that is reused in the system. According to Mr. Alan Shipp of Ajay North America, the only water that is discharged is the cooling water which does not come into contact with any of the material (Reference 4). The cooling water is discharged into Noses Creek. Floor washings from the drying room are collected in a small concrete floor sump and are allowed to evaporate.

In March of 1994 EPD collected soil samples and one groundwater sample from the Georgia Metals site as part of a Site Investigation regarding lead contamination (Reference 3). The groundwater sample was obtained from a supply well on the then Georgia Metals property. The supply well is 500 feet deep and Ajay North America uses water from this well in their production process (Reference 3). Results of the sample from the well revealed selenium at 0.1 mg/l. No lead was detected in the well and there is no known source for selenium at the Georgia Metals facility.

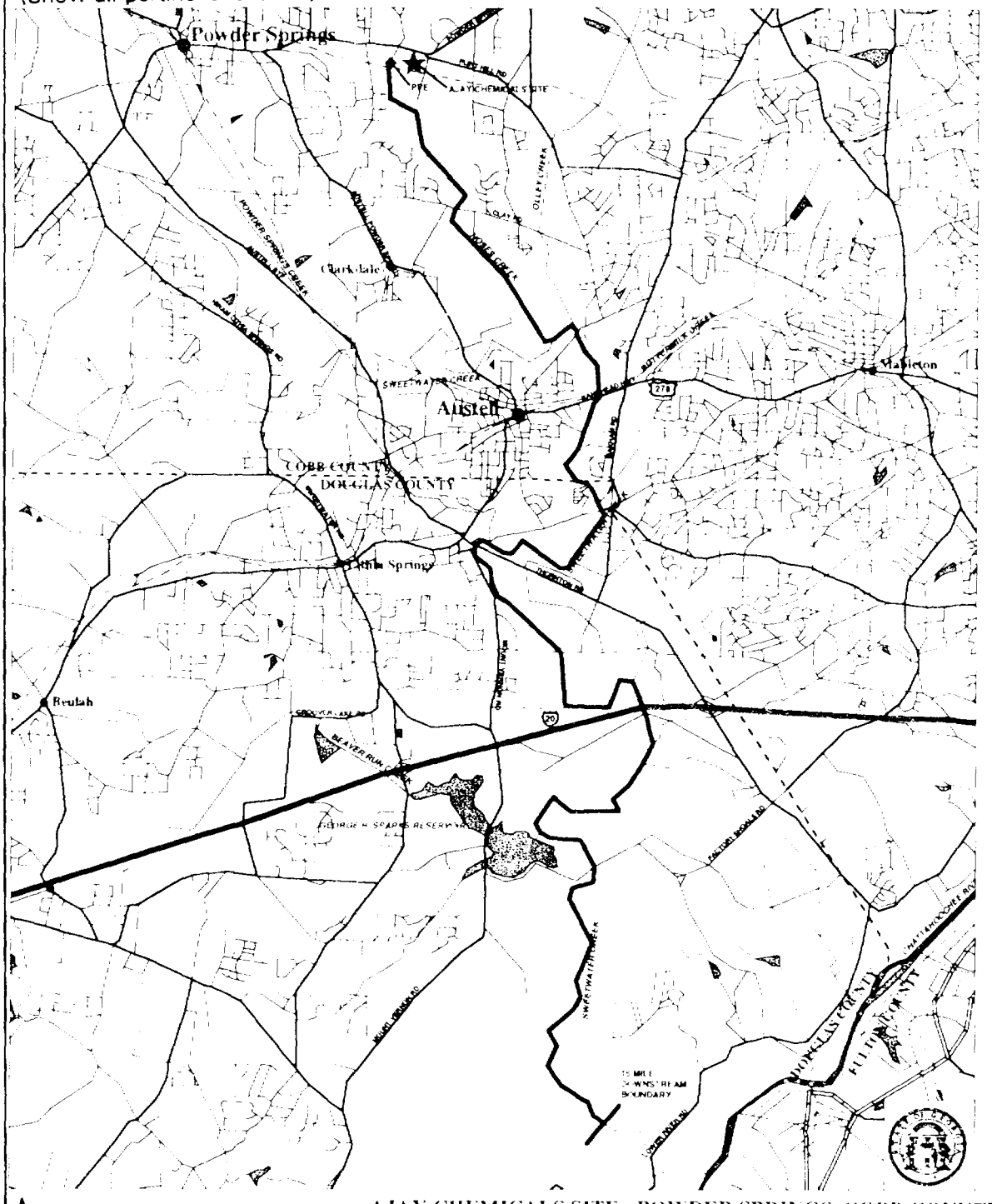
Probable Substances of Concern:

(Previous investigations, analytical data)

Selenium has been detected in soil, groundwater and nearby surface water.

Site Sketch: Prepare a sketch of the site (freehand is acceptable). Indicate all pertinent features of the site and nearby environs, including: waste sources, buildings, residences, access roads, parking areas, drainage patterns, water bodies, vegetation, wells, sensitive environments, etc.

Site Sketch:
(Show all pertinent features, indicate sources and closest targets, indicate north)



★ Site location
Wetlands
Surface Water Pathway
County Boundary
Hydrology
City Town
Unincorporated Town
Probable Point of Entry

AJAY CHEMICALS SITE - POWDER SPRINGS, COBB COUNTY
15 MILE SURFACE WATER DOWNSTREAM PATHWAY

Source: 1990 Census (TIGER); 1985 GA DOT Wetlands
6/20/97

SOURCE EVALUATION

- Number and name each source (e.g., 1. East Drum Storage Area, 2. Sludge Lagoon, 3. Battery Pile).
- Identify source type according to the list below.
- Describe the physical character of each source (e.g., dimensions, contents, waste types, containment, operating history).
- Show waste quantity (WQ) calculations for each source for appropriate tiers. Refer to instructions opposite page 5 and PA Tables 1a and 1b. Identify waste quantity tier and waste characteristics (WC) factor category score (for a site with a single source, according to PA Table 1a). Determine WC from PA Table 1b for the sum of source WQs for a multiple-source site.
- Attach additional sheets if necessary.
- Determine the site WC factor category score and record at the bottom of the page.

Source Type Descriptions

Landfill: an engineered (by excavation or construction) or natural hole in the ground into which wastes have been disposed by backfilling, or by contemporaneous soil deposition with waste disposal, covering wastes from view.

Surface Impoundment: a topographic depression, excavation, or diked area, primarily formed from earthen materials (lined or unlined) and designed to hold accumulated liquid wastes, wastes containing free liquids, or sludges that were not backfilled or otherwise covered during periods of deposition; depression may be dry if deposited liquid has evaporated, volatilized or leached, or wet with exposed liquid; structures that may be more specifically described as lagoon pond, aeration pit, settling pond, tailings pond, sludge pit, etc.; also a surface impoundment that has been covered with soil after the final deposition of waste materials (i.e., buried or backfilled).

Drums: portable containers designed to hold a standard 55-gallon volume of wastes.

Tanks and Non-Drum Containers: any stationary device, designed to contain accumulated wastes, constructed primarily of fabricated materials (such as wood, concrete, steel, or plastic) that provide structural support; any portable or mobile device in which waste is stored or otherwise handled.

Contaminated Soil: soil onto which available evidence indicates that a hazardous substance was spilled, spread, disposed, or deposited.

Pile: any non-containerized accumulation above the ground surface of solid, non-flowing wastes; includes open dumps. Some types of piles are: Chemical Waste Pile -- consists primarily of discarded chemical products, by-products, radioactive wastes, or used or unused feedstocks; Scrap Metal or Junk Pile -- consists primarily of scrap metal or discarded durable goods such as appliances, automobiles, auto parts, or batteries, composed of materials suspected to contain or have contained a hazardous substance; Tailings Pile -- consists primarily of any combination of overburden from a mining operation and tailings from a mineral mining, beneficiation, or processing operation; Trash Pile -- consists primarily of paper, garbage, or discarded non-durable goods which are suspected to contain or have contained a hazardous substance.

Land Treatment: landfarming or other land treatment method of waste management in which liquid wastes or sludges are spread over land and tilled, or liquids are injected at shallow depths into soils.

Other: a source that does not fit any of the descriptions above; examples include contaminated building, ground water plume with no identifiable source, storm drain, dry well, and injection well.

SOURCE EVALUATION

Source No.: 1	Source Name: [illegible]	Source Waste Quantity (WQ) Calculations: [illegible]
Source Description: 1- [illegible] 1- [illegible] [illegible] 74 [illegible] 7		

Source No.:	Source Name:	Source Waste Quantity (WQ) Calculations:
Source Description:		

Source No.:	Source Name:	Source Waste Quantity (WQ) Calculations:
Source Description:		

Site WC:

WASTE CHARACTERISTICS (WC) SCORES

WC, based on waste quantity, may be determined by one or all of four measures called "tiers": constituent quantity, wastestream quantity, source volume, and source area. PA Table 1a (page 5) is divided into these four tiers. The amount and detail of information available determine which tier(s) to use for each source. For each source, evaluate waste quantity by as many of the tiers as you have information to support, and select the result that gives you the highest WC score. If minimal, incomplete, or no information is available regarding waste quantity, assign a WC score of 18 (minimum).

PA Table 1a has 6 columns: column 1 indicates the quantity tier; column 2 lists source types for the four tiers; columns 3, 4, and 5 provide ranges of waste amount for sites with only one source, which correspond to WC scores at the top of the columns (18, 32, or 100); column 6 provides formulas to obtain source waste quantity (WQ) values at sites with multiple sources.

To determine WC for sites with only one source:

1. *Identify source type (see descriptions opposite page 4).*
2. *Examine all waste quantity data available.*
3. *Estimate the mass and/or dimensions of the source.*
4. *Determine which quantity tiers to use based on available source information.*
5. *Convert source measurements to appropriate units for each tier you can evaluate for the source.*
6. *Identify the range into which the total quantity falls for each tier evaluated (PA Table 1a).*
7. *Determine the highest WC score obtained for any tier (18, 32, or 100, at top of PA Table 1a columns 3, 4, and 5, respectively).*
8. *Use this WC score for all pathways.* *

To determine WC for sites with multiple sources:

1. *Identify each source type (see descriptions opposite page 4).*
2. *Examine all waste quantity data available for each source.*
3. *Estimate the mass and/or dimensions of each source.*
4. *Determine which quantity tiers to use for each source based on the available information.*
5. *Convert source measurements to appropriate units for each tier you can evaluate for each source.*
6. *For each source, use the formulas in column 6 of PA Table 1a to determine the WQ value for each tier that can be evaluated. The highest WQ value obtained for any tier is the WQ value for the source.*
7. *Sum the WQ values for all sources to get the site WQ total.*
8. *Use the site WQ total from step 7 to assign the WC score from PA Table 1b.*
9. *Use this WC score for all pathways.* *

---

* The WC score is considered in all four pathways. However, if a primary target is identified for the ground water, surface water, or air migration pathway, assign the determined WC or a score of 32, whichever is greater, as the WC score for that pathway.

PA TABLE 1: WASTE CHARACTERISTICS (WC) SCORES

PA Table 1a: WC Scores for Single Source Sites and Formulas for Multiple Source Sites

TIER	SOURCE TYPE	SINGLE SOURCE SITES (assigned WC scores)			MULTIPLE SOURCE SITES
		WC = 18	*WC = 32*	*WC = 100*	Formula for Assigning Source WQ Values
CONSTITUENT	N/A	≤100 lb	>100 to 10,000 lb	>10,000 lb	*lb ÷ 1*
WASTESTREAM	N/A	≤500,000 lb	>500,000 to 50 million lb	>50 million lb	*lb ÷ 5,000*
VOLUME	Landfill	≤6.75 million ft^3 ≤250,000 yd^3	>6.75 million to 675 million ft^3 >250,000 to 25 million yd^3	>675 million ft^3 >25 million yd^3	*ft^3 ÷ 67,500* *yd^3 ÷ 2,500*
	Surface impoundment	≤6,750 ft^3 ≤250 yd^3	>6,750 to 675,000 ft^3 >250 to 25,000 yd^3	>675,000 ft^3 >25,000 yd^3	*ft^3 ÷ 67.5* *yd^3 ÷ 2.5*
	Drums	≤1,000 drums	>1,000 to 100,000 drums	>100,000 drums	*drums ÷ 10*
	Tanks and non-drum containers	≤50,000 gallons	>50,000 to 5 million gallons	>5 million gallons	*gallons ÷ 500*
	Contaminated soil	≤6.75 million ft^3 ≤250,000 yd^3	>6.75 million to 675 million ft^3 >250,000 to 25 million yd^3	>675 million ft^3 >25 million yd^3	*ft^3 ÷ 67,500* *yd^3 ÷ 2,500*
	Pile	≤6,750 ft^3 ≤250 yd^3	>6,750 to 675,000 ft^3 >250 to 25,000 yd^3	>675,000 ft^3 >25,000 yd^3	*ft^3 ÷ 67.5* *yd^3 ÷ 2.5*
	Other	≤6,750 ft^3 ≤250 yd^3	>6,750 to 675,000 ft^3 >250 to 25,000 yd^3	>675,000 ft^3 >25,000 yd^3	*ft^3 ÷ 67.5* *yd^3 ÷ 2.5*
AREA	Landfill	≤340,000 ft^2 ≤7.8 acres	>340,000 to 34 million ft^2 >7.8 to 780 acres	>34 million ft^2 >780 acres	*ft^2 ÷ 3,400* *acres ÷ 0.078*
	Surface impoundment	≤1,300 ft^2 ≤0.029 acres	>1,300 to 130,000 ft^2 >0.029 to 2.9 acres	>130,000 ft^2 >2.9 acres	*ft^2 ÷ 13* *acres ÷ 0.00029*
	Contaminated soil	≤3.4 million ft^2 ≤78 acres	>3.4 million to 340 million ft^2 >78 to 7,800 acres	>340 million ft^2 >7,800 acres	*ft^2 ÷ 34,000* *acres ÷ 0.78*
	Pile*	≤1,300 ft^2 ≤0.029 acres	>1,300 to 130,000 ft^2 >0.029 to 2.9 acres	>130,000 ft^2 >2.9 acres	*ft^2 ÷ 13* *acres ÷ 0.00029*
	Land treatment	≤27,000 ft^2 ≤0.62 acres	>27,000 to 2.7 million ft^2 >0.62 to 62 acres	>2.7 million ft^2 >62 acres	*ft^2 ÷ 270* *acres ÷ 0.0062*

1 ton = 2,000 lb = 1 yd^3 = 4 drums = 200 gallons

* Use area of land surface under pile, not surface area of pile.

PA Table 1b: WC Scores for Multiple Source Sites

WQ Total	*WC Score*
>0 to 100	18
>100 to 10,000	32
>10,000	100

GROUND WATER PATHWAY

Ground Water Use Description: Provide information on ground water use in the vicinity. Present the general stratigraphy, aquifers used, and distribution of private and municipal wells.

Calculations for Drinking Water Populations Served by Ground Water: Provide populations from private wells and municipal supply systems in each distance category. Show apportionment calculations for blended supply systems.

GROUNDWATER PATHWAY
GROUND WATER USE DESCRIPTION

Describe Ground Water Use Within 4-miles of the Site:
(Describe stratigraphy, information on aquifers, municipal and/or private wells)

Cobb County is in the Central Uplands district of the Piedmont physiographic province (Reference 5). The underlying geology of the area is made up of metamorphic and igneous rocks.

Ground water in the area occupies joints, fractures and other secondary openings in the bedrock and pore spaces of the overlying soil. Precipation recharges the ground water found in these underground openings. Generally ground water tends to flow the way of surface topography in the area. This area slopes gently to the south (References 1and 4).

The majority of the population within a 4 mile radius utilize public water supplies (Reference 6). Powder Springs has a well 1.7 miles west of the site that supplies water to connections in the old central part of the City. Powder Springs buys drinking water from the Cobb/Marietta Water Authority that supplies water to the majority of the population within a four mile radius of the site. The Cobb/Marietta Water Authority gets its water from two surface water intakes. One intake is located on the Chattahoochee River and the other is located on Allatoona Lake.

Calculations for Drinking Water Populations Served by Ground Water:

Within 1/4 mile of site - 0 (Reference 7)

Within 1/2 mile of site - 4 "

Within 1 mile of site - 36 "

Within 2 miles of site - 229 "

Within 3 miles of site - 299 "

Within 4 miles of site - 283 "

GROUND WATER PATHWAY CRITERIA LIST

This "Criteria List" helps guide the process of developing hypotheses concerning the occurrence of a suspected release and the exposure of specific targets to a hazardous substance. The check-boxes record your professional judgment in evaluating these factors. Answers to all of the listed questions may not be available during the PA. Also, the list is not all-inclusive; if other criteria help shape your hypotheses, list them at the bottom of the page or attach an additional page.

The "Suspected Release" section identifies several site, source, and pathway conditions that could provide insight as to whether a release from the site is likely to have occurred. If a release is suspected, use the "Primary Targets" section to evaluate conditions that may help identify targets likely to be exposed to a hazardous substance. Record responses for the well that you feel has the highest probability of being exposed to a hazardous substance. You may use this section of the chart more than once, depending on the number of targets you feel may be considered "primary."

Check the boxes to indicate a "yes," "no," or "unknown" answer to each question. If you check the "Suspected Release" box as "yes," make sure you assign a Likelihood of Release value of 550 for the pathway.

GROUND WATER PATHWAY CRITERIA LIST

SUSPECTED RELEASE

Yes	No	Unk	
☐	☑	☐	Are sources poorly contained?
☐	☐	☐	Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)?
☐	☐	☑	Is waste quantity particularly large?
☑	☐	☐	Is precipitation heavy?
☐	☑	☐	Is the infiltration rate high?
☐	☑		Is the site located in an area of karst terrain?
☐	☑	☐	Is the subsurface highly permeable or conductive?
☐	☑	☐	Is drinking water drawn from a shallow aquifer?
☐	☐	☑	Are suspected contaminants highly mobile in ground water?
☑	☐	☐	Does analytical or circumstantial evidence suggest ground water contamination?
☐	☐		Other criteria?_____
☑	☐		**SUSPECTED RELEASE?**

PRIMARY TARGETS

Yes	No	Unk	
☐	☑	☐	Is any drinking water well nearby?
☐	☐	☑	Has any nearby drinking water well been closed?
☐	☐	☑	Has any nearby drinking water user reported foul-tasting or foul-smelling water?
☐	☐	☑	Does any nearby well have a large drawdown or high production rate?
☐	☑	☐	Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance?
☐	☐	☑	Does analytical or circumstantial evidence suggest contamination at a drinking water well?
☐	☑	☐	Does any drinking water well warrant sampling?
☐	☑		Other criteria?_____
☐	☑		**PRIMARY TARGET(S) IDENTIFIED?**

Summarize the rationale for Suspected Release (attach an additional page if necessary):

Summarize the rationale for Primary Targets (attach an additional page if necessary):

GROUND WATER PATHWAY SCORESHEET

Pathway Characteristics

Answer the questions at the top of the page. Refer to the Ground Water Pathway Criteria List (page 7) to hypothesize whether you suspect that a hazardous substance associated with the site has been released to ground water. Record depth to aquifer (in feet): the difference between the deepest occurrence of a hazardous substance and the depth of the top of the shallowest aquifer at (or as near as possible) to the site. Note whether the site is in karst terrain (characterized by abrupt ridges, sink holes, caverns, springs, disappearing streams). Record the distance (in feet) from any source to the nearest well used for drinking water.

Likelihood of Release (LR)

1. **Suspected Release:** Hypothesize based on professional judgment guided by the Ground Water Pathway Criteria List (page 7). If you suspect a release to ground water, use only Column A for this pathway and do not evaluate factor 2.

2. **No Suspected Release:** If you do not suspect a release, determine score based on depth to aquifer or whether the site is in an area of karst terrain. If you do not suspect a release to ground water, use only Column B to score this pathway.

Targets (T)

This factor category evaluates the threat to populations obtaining drinking water from ground water. To apportion populations served by blended drinking water supply systems, determine the percentage of population served by each well based on its production.

3. **Primary Target Population:** Evaluate populations served by all drinking water wells that you suspect have been exposed to a hazardous substance released from the site. Use professional judgment guided by the Ground Water Pathway Criteria List (page 7) to make this determination. In the space provided, enter the population served by any wells you suspect have been exposed to a hazardous substance from the site. If only the number of residences is known, use the average county residents per household (rounded up to the next integer) to determine population served. Multiply the population by 10 to determine the Primary Target Population score. Note that if you do not suspect a release, there can be no primary target population.

4. **Secondary Target Population:** Evaluate populations served by all drinking water wells within 4 miles that you do not suspect have been exposed to a hazardous substance. Use PA Table 2a or 2b (for wells drawing from non-karst and karst aquifers, respectfully) (page 9). If only the number of residences is known, use the average county residents per household (rounded to the nearest integer) to determine population served. Circle the assigned value for the population in each distance category and enter it in the column on the far-right side of the table. Sum the far-right column and enter the total as the Secondary Target Population factor score.

5. **Nearest Well** represents the threat posed to the drinking water well that is most likely to be exposed to a hazardous substance. If you have identified a primary target population, enter 50. Otherwise, assign the score from PA Table 2a or 2b for the closest distance category with a drinking water well population.

6. **Wellhead Protection Area (WHPA):** WHPAs are special areas designated by States for protection under Section 1428 of the Safe Drinking Water Act. Local/State and EPA Regional water officials can provide information regarding the location of WHPAs.

7. **Resources:** A score of 5 can generally be assigned as a default measure. Assign zero only if ground water within 4 miles has no resource use.

Sum the target scores in Column A (Suspected Release) or Column B (No Suspected Release).

Waste Characteristics (WC)

8. **Waste Characteristics:** Score is assigned from page 4. However, if you have identified any primary target for ground water, assign either the score calculated on page 4 or a score of 32, whichever is greater.

Ground Water Pathway Score: Multiply the scores for LR, T, and WC. Divide the product by 82,500. Round the result to the nearest integer. If the result is greater than 100, assign 100.

GROUND WATER PATHWAY SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Ground Water Pathway Criteria List, page 7)?	Yes ___ No ___
Is the site located in karst terrain?	Yes ___ No ___
Depth to aquifer:	___ ft
Distance to the nearest drinking water well:	___ ft

LIKELIHOOD OF RELEASE	A *Suspected Release*	B *No Suspected Release*	*References*
1. SUSPECTED RELEASE: If you suspect a release to ground water (see page 7), assign a score of 550. Use only column A for this pathway.	[illegible]		[illegible]
2. NO SUSPECTED RELEASE: If you do not suspect a release to ground water, and the site is in karst terrain or the depth to aquifer is 70 feet or less, assign a score of 500; otherwise, assign a score of 340. Use only column B for this pathway.		[illegible]	
LR =	[illegible]		

TARGETS	A	B	References
3. PRIMARY TARGET POPULATION: Determine the number of people served by drinking water wells that you suspect have been exposed to a hazardous substance from the site (see Ground Water Pathway Criteria List, page 7). ___ people x 10 =	[illegible]		
4. SECONDARY TARGET POPULATION: Determine the number of people served by drinking water wells that you do NOT suspect have been exposed to a hazardous substance from the site, and assign the total population score from PA Table 2. Are any wells part of a blended system? Yes ___ No ___ If yes, attach a page to show apportionment calculations.	9		
5. NEAREST WELL: If you have identified a primary target population for ground water, assign a score of 50; otherwise, assign the Nearest Well score from PA Table 2. If no drinking water wells exist within 4 miles, assign a score of zero.	[illegible]	[illegible]	
6. WELLHEAD PROTECTION AREA (WHPA): If any source lies within or above a WHPA, or if you have identified any primary target well within a WHPA, assign a score of 20; assign 5 if neither condition holds but a WHPA is present within 4 miles; otherwise assign zero.	20		
7. RESOURCES	5		
T =	52		

WASTE CHARACTERISTICS	A	B
8. A. If you have identified any primary target for ground water, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	[illegible]	
B. If you have NOT identified any primary target for ground water, assign the waste characteristics score calculated on page 4.	[illegible]	[illegible]
WC =	[illegible]	

GROUND WATER PATHWAY SCORE: $\frac{LR \times T \times WC}{82,500}$ [subject to a maximum of 100] [illegible]

PA TABLE 2: VALUES FOR SECONDARY GROUND WATER TARGET POPULATIONS

PA Table 2a: Non-Karst Aquifers

Distance from Site	Population	Nearest Well (choose highest)	Population Served by Wells Within Distance Category: 1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	Greater than 100,000	Population Value
0 to ¼ mile	84	20	1	2	5	16	52	163	521	1,633	5,214	16,325	Ø
> ¼ to ½ mile	242	18	1	1	3	10	32	101	323	1,012	3,233	10,121	1
> ½ to 1 mile	2574	9	1	1	2	5	17	52	167	522	1,668	5,224	2
> 1 to 2 miles	9792	5	1	1	1	3	9	29	94	294	939	2,938	3
> 2 to 3 miles	15901	3	1	1	1	2	7	21	68	212	678	2,122	2
> 3 to 4 miles	19207	2	1	1	1	1	4	13	42	131	417	1,306	1
Nearest Well =		18										Score =	9

PA Table 2b: Karst Aquifers

Distance from Site	Population	Nearest Well (use 20 for karst)	Population Served by Wells Within Distance Category: 1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	Greater than 100,000	Population Value
0 to ¼ mile		20	1	2	5	16	52	163	521	1,633	5,214	16,325	
> ¼ to ½ mile		20	1	1	3	10	32	101	323	1,012	3,233	10,121	
> ½ to 1 mile		20	1	1	3	8	26	82	261	816	2,607	8,162	
> 1 to 2 miles		20	1	1	3	8	26	82	261	816	2,607	8,162	
> 2 to 3 miles		20	1	1	3	8	26	82	261	816	2,607	8,162	
> 3 to 4 miles		20	1	1	3	8	26	82	261	816	2,607	8,162	
Nearest Well =												Score =	

SURFACE WATER PATHWAY

Migration Route Sketch: Sketch the surface water migration pathway (freehand is acceptable) illustrating the drainage route and identifying water bodies, probable point of entry, flows, and targets.

SURFACE WATER PATHWAY
MIGRATION ROUTE SKETCH

Suface Water Migration Route Sketch:
(include runoff route, probable point of entry, 15-mile target distance limit, intakes, fisheries, and sensitive environments)

SURFACE WATER PATHWAY CRITERIA LIST

This "Criteria List" helps guide the process of developing hypotheses concerning the occurrence of a suspected release and the exposure of specific targets to a hazardous substance. The check-boxes record your professional judgment in evaluating these factors. Answers to all of the listed questions may not be available during the PA. Also, the list is not all-inclusive; if other criteria help shape your hypotheses, list them at the bottom of the page or attach an additional page.

The "Suspected Release" section identifies several site, source, and pathway conditions that could provide insight as to whether a release from the site is likely to have occurred. If a release is suspected, use the "Primary Targets" section to guide you through evaluation of some conditions that may help identify targets likely to be exposed to a hazardous substance. Record responses for the target that you feel has the highest probability of being exposed to a hazardous substance. You may use this section of the chart more than once, depending on the number of targets you feel may be considered "primary."

Check the boxes to indicate a "yes," "no," or "unknown" answer to each question. If you check the "Suspected Release" box as "yes," make sure you assign a Likelihood of Release value of 550 for the pathway.

If the distance to surface water is greater than 2 miles, do not evaluate the surface water migration pathway. Document the source of information in the text boxes below the surface water criteria list.

SURFACE WATER PATHWAY CRITERIA LIST

SUSPECTED RELEASE

Yes	No	Unk	
☑	☐	☐	Is surface water nearby?
☐	☑	☐	Is waste quantity particularly large?
☐	☑	☐	Is the drainage area large?
☑	☐	☐	Is rainfall heavy?
☐	☑	☐	Is the infiltration rate low?
☐	☑	☐	Are sources poorly contained or prone to runoff or flooding?
☑	☐	☐	Is a runoff route well defined (e.g., ditch or channel leading to surface water)?
☐	☑	☐	Is vegetation stressed along the probable run-off route?
☐	☑	☐	Are sediments or water unnaturally discolored?
☐	☑	☐	Is wildlife unnaturally absent?
☐	☑	☐	Has deposition of waste into surface water been observed?
☑	☐	☐	Is ground water discharge to surface water likely?
☑	☐	☐	Does analytical or circumstantial evidence suggest surface water contamination?
☐	☐		Other criteria?_____
☑	☐		**SUSPECTED RELEASE?**

PRIMARY TARGETS

Yes	No	Unk	
☑	☐	☐	Is any target nearby? If yes: ☐ Drinking water intake ☑ Fishery ☐ Sensitive environment
☐	☐	☑	Has any intake, fishery, or recreational area been closed?
☑	☐	☐	Does analytical or circumstantial evidence suggest surface water contamination at or downstream of a target?
☑	☐	☐	Does any target warrant sampling? If yes: ☐ Drinking water intake ☑ Fishery ☐ Sensitive environment
☐	☑		Other criteria?_____
☐	☑		**PRIMARY INTAKE(S) IDENTIFIED?**
☑	☐		**PRIMARY FISHERY(IES) IDENTIFIED?**
☐	☑		**PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED?**

Summarize the rationale for Suspected Release (attach an additional page if necessary):

Surface water samples obtained from Moses Creek by Phibro Tech, Inc. have detected selenium at a point near drainage pathway from Ajay North America facility.

Summarize the rationale for Primary Targets (attach an additional page if necessary):

Groundwater discharge to surface water is likely in the area and selenium has been detected in Moses Creek

SURFACE WATER PATHWAY LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT SCORESHEET

Pathway Characteristics

The surface water pathway includes three threats: Drinking Water Threat, Human Food Chain Threat, and Environmental Threat. Answer the questions at the top of the page. Refer to the Surface Water Pathway Criteria List (page 11) to hypothesize whether you suspect that a hazardous substance associated with the site has been released to surface water. Record the distance to surface water (the shortest overland drainage distance from a source to a surface water body). Record the flood frequency at the site (e.g., 100-yr, 200-yr). If the site is located in more than one floodplain, use the most frequent flooding event. Identify surface water use(s) along the surface water migration path and their distance(s) from the site.

Likelihood of Release (LR)

1. **Suspected Release:** Hypothesize based on professional judgment guided by the Surface Water Pathway Criteria List (page 11). If you suspect a release to surface water, use only Column A for this pathway and do not evaluate factor 2.

2. **No Suspected Release:** If you do not suspect a release, determine score based on the shortest overland drainage distance from a source to a surface water body. If distance to surface water is 2,500 feet or less, assign a score of 500. If distance to surface water is greater than 2,500 feet, determine score based on flood frequency. If you do not suspect a release to surface water, use only Column B to score this pathway.

Drinking Water Threat Targets (T)

3. List all drinking water intakes on downstream surface water bodies along the surface water migration path. Record the intake name, the type of water body on which the intake is located, the flow of the water body, and the number of people served by the intake (apportion the population if part of a blended system).

4. **Primary Target Population:** Evaluate populations served by all drinking water intakes that you suspect have been exposed to a hazardous substance released from the site. Use professional judgment guided by the Surface Water Pathway Criteria List (page 11) to make this determination. In the space provided, enter the population served by all intakes you suspect have been exposed to a hazardous substance from the site. If only the number of residences is known, use the average county residents per household (rounded up to the next integer) to determine population served. Multiply by 10 to determine the Primary Target Population score. Remember, if you do not suspect a release, there can be no primary target population.

5. ***Secondary Target Population:*** Evaluate populations served by all drinking water intakes within the target distance limit that you do not suspect have been exposed to a hazardous substance. Use PA Table 3 (page 13) and enter the population served by intakes for each flow category. If only the number of residences is known, use the average county residents per household (rounded to the nearest integer) to determine population served. Circle the assigned value for the population in each flow category and enter it in the column on the far-right side of the table. Sum the far-right column and enter the total as the Secondary Target Population factor score.

Gauging station data for many surface water bodies are available from USGS or other sources. In the absence of gauging station data, estimate flow using the list of surface water body types and associated flow categories in PA Table 4 (page 13). The flow for lakes is determined by the sum of flows of streams entering or leaving the lake. Note that the flow category "mixing zone of quiet flowing rivers" is limited to 3 miles from the probable point of entry.

6. **Nearest Intake** represents the threat posed to the drinking water intake that is most likely to be exposed to a hazardous substance. If you have identified a primary target population, enter 50. Otherwise, assign the score from PA Table 3 (page 13) for the lowest-flowing water body on which there is an intake.

7. **Resources:** A score of 5 can generally be assigned as a default measure. Assign zero only if surface water within the target distance limit has no resource use.

Sum the target scores in Column A (Suspected Release) or Column B (No Suspected Release).

SURFACE WATER PATHWAY
LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Surface Water Pathway Criteria List, page 11)?	Yes ✓ No ___
Distance to surface water:	___ ft
Flood frequency:	>500 yrs
What is the downstream distance to the nearest drinking water intake? ___ miles	
Nearest fishery? ___ miles Nearest sensitive environment? ___ miles	

LIKELIHOOD OF RELEASE	A Suspected Release	B No Suspected Release	References
1. SUSPECTED RELEASE: If you suspect a release to surface water (see page 11), assign a score of 550. Use only column A for this pathway.	550		13
2. NO SUSPECTED RELEASE: If you do not suspect a release to surface water, use the table below to assign a score based on distance to surface water and flood frequency. Use only column B for this pathway.			13
LR =	550		

Distance to surface water ≤ 2,500 feet	500
Distance to surface water > 2,500 feet, and	
Site in annual or 10-year floodplain	500
Site in 100-year floodplain	400
Site in 500-year floodplain	300
Site outside 500-year floodplain	100

DRINKING WATER THREAT TARGETS	A	B	References
3. Record the water body type, flow (if applicable), and number of people served by each drinking water intake within the target distance limit. If there is no drinking water intake within the target distance limit, factors 4, 5, and 6 each receive zero scores.			
4. PRIMARY TARGET POPULATION: If you suspect any drinking water intake listed above has been exposed to a hazardous substance from the site (see Surface Water Pathway Criteria List, page 11), list the intake name(s) and calculate the factor score based on the total population served. ___, ___, ___ people x 10 =	0		
5. SECONDARY TARGET POPULATION: Determine the number of people served by drinking water intakes that you do NOT suspect have been exposed to a hazardous substance from the site, and assign the total population score from PA Table 3. Are any intakes part of a blended system? Yes ___ No ___ If yes, attach a page to show apportionment calculations.	0		
6. NEAREST INTAKE: If you have identified a primary target population for the drinking water threat (factor 4), assign a score of 50; otherwise, assign the Nearest Intake score from PA Table 3. If no drinking water intake exists within the target distance limit, assign a score of zero.	0		
7. RESOURCES	5		
T =	5		

Intake Name	*Water Body Type*	*Flow*	*People Served*
		cfs	
		cfs	
		cfs	

PA TABLE 3: VALUES FOR SECONDARY SURFACE WATER TARGET POPULATIONS

Surface Water Body Flow (see PA Table 4)	*Population*	*Nearest Intake (choose highest)*	*Population Served by Intakes Within Flow Category*											*Population Value*
			1 to 30	*31 to 100*	*101 to 300*	*301 to 1,000*	*1,001 to 3,000*	*3,001 to 10,000*	*10,001 to 30,000*	*30,001 to 100,000*	*100,001 to 300,000*	*300,001 to 1,000,000*	*Greater than 1,000,000*	
<10 cfs	_____	20	2	5	16	52	163	521	1,633	5,214	16,325	52,136	163,246	_____
10 to 100 cfs	_____	2	1	1	2	5	16	52	163	521	1,633	5,214	16,325	_____
>100 to 1,000 cfs	_____	1	0	0	1	1	2	5	16	52	163	521	1,633	_____
>1,000 to 10,000 cfs	_____	0	0	0	0	0	1	1	2	5	16	52	163	_____
>10,000 cfs or Great Lakes	_____	0	0	0	0	0	0	0	1	1	2	5	16	_____
3-mile Mixing Zone	_____	10	1	3	8	26	82	261	816	2,607	8,162	26,068	81,663	_____

Nearest Intake = [ ] **Score =** [ ]

PA TABLE 4: SURFACE WATER TYPE / FLOW CHARACTERISTICS WITH DILUTION WEIGHTS FOR SECONDARY SURFACE WATER SENSITIVE ENVIRONMENTS

Type of Surface Water Body			*Dilution Weight*
Water Body Type	*OR*	*Flow*	
minimal stream		< 10 cfs	*1*
small to moderate stream		10 to 100 cfs	*0.1*
moderate to large stream		> 100 to 1,000 cfs	*N/A*
large stream to river		> 1,000 to 10,000 cfs	*N/A*
large river		> 10,000 cfs	*N/A*
3-mile mixing zone of quiet flowing streams or rivers		10 cfs or greater	*N/A*
coastal tidal water (harbors, sounds, bays, etc.), ocean, or Great Lakes		N/A	*N/A*

SURFACE WATER PATHWAY HUMAN FOOD CHAIN THREAT SCORESHEET

Likelihood of Release (LR)

LR is the same for all surface water pathway threats. Enter LR score from page 12.

Human Food Chain Threat Targets (T)

8. The only human food chain targets are fisheries. A fishery is an area of a surface water body from which food chain organisms are taken or could be taken for human consumption on a subsistence, sporting, or commercial basis. Food chain organisms include fish, shellfish, crustaceans, amphibians, and amphibious reptiles. Fisheries are delineated by changes in surface water body type (i.e., streams and rivers, lakes, coastal tidal waters, and oceans/Great Lakes) and whenever the flow characteristics of a stream or river change.

In the space provided, identify all fisheries within the target distance limit. Indicate the surface water body type and flow for each fishery. Gauging station flow data are available for many surface water bodies from USGS or other sources. In the absence of gauging station data, estimate flow using the list of surface water body types and associated flow categories in PA Table 4 (page 13). The flow for lakes is determined by the sum of flows of streams entering or leaving the lake. Note that, if there are no fisheries within the target distance limit, the Human Food Chain Threat Targets score is zero.

9. Primary fisheries are any fisheries within the target distance limit that you suspect have been exposed to a hazardous substance released from the site. Use professional judgment guided by the Surface Water Pathway Criteria List (page 11) to make this determination. If you identify any primary fisheries, list them in the space provided, enter 300 as the Primary Fisheries factor score, and do not evaluate Secondary Fisheries. Note that if you do not suspect a release, there can be no primary fisheries.

10. Secondary fisheries are fisheries that you do not suspect have been exposed to a hazardous substance. Evaluate this factor only if fisheries are present within the target distance limit, but none is considered a primary fishery.

A. If you suspect a release to surface water and have identified a secondary fishery but no primary fishery, assign a score of 210.

B. If you do not suspect a release, evaluate this factor based on flow. In the absence of gauging station flow data, estimate flow using the list of surface water body types and associated flow categories in PA Table 4 (page 13). Assign a Secondary Fisheries score from the table on the scoresheet using the lowest flow at any fishery within the target distance limit. (Dilution weight multiplier does not apply to PA evaluation of this factor.)

Sum the target scores in Column A (Suspected Release) or Column B (No Suspected Release).

SURFACE WATER PATHWAY (continued)
HUMAN FOOD CHAIN THREAT SCORESHEET

LIKELIHOOD OF RELEASE	A Suspected Release	B No Suspected Release	References
Enter Surface Water Likelihood of Release score from page 12. LR =	550		

HUMAN FOOD CHAIN THREAT TARGETS

8. Record the water body type and flow (if applicable) for each fishery within the target distance limit. If there is no fishery within the target distance limit, assign a Targets score of 0 at the bottom of the page.

Fishery Name	Water Body Type	Flow
Noses Creek	Small Stream	10 to 100 cfs
Sweetwater Creek	Small Stream	10 to 100 cfs
		cfs
		cfs
		cfs

9. PRIMARY FISHERIES: If you suspect any fishery listed above has been exposed to a hazardous substance from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate Factor 10. List the primary fisheries:
Noses Creek, _____,
_____, _____.

300 — 13

10. SECONDARY FISHERIES

A. If you suspect a release to surface water and have identified a secondary fishery but no primary fishery, assign a score of 210.

B. If you do not suspect a release, assign a Secondary Fisheries score from the table below using the lowest flow at any fishery within the target distance limit.

Lowest Flow	Secondary Fisheries Score
< 10 cfs	210
10 to 100 cfs	30
> 100 cfs, coastal tidal waters, oceans, or Great Lakes	12

13

T = 300

SURFACE WATER PATHWAY ENVIRONMENTAL THREAT SCORESHEET

Likelihood of Release (LR)

LR is the same for all surface water pathway threats. Enter LR score from page 12.

Environmental Threat Targets (T)

11. PA Table 5 (page 16) lists sensitive environments for the Surface Water Pathway Environmental Threat. In the space provided, identify all sensitive environments located within the target distance limit. Indicate the surface water body type and flow at each sensitive environment. Gauging station flow data for many surface water bodies are available from USGS or other sources. In the absence of gauging station data, estimate flow using the list of surface water body types and associated flow categories in PA Table 4 (page 13). The flow for lakes is determined by the sum of flows of streams entering or leaving the lake. Note that if there are no sensitive environments within the target distance limit, the Environmental Threat Targets score is zero.

12. Primary sensitive environments are surface water sensitive environments within the target distance limit that you suspect have been exposed to a hazardous substance released from the site. Use professional judgment guided by the Surface Water Pathway Criteria List (page 11) to make this determination. If you identify any primary sensitive environments, list them in the space provided, enter 300 as the Primary Sensitive Environments factor score, and do not evaluate Secondary Sensitive Environments. Note that if you do not suspect a release, there can be no primary sensitive environments.

13. Secondary sensitive environments are surface water sensitive environments that you do not suspect have been exposed to a hazardous substance. Evaluate this factor only if surface water sensitive environments are present within the target distance limit, but none is considered a primary sensitive environment. Evaluate secondary sensitive environments based on flow.

- In the table provided, list all secondary sensitive environments on surface water bodies with flow of 100 cfs or less.

  1) Use PA Table 4 (page 13) to determine the appropriate dilution weight for each.

  2) Use PA Tables 5 and 6 (page 16) to determine the appropriate value for each sensitive environment type and for wetlands frontage.

  3) For a sensitive environment that falls into more than one of the categories in PA Table 5, sum the values for each type to determine the environment value (e.g., a wetland with 1.5 miles frontage (value of 50) that is also a critical habitat for a Federally designated endangered species (value of 100) would receive a total value of 150).

  4) For each sensitive environment, multiply the dilution weight by the environment type (or length of wetlands) value and record the product in the far-right column.

  5) Sum the values in the far-right column and enter the total as the Secondary Sensitive Environments score. Do not evaluate part B of this factor.

- *If all secondary sensitive environments are on surface water bodies with flows greater than 100 cfs, assign 10 as the Secondary Sensitive Environments score.*

Sum the target scores in Column A (Suspected Release) or Column B (No Suspected Release).

SURFACE WATER PATHWAY (continued)
ENVIRONMENTAL THREAT SCORESHEET

LIKELIHOOD OF RELEASE		A Suspected Release	B No Suspected Release	References
Enter Surface Water Likelihood of Release score from page 12.	LR =	550		

ENVIRONMENTAL THREAT TARGETS

11. Record the water body type and flow (if applicable) for each surface water sensitive environment within the target distance limit (see PA Tables 4 and 5). If there is no sensitive environment within the target distance limit, assign a Targets score of 0 at the bottom of the page.

Environment Name	Water Body Type	Flow
		cfs
		cfs
		cfs
		cfs
		cfs

12. PRIMARY SENSITIVE ENVIRONMENTS: If you suspect any sensitive environment listed above has been exposed to a hazardous substance from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate factor 13. List the primary sensitive environments:

_____, _____,
_____, _____.

13. SECONDARY SENSITIVE ENVIRONMENTS: If sensitive environments are present, but none is a primary sensitive environment, evaluate Secondary Sensitive Environments based on flow.

A. For secondary sensitive environments on surface water bodies with flows of 100 cfs or less, assign scores as follows, and do not evaluate part B of this factor:

Flow	Dilution Weight (PA Table 4)	Environment Type and Value (PA Tables 5 and 6)	Total
cfs	x	=	
cfs	x	=	
cfs	x	=	
cfs	x	=	
cfs	x	=	

Sum =

B. If all secondary sensitive environments are located on surface water bodies with flows > 100 cfs, assign a score of 10.

T = 0

PA TABLE 5: SURFACE WATER AND AIR PATHWAY SENSITIVE ENVIRONMENTS VALUES

Sensitive Environment	*Assigned Value*
Critical habitat for Federally designated endangered or threatened species	100
Marine Sanctuary	
National Park	
Designated Federal Wilderness Area	
Ecologically important areas identified under the Coastal Zone Wilderness Act	
Sensitive Areas identified under the National Estuary Program or Near Coastal Water Program of the Clean Water Act	
Critical Areas Identified under the Clean Lakes Program of the Clean Water Act (subareas in lakes or entire small lakes)	
National Monument (air pathway only)	
National Seashore Recreation Area	
National Lakeshore Recreation Area	
Habitat known to be used by Federally designated or proposed endangered or threatened species	75
National Preserve	
National or State Wildlife Refuge	
Unit of Coastal Barrier Resources System	
Federal land designated for the protection of natural ecosystems	
Administratively Proposed Federal Wilderness Area	
Spawning areas critical for the maintenance of fish/shellfish species within a river system, bay, or estuary	
Migratory pathways and feeding areas critical for the maintenance of anadromous fish species in a river system	
Terrestrial areas utilized for breeding by large or dense aggregations of vertebrate animals (air pathway) or semi-aquatic foragers (surface water pathway)	
National river reach designated as Recreational	
Habitat known to be used by State designated endangered or threatened species	50
Habitat known to be used by a species under review as to its Federal endangered or threatened status	
Coastal Barrier (partially developed)	
Federally designated Scenic or Wild River	
State land designated for wildlife or game management	25
State designated Scenic or Wild River	
State designated Natural Area	
Particular areas, relatively small in size, important to maintenance of unique biotic communities	
State designated areas for protection/maintenance of aquatic life under the Clean Water Act	5
Wetlands	See PA Table 6 (Surface Water Pathway) or PA Table 9 (Air Pathway)

PA TABLE 6: SURFACE WATER PATHWAY WETLANDS FRONTAGE VALUES

Total Length of Wetlands	*Assigned Value*
Less than 0.1 mile	0
0.1 to 1 mile	25
Greater than 1 to 2 miles	50
Greater than 2 to 3 miles	75
Greater than 3 to 4 miles	100
Greater than 4 to 8 miles	150
Greater than 8 to 12 miles	250
Greater than 12 to 16 miles	350
Greater than 16 to 20 miles	450
Greater than 20 miles	500

SURFACE WATER PATHWAY WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORES

Waste Characteristics (WC)

14. **Waste Characteristics:** Score is assigned from page 4. However, if a primary target has been identified for any surface water threat, assign either the score calculated on page 4 or a score of 32, whichever is greater.

Surface Water Pathway Threat Scores

Fill in the matrix with the appropriate scores from the previous pages. To calculate the score for each threat: multiply the scores for LR, T, and WC; divide the product by 82,500; and round the result to the nearest integer. The Drinking Water Threat and Human Food Chain Threat are each subject to a maximum of 100. The Environmental Threat is subject to a maximum of 60. Enter the rounded threat scores in the far-right column.

Surface Water Pathway Score

Sum the individual threat scores to determine the Surface Water Pathway Score. If the sum is greater than 100, assign 100.

SURFACE WATER PATHWAY (concluded)
WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY

WASTE CHARACTERISTICS	A *Suspected Release*	B *No Suspected Release*
14. A. If you have identified any primary target for surface water (pages 12, 14, or 15), assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	[100 or 32] 32	
B. If you have NOT identified any primary target for surface water, assign the waste characteristics score calculated on page 4.	[100, 32, or 10]	[100, 32, or 10]
WC =	32	

SURFACE WATER PATHWAY THREAT SCORES

Threat	*Likelihood of Release (LR) Score (from page 12)*	*Targets (T) Score (pages 12, 14, 15)*	*Pathway Waste Characteristics (WC) Score (determined above)*	*Threat Score LR x T x WC / 82,500*
Drinking Water	550	5	32	[subject to a maximum of 100] 1.17
Human Food Chain	550	300	32	[subject to a maximum of 100] 64
Environmental	550	0	32	[subject to a maximum of 60] 0

SURFACE WATER PATHWAY SCORE
(Drinking Water Threat + Human Food Chain Threat + Environmental Threat)

[subject to a maximum of 100]
65.17

SOIL EXPOSURE PATHWAY CRITERIA LIST

Areas of surficial contamination can generally be assumed. This "Criteria List" helps guide the process of developing a hypothesis concerning the exposure of specific targets to a hazardous substance at the site. Use the "Resident Population" section to evaluate site and source conditions that may help identify targets likely to be exposed to a hazardous substance. The check-boxes record your professional judgment. Answers to all of the listed questions may not be available during the PA. Also, the list is not all-inclusive; if other criteria help shape your hypothesis, list them at the bottom of the page or attach an additional page.

Check the boxes to indicate a "yes," "no," or "unknown" answer to each question.

SOIL EXPOSURE PATHWAY CRITERIA LIST

SUSPECTED CONTAMINATION	*RESIDENT POPULATION*			
	Yes	No	Unk	
Surficial contamination can generally be assumed.	☐	☑	☐	Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination?
	☐	☑	☐	Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator?
	☐	☑	☐	Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities?
	☐	☐	☑	Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems?
	☐	☑	☐	Does any neighboring property warrant sampling?
	☐	☐		Other criteria?_____
	☐	☑		**RESIDENT POPULATION IDENTIFIED?**

Summarize the rationale for Resident Population (attach an additional page if necessary):

SOIL EXPOSURE PATHWAY SCORESHEET

Pathway Characteristics

Answer the questions at the top of the page. Identify people who may be exposed to a hazardous substance because they work at the facility, or reside or attend school or daycare on or within 200 feet of an area of suspected contamination. If the site is active, estimate the number of full and part-time workers. Note that evaluation of targets is based on current site conditions.

Likelihood of Exposure (LE)

1. **Suspected Contamination:** Areas of surficial contamination are present at most sites, and a score of 550 can generally be assigned as a default measure. Assign zero, which effectively eliminates the pathway from further consideration, only if there is no surficial contamination; reliable analytical data are generally necessary to make this determination.

Resident Population Threat Targets (T)

2. **Resident Population** corresponds to "primary targets" for the migration pathways. Use professional judgment guided by the Soil Exposure Pathway Criteria List (page 18) to determine if there are people living or attending school or daycare on or within 200 feet of areas of suspected contamination. Record the number of people identified as resident population and multiply by 10 to determine the Resident Population factor score.

3. **Resident Individual:** Assign 50 if you have identified a resident population; otherwise, assign zero.

4. **Workers:** Estimate the number of full and part-time workers at this facility and adjacent facilities where contamination is also suspected. Assign a score for the Workers factor from the table.

5. **Terrestrial Sensitive Environments:** In the table provided, list each terrestrial sensitive environment located on an area of suspected contamination. Use PA Table 7 (page 20) to assign a value for each. Sum the values and assign the total as the factor score.

6. **Resources:** A score of 5 can generally be assigned as a default measure. Assign zero only if there is no land resource use on an area of suspected contamination.

Sum the target scores.

Waste Characteristics (WC)

7. Enter the WC score determined on page 4.

Resident Population Threat Score: Multiply the scores for LE, T, and WC. Divide the product by 82,500. Round the result to the nearest integer. If the result is greater than 100, assign 100.

Nearby Population Threat Score: Do not evaluate this threat if you gave a zero score to Likelihood of Exposure. Otherwise, assign a score based on the population within a 1-mile radius (use the same 1-mile radius population you evaluate for air pathway population targets):

Population Within One Mile	Nearby Population Threat Score
< 10,000	1
10,000 to 50,000	2
>50,000	4

Soil Exposure Pathway Score: Sum the Resident Population Threat score and the Nearby Population Threat score, subject to a maximum of 100.

SOIL EXPOSURE PATHWAY SCORESHEET

Pathway Characteristics		
Do any people live on or within 200 ft of areas of suspected contamination?	Yes ___	No ✓
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination?	Yes ___	No ✓
Is the facility active? Yes ✓ No ___ If yes, estimate the number of workers: 200		

LIKELIHOOD OF EXPOSURE	Suspected Contamination	References
1. SUSPECTED CONTAMINATION: Surficial contamination can generally be assumed, and a score of 550 assigned. Assign zero only if the absence of surficial contamination can be confidently demonstrated. LE =	550	3
RESIDENT POPULATION THREAT TARGETS		
2. RESIDENT POPULATION: Determine the number of people occupying residences or attending school or daycare on or within 200 feet of areas of suspected contamination (see Soil Exposure Pathway Criteria List, page 18). 0 people x 10 =	0	4
3. RESIDENT INDIVIDUAL: If you have identified a resident population (factor 2), assign a score of 50; otherwise, assign a score of 0.	0	
4. WORKERS: Use the following table to assign a score based on the total number of workers at the facility and nearby facilities with suspected contamination:	5	4
5. TERRESTRIAL SENSITIVE ENVIRONMENTS: Use PA Table 7 to assign a value for each terrestrial sensitive environment on an area of suspected contamination: Sum =	0	
6. RESOURCES	5	
T =	10	

Number of Workers	Score
0	0
1 to 100	5
101 to 1,000	10
>1,000	15

Terrestrial Sensitive Environment Type	Value

WASTE CHARACTERISTICS		
7. Assign the waste characteristics score calculated on page 4. WC =	18	

RESIDENT POPULATION THREAT SCORE: $\frac{LE \times T \times WC}{82,500.}$ = 1.2

NEARBY POPULATION THREAT SCORE: 1 — 2

SOIL EXPOSURE PATHWAY SCORE:
Resident Population Threat + Nearby Population Threat = 2.2

PA TABLE 7: SOIL EXPOSURE PATHWAY
TERRESTRIAL SENSITIVE ENVIRONMENT VALUES

Terrestrial Sensitive Environment	*Assigned Value*
Terrestrial critical habitat for Federally designated endangered or threatened species	100
National Park	
Designated Federal Wilderness Area	
National Monument	
Terrestrial habitat known to be used by Federally designated or proposed threatened or endangered species	75
National Preserve (terrestrial)	
National or State terrestrial Wildlife Refuge	
Federal land designated for protection of natural ecosystems	
Administratively proposed Federal Wilderness Area	
Terrestrial areas utilized by large or dense aggregations of animals (vertebrate species) for breeding	
Terrestrial habitat used by State designated endangered or threatened species	50
Terrestrial habitat used by species under review for Federal designated endangered or threatened status	
State lands designated for wildlife or game management	25
State designated Natural Areas	
Particular areas, relatively small in size, important to maintenance of unique biotic communities	

AIR PATHWAY CRITERIA LIST

This "Criteria List" helps guide the process of developing a hypothesis as to whether a release to the air is likely to be detected. The check-boxes record your professional judgment. Answers to all of the listed questions may not be available during the PA. Also, the list is not all-inclusive; if other criteria help shape your hypothesis, list them at the bottom of the page or attach an additional page.

The "Suspected Release" section identifies several conditions that could provide insight as to whether a release from the site is likely to be detected. If a release is suspected, primary targets are any residents, workers, students, and sensitive environments on or within ¼ mile of the site.

Check the boxes to indicate a "yes," "no," or "unknown" answer to each question. If you check the "Suspected Release" box as "yes," make sure you assign a Likelihood of Release value of 550 for the pathway.

AIR PATHWAY CRITERIA LIST

SUSPECTED RELEASE				PRIMARY TARGETS
Yes	No	Unk		
☐	☑	☐	Are odors currently reported?	If you suspect a release to air, evaluate all populations and sensitive environments within 1/4 mile (including those onsite) as primary targets.
☐	☑	☐	Has release of a hazardous substance to the air been directly observed?	
☐	☐	☑	Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air?	
☐	☑	☐	Does analytical or circumstantial evidence suggest a release to the air?	
☐	☑		Other criteria?_____	
☐	☑		**SUSPECTED RELEASE?**	

Summarize the rationale for Suspected Release (attach an additional page if necessary):

AIR PATHWAY SCORESHEET

Pathway Characteristics

Answer the questions at the top of the page. Refer to the Air Pathway Criteria List (page 21) to hypothesize whether you suspect that a hazardous substance release to the air could be detected. Due to dispersion, releases to air are not as persistent as releases to water migration pathways and are much more difficult to detect. Develop your hypothesis concerning the release of hazardous substances to air based on "real time" considerations. Record the distance (in feet) from any source to the nearest regularly occupied building.

Likelihood of Release (LR)

1. Suspected Release: Hypothesize based on professional judgment guided by the Air Pathway Criteria List (page 21). If you suspect a release to air, use only Column A for this pathway and do not evaluate factor 2.

2. No Suspected Release: If you do not suspect a release, enter 500 and use only Column B for this pathway.

Targets (T)

3. Primary Target Population: Evaluate populations subject to exposure from release of a hazardous substance from the site. If you suspect a release, the resident, student, and worker populations on and within ¼ mile of the site are considered primary target population. If only the number of residences is known, use the average county residents per household (rounded up to the next integer) to determine the population. In the space provided, enter this population. Multiply the population by 10 to determine the Primary Target Population score. Note that if you do not suspect a release, there can be no primary target population.

4. Secondary Target Population: Evaluate populations in distance categories not suspected to be subject to exposure from release of a hazardous substance from the site. If you suspect a release, residents, students, and workers in the ¼- to 4-mile distance categories are secondary target population. If you do not suspect a release, all residents, students, and workers onsite and within 4 miles are considered secondary target population.

Use PA Table 8 (page 23). Enter the population in each secondary target population distance category, circle the assigned value, and record it on the far-right side of the table. Sum the far-right column and enter the total as the Secondary Target Population factor score.

5. Nearest Individual represents the threat posed to the person most likely to be exposed to a hazardous substance release from the site. If you have identified a primary target population, enter 50. Otherwise, assign the score from PA Table 8 (page 23) for the closest distance category in which you have identified a secondary target population.

6. Primary Sensitive Environments: If a release is suspected, all sensitive environments on or within ¼ mile of the site are considered primary targets. List them and assign values for sensitive environment type (from PA Table 5, page 16) and/or wetland acreage (from PA Table 9, page 23). Sum the values and enter the total as the factor score.

7. Secondary Sensitive Environments: If a release is suspected, sensitive environments in the ¼- to ½-mile distance category are secondary targets; greater distances need not be evaluated because distance weighting greatly diminishes the impact on site score. If you do not suspect a release, all sensitive environments on and within ½ mile of the site are considered secondary targets. List each secondary sensitive environment on PA Table 10 (page 23) and assign a value to each using PA Tables 5 and 9. Multiply each value by the indicated distance weight and record the product in the far-right column. Sum the products and enter the total as the factor score.

8. Resources: A score of 5 can generally be assigned as a default measure. Assign zero only if there is no land resource use within ½ mile.

Sum the target scores in Column A (Suspected Release) or Column B (No Suspected Release).

Waste Characteristics (WC)

9. Waste Characteristics: Score is assigned from page 4. However, if you have identified any primary target for the air pathway, assign either the score calculated on page 4 or a score of 32, whichever is greater.

Air Pathway Score: Multiply the scores for LR, T, and WC. Divide the product by 82,500. Round the result to the nearest integer. If the result is greater than 100, assign 100.

AIR PATHWAY SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Air Pathway Criteria List, page 21)?	Yes ___ No ✓
Distance to the nearest individual:	_____ ft

LIKELIHOOD OF RELEASE	A *Suspected Release*	B *No Suspected Release*	*References*
1. SUSPECTED RELEASE: If you suspect a release to air (see page 21), assign a score of 550. Use only column A for this pathway.			
2. NO SUSPECTED RELEASE: If you do not suspect a release to air, assign a score of 500. Use only column B for this pathway.		500	4.12
LR =		500	

TARGETS			
3. PRIMARY TARGET POPULATION: Determine the number of people subject to exposure from a suspected release of hazardous substances to the air. ____ people x 10 =			
4. SECONDARY TARGET POPULATION: Determine the number of people not suspected to be exposed to a release to air, and assign the total population score using PA Table 8.		16	7
5. NEAREST INDIVIDUAL: If you have identified any Primary Target Population for the air pathway, assign a score of 50; otherwise, assign the Nearest Individual score from PA Table 8.		20	4
6. PRIMARY SENSITIVE ENVIRONMENTS: Sum the sensitive environment values (PA Table 5) and wetland acreage values (PA Table 9) for environments subject to exposure from a suspected release to the air.			
Sum =			
7. SECONDARY SENSITIVE ENVIRONMENTS: Use PA Table 10 to determine the score for secondary sensitive environments.		0	
8. RESOURCES		5	
T =		41	

Sensitive Environment Type	*Value*

WASTE CHARACTERISTICS			
9. A. If you have identified any Primary Target for the air pathway, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.			
B. If you have NOT identified any Primary Target for the air pathway, assign the waste characteristics score calculated on page 4.		18	
WC =		18	

AIR PATHWAY SCORE: $\frac{LR \times T \times WC}{82,500}$ = 4.47

PA TABLE 8: VALUES FOR SECONDARY AIR TARGET POPULATIONS

Distance from Site	Population	Nearest Individual (choose highest)	Population Within Distance Category: 1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	Greater than 1,000,000	Population Value
Onsite	25	20	1	2	5	16	52	163	521	1,633	5,214	16,325	52,136	163,246	2
>0 to ¼ mile	89	20	1	1	1	4	13	41	130	408	1,303	4,081	13,034	40,811	1
>¼ to ½ mile	242	2	0	0	1	1	3	9	28	88	282	882	2,815	8,815	1
>½ to 1 mile	2574	1	0	0	0	1	1	3	8	26	83	261	834	2,612	3
>1 to 2 miles	9792	0	0	0	0	0	1	1	3	8	27	83	266	833	3
>2 to 3 miles	15951	0	0	0	0	0	1	1	1	4	12	38	120	376	4
>3 to 4 miles	19207	0	0	0	0	0	0	1	1	2	7	23	73	229	2

Nearest Individual = 20

Score = 16

PA TABLE 9: AIR PATHWAY VALUES FOR WETLAND AREA

Wetland Area	Assigned Value
Less than 1 acre	0
1 to 50 acres	25
Greater than 50 to 100 acres	75
Greater than 100 to 150 acres	125
Greater than 150 to 200 acres	175
Greater than 200 to 300 acres	250
Greater than 300 to 400 acres	350
Greater than 400 to 500 acres	450
Greater than 500 acres	500

PA TABLE 10: DISTANCE WEIGHTS AND CALCULATIONS FOR AIR PATHWAY SECONDARY SENSITIVE ENVIRONMENTS

Distance	Distance Weight	Sensitive Environment Type and Value (from PA Table 5 or 9)	Product
Onsite	0.10	x	
		x	
0-1/4 mi	0.025	x	
		x	
		x	
1/4-1/2mi	0.0054	x	
		x	
		x	
		x	

Total Environments Score =

SITE SCORE CALCULATION

In the column labeled S, record the Ground Water Pathway score, the Surface Water Pathway score, the Soil Exposure Pathway score, and the Air Pathway score. Square each pathway score and record the result in the S^2 column. Sum the squared pathway scores. Divide the sum by 4, and take the square root of the result to obtain the Site Score.

SUMMARY

Answer the summary questions, which ask for a qualitative evaluation of the relative risk of targets being exposed to a hazardous substance from the site. You may find your responses to these questions a good cross-check against the way you scored the individual pathways. For example, if you scored the ground water pathway on the basis of no suspected release and secondary targets only, yet your response to question #1 is "yes," this presents apparently conflicting conclusions that you need to reconsider and resolve. Your answers to the questions on page 24 should be consistent with your evaluations elsewhere in the PA scoresheets package.

SITE SCORE CALCULATION

	S	S^2
GROUND WATER PATHWAY SCORE (S_{gw}):	6.24	38.94
SURFACE WATER PATHWAY SCORE (S_{sw}):	65.17	4247.13
SOIL EXPOSURE PATHWAY SCORE (S_s):	2.2	4.84
AIR PATHWAY SCORE (S_a):	4.47	19.98
SITE SCORE: $\sqrt{\frac{S_{gw}^2+S_{sw}^2+S_s^2+S_a^2}{4}}$		32.83

SUMMARY

	YES	NO
1. Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water?	☐	☑
A. If yes, identify the well(s).		
B. If yes, how many people are served by the threatened well(s)?		
2. Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water?		
A. Drinking water intake	☐	☑
B. Fishery	☑	☐
C. Sensitive environment (wetland, critical habitat, others)	☐	☑
D. If yes, identify the target(s). Noose Creek		
3. Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility?	☐	☑
If yes, identify the property(ies) and estimate the associated population(s).		
4. Are there public health concerns at this site that are not addressed by PA scoring considerations? If yes, explain:	☐	☑

Author: Steve White <SWhite@mail.dnr.state.ga.us> at IN
Date: 01/13/97 02:12 PM
Priority: Normal
BCC: john mckeown at REGION4
TO: mckeown.john@epamail.epa.gov at IN
CC: Deadre_Embrey@mail.dnr.state.ga.us at IN
Subject: more recent discovery (PA?)
---------- Message Contents ----------

From SWhite@mail.dnr.state.ga.us
X-Envelope-From: SWhite@mail.dnr.state.ga.us
Received: from mail.dnr.state.ga.us (mail.DNR.State.Ga.US [167.193.49.4]) by merlin.rtpnc.epa.gov (8.7.6/8.7.3) with SMTP id NAA07616 for <mckeown.john@epamail.epa.gov>; Mon, 13 Jan 1997 13:57:16 -0500 (EST) Received: from EPD-TT-Message_Server by mail.dnr.state.ga.us with Novell_GroupWise; Mon, 13 Jan 1997 13:59:02 -0500
Message-Id: <s2da3fa6.038@mail.dnr.state.ga.us>
X-Mailer: Novell GroupWise 4.1
Date: Mon, 13 Jan 1997 14:04:29 -0500
From: Steve White <SWhite@mail.dnr.state.ga.us>
To: mckeown.john@epamail.epa.gov
Cc: Deadre_Embrey@mail.dnr.state.ga.us
Subject: more recent discovery (PA?)
Mime-Version: 1.0
Content-Type: text/plain
Content-Disposition: inline

John, please consider these sites for PA work for us this year. Let me know and we'll get started on them immediately.

Site #1 of 2
name: AJAY
source: Selenium contamination in their production well. Their production well is located on Georgia Metal's property.
location: 1400 Industry Road S.W. Powder Springs, Cobb County

Site #2 of 2
name: Lakewood Battery
source: Facility recharges, stores, and transports batteries for recycling. Lead contamination (TCLP 290,000 ug/l) of soil as result of emptying battery acid on ground. Anonymous complaint.
location: 162 Milton Ave., Atlanta, Fulton County.