ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

NJA 064337198

C & D Batteries
Site No. 336001
Huguenot, Orange County
Final - March, 1990

FILE COPY

Prepared for:
New York State
Department of
Environmental Conservation

50 Wolf Road, Albany, New York 12233-7010
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Division of Hazardous Waste Remediation
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253800

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK PHASE II INVESTIGATION

C&D BATTERIES
TOWN OF HUGUENOT, ORANGE COUNTY
SITE NO. 336001

RECEIVED
MAR 29 1990
BUREAU OF
HAZARDOUS SITE CONTROL
DIVISION OF HAZARDOUS
WASTE REMEDIATION

FINAL - MARCH 1990

PREPARED FOR:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
50 WOLF ROAD
ALBANY, NEW YORK, 12233-7010

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I. EXECUTIVE SUMMARY

Gibbs & Hill, Inc. (G&H) has entered into a consulting services agreement with the New York State Department of Environmental Conservation (NYSDEC) Division of Hazardous Waste Remediation to conduct preliminary investigations (Phase I) and field investigations (Phase II) at inactive hazardous waste disposal sites in New York State. This report presents the results of the Phase II investigation of the C&D Batteries site (NYSDEC Site ID No. 336001) performed by G&H. A Phase I investigation of this site was not conducted.

The C&D Batteries site is located in Huguenot, Orange County, New York (Figure I-1), in the Neversink River Valley, about 4 miles northeast of the City of Port Jervis. C&D Charter Power Systems, Batteries Division (C&D), purchased the site in 1973 from the Empire Tube Corporation, a manufacturer of black and white television picture tubes.

A Phase II investigation of the site was conducted to gather information to classify the site and to calculate the final Hazard Ranking System (HRS) scores. Field investigations included a record search, interviews, site reconnaissance, and collection of five groundwater samples and one duplicate groundwater sample, two surface water, and two sediment

samples. Groundwater, surface water, and sediment samples were analyzed to define the extent of potential contamination at the site.

The groundwater, surface water, and sediment sample analyses do not indicate migration of site soil contamination from the site to the groundwater and to the downslope surface water.

The final HRS scores for the site based on the results of this Phase II investigation have been calculated as follows:

S_M = 0.00

S_{gw} = 0.00

S_{sw} = 0.00

S_a = 0.00

S_{DC} = 0.00

S_{FE} = N/A

The S_M score reflects the potential for harm due to migration of hazardous substances away from the facility. This score is the composite of scores for groundwater (S_{gw}), surface water (S_{sw}), and air (S_a) transport routes. The S_{FE} score reflects the potential for harm from substances that can cause fire or explode, and the S_{DC} score reflects the potential harm from direct contact with hazardous substances.

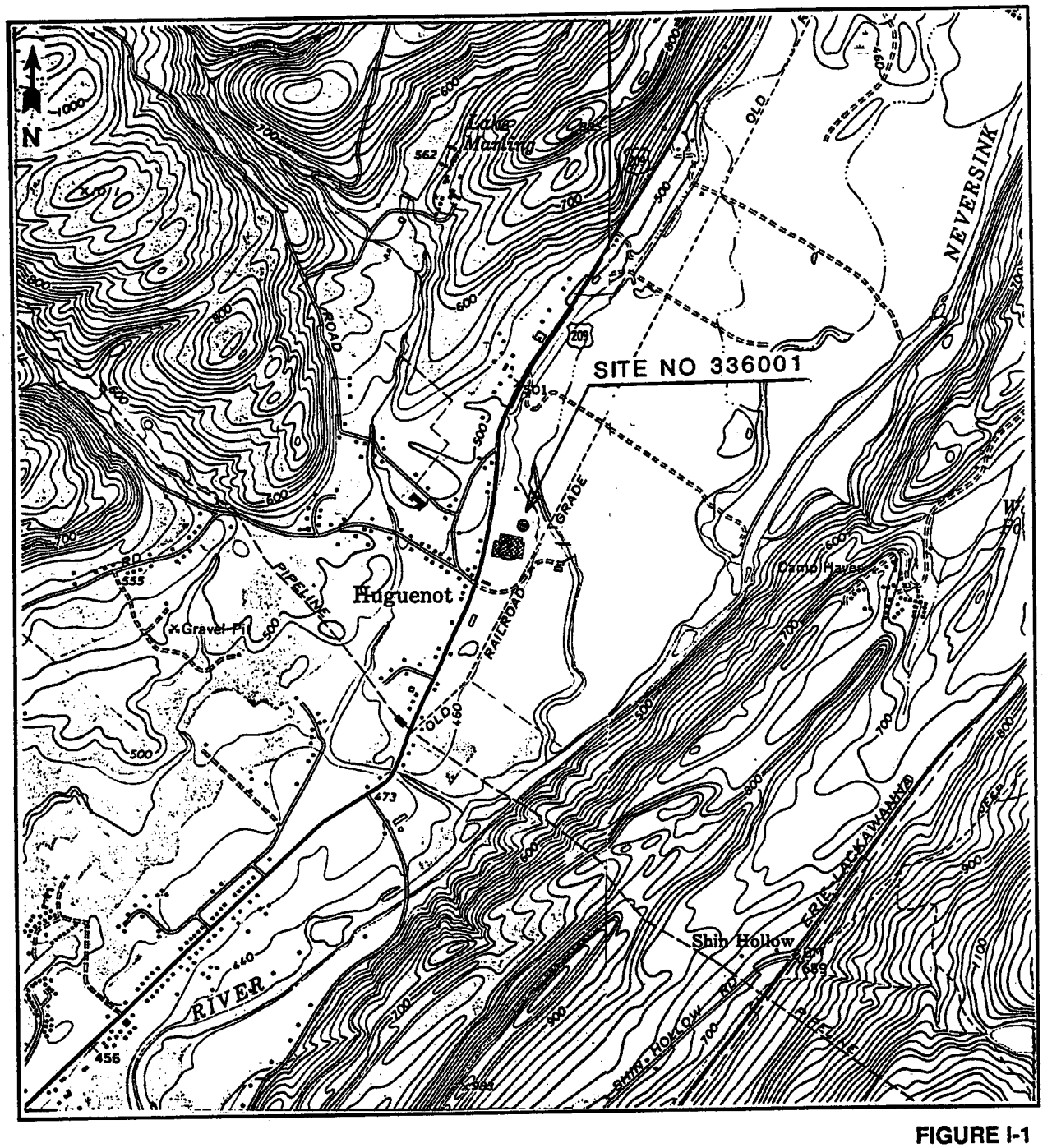

FIGURE I-1

COORDINATES:

LONGITUDE: 41° 25' 10"

LATITUDE: 74° 37' 45"

1000 0 1000 2000

SCALE (FEET)

SITE LOCATION MAP
SITE: C & D BATTERIES

MAP SOURCE:
USGS MAP PORT JERVIS NORTH QUAD
USGS MAP OTISVILLE QUAD
7.5 MINUTE SERIES (1969 EDITION)

GIBBS & HILL, INC.

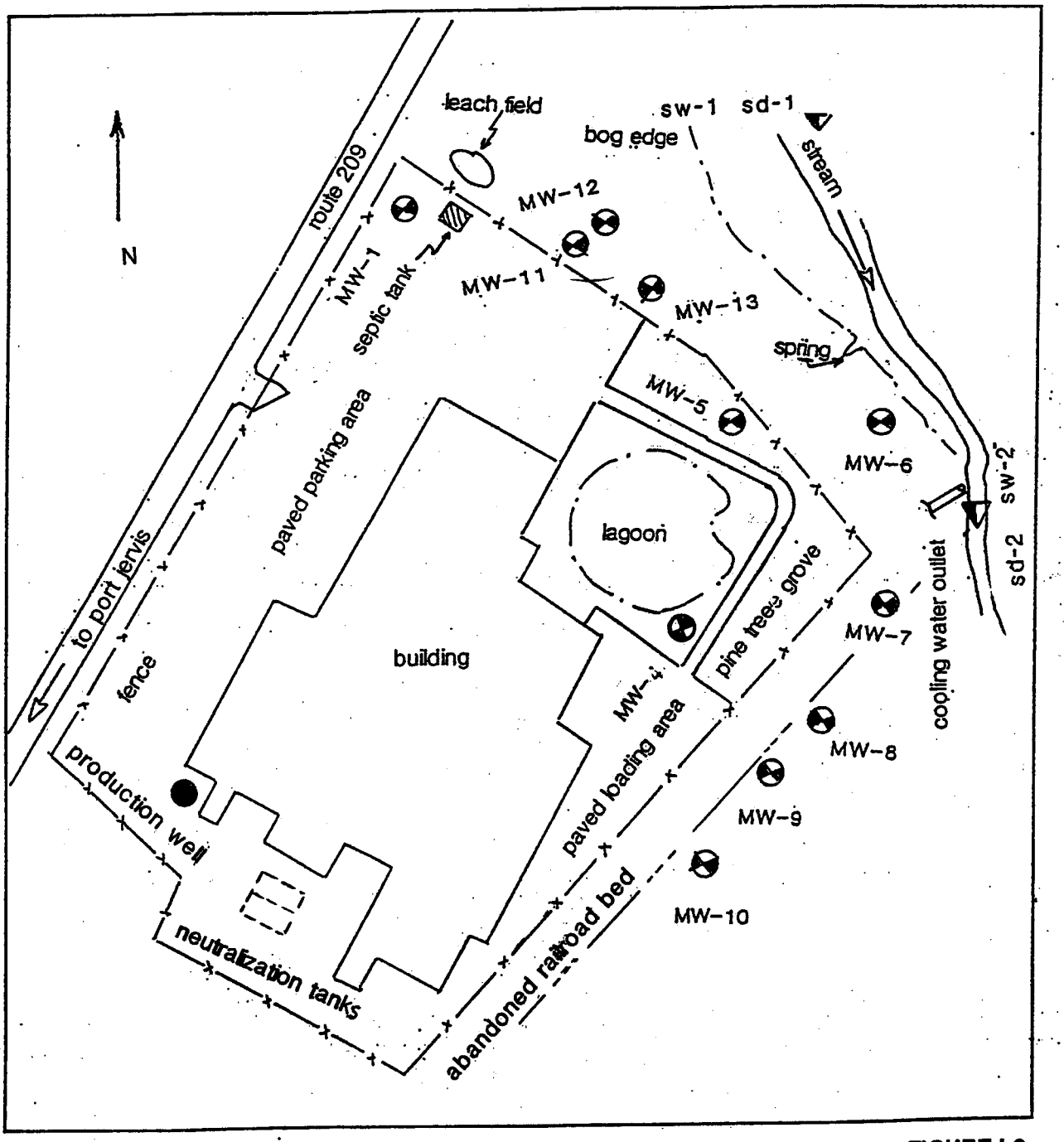

FIGURE I-2

not to scale

SITE SKETCH

SITE: C & D BATTERIES

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II. PURPOSE

The objective of a New York State Superfund Phase II investigation is to determine if contaminants are present at an inactive hazardous waste site with a resulting adverse impact on human population and/or the environment.

The goal of this investigation was to collect the information required to classify the site and to develop final HRS scores. This included collecting field data necessary to identify the occurrence and characteristics of contamination and determine if a release of contaminants from the site has occurred. This information will be used by the NYSDEC to determine if any imminent and/or significant environmental or health hazard exists. These objectives were accomplished through the sampling and analysis of groundwater in accordance with NYSDEC protocols and guidelines.

III. SCOPE OF WORK

A. INTRODUCTION

Gibbs & Hill, Inc. (G&H) entered into a consulting services agreement on October 16, 1986 with the NYSDEC Division of Hazardous Waste Remediation to conduct preliminary investigations (Phase I) and field investigations (Phase II) at inactive hazardous waste disposal sites in New York State. G&H and its subcontractors completed Phase I investigations of 30 sites under the provisions of this agreement.

The original agreement was amended January 21, 1988 (Amendment 1) to include an additional 25 sites to receive Phase II investigations. This report presents the results of the Phase II investigation of the C&D Batteries site (NYSDEC Site ID No. 356001) performed by G&H. A Phase I investigation of this site was not performed.

The Phase II field investigations at the C&D Batteries site began in July 1988 and were completed in January 1989. An updated work plan (Appendix A), approved by the NYSDEC, was prepared by G&H to define the scope of sampling activities at the site. The Phase II investigation was comprised of a record search; review of relevant literature, groundwater, surface

water, and sediment sampling and analysis; and the preparation of final HRS scores. The scope of work of the investigation is summarized in Table III-1.

B. SAMPLING AND ANALYSIS

On January 18, 1989, one groundwater sample from upgradient well MW-11; four groundwater samples from downgradient wells MW-6, MW-7, MW-8, and MW-9; one duplicate; and two surface water/sediment sample pairs (upstream and downstream) from the tributary of the Neversink River were collected. These samples were analyzed for Target Compound List (TCL) inorganics, volatiles, semi-volatiles, and pesticides/PCBs. The chemical analytical results are discussed in Section IV and included in their entirety in Appendix C.2. The relevant field procedures are outlined in Appendix C.1.

H2M Labs (Melville, New York) performed the analyses in accordance with November 1987 NYSDEC Contract Laboratory Protocols (CLP). OBG Laboratories (Syracuse, New York) performed an independent data validation.

C. AIR SURVEY

In accordance with appropriate health and safety procedures, a photoionization detector (PID) was used to monitor the air in the working zone for organic vapors before sampling.

D. SOURCES OF INFORMATION

The following individuals and agencies with knowledge of the site were contacted:

Contact	Information Received
Mattias J. Schleifer Environmental Health Department Orange County Department of Health 124 Main Street Goshen, NY 10924 Phone: 914/294-7961	DOH files
Lawrence J. Alden N.Y. State Dept. of Environmental Conservation Div. of Hazardous Waste Remediation Bureau of Hazardous Site Control 50 Wolf Road Albany, NY 12233-7010 Phone: 518/457-0639	NYSDEC files
Michael M. Langan Environmental Engineer C&D Charter Power Systems, Inc. Route. 208, P.O. Box 209 Hugenot, NY 12746 Phone: 914/856-4466	C&D files Interview

Contact	Information Received
Carol Reschke Community Ecologist Wildlife Resources Center Delmar, NY 12054	Critical habitat
Debbie Kraybill National Park Service P. O. Box 37127 Washington, DC 20013-7127 Phone: 202/343-9559	National or state park, forest, or wildlife reserves location
James R. Covey Assoc. Sanitary Engineer NYSDOH The Governor Nelson A. Rockefeller Empire State Plaza Albany, NY 12237 Phone: 518/458-6731	NYS safe water inventory printouts
Ms. Susan Hopkins CLEARS Cornell University 464 Hollister Hall Ithaca, NY 14853-3501	Wetland map
Map Information Unit New York State Department of Transportation State Campus, Bldg. 4, Room 105 Albany, NY 12232 Phone: 518/457-3555	NYSDOT map

Contact	Information Received
Hagstrom 57 West 43rd Street New York, NY 10036 Phone: 212/398-1222	Updated USGS maps
Ramanand Pergadia, P.E. Senior Sanitary Engineer NYSDEC Region 3 Div. of Solid and Hazardous Waste 21 South Putt Corners Road New Paltz, NY 12561 Phone: 914/255-5453	NYSDEC files
Mr. Lee Lockhart Reporduction Supervisor Syracuse Blue Print Company Syracuse, NY 1321 Phone: 315/476-4084	Wetland maps

TABLE III-1

SCOPE OF WORK

Task	Description
Record search and data compilation	Collection of information.
Interviews	Conduct interviews with individuals and agencies with knowledge of the site to collect additional information.
Site reconnaissance	Note site changes since NYSDEC initial reconnaissance, assess access to monitoring well and sampling locations, and become familiar with the site.
Updated work plan	Revise preliminary NYSDEC work plan based on results of record search and site reconnaissance. Prepare health and safety plan and define sampling protocols and procedures.
Sampling and analysis	
Groundwater	Collect groundwater samples from five wells and one additional duplicate groundwater sample from a downgradient well. Analyze these samples for TCL inorganics, volatiles, semi-volatiles, and pesticides/PCBs.
Surface Water	Collect two surface water samples (upstream and downstream) from the tributary at the Neversink River. Analyze samples for TCL inorganics, volatiles, semi- volatiles, and pesticides PCBs.

TABLE III-1 (Continued)

Sediment	Collect the sediment samples (upstream and downstream) from the tributary of the Neversink River. Analyze samples for TCL inorganics, volatiles, semi-volatiles, and pesticides/PCBs.
Investigation Report	Prepare a report containing significant Phase I information, additional field data, final HRS scores, HRS documentation records, and site assessments.

IV. SITE ASSESSMENT

A. SITE DESCRIPTION AND HISTORY

The C&D Batteries site, approximately a 10-acre parcel of land, is located on Route 209 in Huguenot, Orange County, New York (Figure I-1). C&D Charter Power System, Batteries Division (C&D), purchased the site in 1973 from the Empire Tube Corporation (ET), a manufacturer of black and white television picture tubes.

The Empire Tube Corporation started the plant in 1959. In the manufacturing process, 15 percent hydrofluoric acid was used to remove carbon and a small amount of potassium silicate from the tubes. In addition, small quantities of emulsified paint wastes were introduced into the wastewater. In January 1961, Eustance and Horowitz, Civil Engineers, submitted a letter to the NYSDOH with explanations on a proposed treatment plant for wastewater generated by this process [D.1]. Plans for lagoon disposal of industrial wastes were approved by the Middletown District Department of Health in October 1961 [D.2].

In May 1964, the NYSDOH inspected the waste disposal system. The site report shows the following: (1) The waste disposal facilities consisted of three cesspools to handle sanitary wastes and a lagoon to handle industrial wastes. The sanitary

system was located approximately 400 feet to the north of the factory building and approximately 250 feet from the bank rising above tributary D-1-7 of the Neversink River. The industrial wastes disposal system was located approximately 75 feet northwest of the existing plant and extends to within some 150 feet of the bank mentioned above. (2) The industrial wastewater treatment system consisted of a lagoon approximately 150 feet in diameter and 15 feet deep, receiving rinse waters, floor drainage and various wash waters, but no direct discharges of hydrofluoric acid. The lagoon was constructed in gravel, and its seepage capabilities allowed not more than 2 feet of standing liquid on the bottom of the lagoon. (3) The outlet pipe was not located according to the plans. However, according to the report, it seemed that the outlet has never been used while the lagoon has been in operation. (4) The spent hydrofluoric acid was conveyed to two neutralization tanks located on the south side of the plant and neutralized with lime, resulting in calcium fluoride. The supernatant, as well as the sludge, was collected and dumped off-site by the M&S Sewage Disposal Co. (5) A sludge lagoon was constructed alongside of the bank to take sludge from the neutralization tank, but was not used. (6) Pocono Biological Laboratories analyzed surface water and groundwater collected at four points by Empire Tube on a monthly basis. The average results from the 1963 sampling showed that the water sample taken from the spring coming out from the bank on which the waste disposal lagoon was

located contained approximately 100 mg/l of fluorides. The results on fluorides of the samples taken from tributary D-1-7 showed 8.0 mg/l and from the plant production well, located 50 feet from the southerly side of the building, showed 0.0 to 5.5 mg/l. Samples from a private well, located on a property some 800 feet away from the lagoon, consistently indicated 0.0 mg/l of fluorides [D.2].

An investigation made in May 1964 concerning odor complaints in the vicinity of Huguenot disclosed an area where a local scavenger dumped sludges from the cesspools and the ET neutralization tank. The area was 4 feet by 60 feet, located approximately 1,600 feet upslope from the headwaters of tributary D-1-7 [D.2].

In September 1966, the NYSDOH filed a complaint against the ET Company regarding the disposal of untreated or inadequately treated sewage, industrial wastes, and other wastes into the waters of the State of New York. Complaints included discharges of industrial wastes containing about 2,500 ppm of fluorides and unspecified concentrations of barium and silicates. Said discharges had contravened water quality standards since February 1, 1963 [D.6].

Environmental Resources Management, Inc. (ERM) conducted an investigation of the site to determine the chemical character

and hazardous nature of the residual wastes in the lagoon. In December 1981 and January 1982, ERM installed wells MW-1 through MW-13 (originally designated by ERM as CD-1 through CD-13). Well log sheets are enclosed in Attachment D. (Log sheet for well CD-11 could not be provided.) As part of the investigation, ERM analyzed soil samples collected from the site on October 15, 1981 by C&D's employees (sample points were not specified)[D.11]. With the exception of lead, cadmium, and zinc, all other analyzed inorganics were within the common range of inorganics in the soil (Table IV-7). Oil and grease were also detected. Since the lagoon was receiving floor drainage (which commonly contains oil and grease spillage), their presence in the soil sample (assumed taken from the bottom of the lagoon) is not surprising. The soil sample was also analyzed for characteristics of Extraction Procedure (EP) toxicity for hazardous waste. The result of the EP toxicity test indicates that concentrations of metals leached from the soil sample did not exceed maximum concentrations. The presence of lead, cadmium, and zinc may be attributable to paint wastes from ET's operation.

Several composite soil samples were also collected from the bottom of the lagoon on December 10, 1981 [D.11]. Leachate generated from each sample, according to EPA protocols, was analyzed for fluoride, barium, cadmium, lead, and zinc and compared to EPA standards. The January 1982 soil leachate

results indicated that lead concentrations were below the detection limits and fluoride concentrations were in the range of 28 to 358 mg/kg. ERM concluded that the soil material in the bottom of the lagoon is not classified as a RCRA hazardous waste. The groundwater samples collected in December 1981 from wells MW-1, 2, 3, 4, and 5 (CD-1, CD-2, CD-3, CD-4, and CD-5) and the plant production well showed that the water in the vicinity of the lagoon is generally of acceptable quality except for the presence of elevated fluoride concentrations (13-38 mg/l) as compared to the background level (0.07 mg/l) and the New York State Sanitary Code (2.2 mg/l)[D.10, 11, and 20].

The second phase of ERM's investigation included the collection of groundwater samples from wells MW-6 through MW-10 (CD-6 through CD-10), two surface water samples from tributary D-1-7 (upstream and downstream), one sample from the spring, and one sample from standing water at the bottom of the lagoon. In March 1982, ERM submitted a draft report to C&D Batteries with the following findings: (1) groundwater quality has been impacted in the downgradient directions from the lagoon; significant attenuation of fluoride and barium occurs in the soil over the relatively short distance from the inner ring of monitoring wells to the outer ring; (2) water in the lagoon does not pick up contaminants from contact with lagoon bottom soils; and (3) impacts on surface water in the tributary stream northeast of the lagoon are negligible. The recommended actions

included stopping the disposal of noncontact cooling water in the lagoon, backfilling of the lagoon, and construction of building expansion over it which, according to ERM, "would effectively eliminate vertical infiltration through the lagoon bottom soil" [D.12].

Based on ERM recommendations, C&D Batteries discontinued the disposal of noncontact cooling water in the lagoon in order to stop the flow of water through the contaminated soils in the lagoon to the groundwater table. C&D Batteries also proposed to the NYSDOH the closure of the lagoon by capping through the construction of a building over it [D.7]. However, capping of the lagoon was not done.

In 1987, NYSDEC Region 3 sampled the C&D septic tank effluent, cooling water discharged to the stream, and monitoring well MW-11. The results, sent to C&D in October 1987, indicated violations of their SPDES permit and the potential existence of both surface and groundwater contamination. The NYSDEC required C&D to initiate a short-term, high-intensity monitoring program for parameters either not authorized for discharge or in violation of water quality standards [D.13].

In January and February 1988, ERM conducted groundwater sampling in conjunction with their SPDES investigation [D.16].

In September 1988, ERM submitted a report on their septic leach field investigation. According to the report, only a single organic compound (2-hexanone) was detected in the four samples of groundwater; however, the compound was probably a sampling artifact. Concentrations of 2-hexanone were only detected in the sample from the upgradient well (MW-1, 12 ug/l) and the field blank (5.3 ppb). These concentrations were very low and border the CRQL value. Five metals (chromium, copper, iron, lead, and zinc) were detected in the groundwater. Copper (at 48 ug/l) and lead (at 62 ug/l) were only detected in the upgradient well (MW-1). Chromium was detected in the intermediate well (MW-12, 13 ug/l) and the downgradient well (MW-13, 14 ug/l) at concentrations only marginally above the CRQL value. The remaining two metals (iron and zinc) were detected in groundwater samples from all of the monitoring wells. The concentrations detected were generally consistent with the background concentrations detected in the upgradient well (MW-1 - 1,817 ug/l of iron, 185 ug/l of zinc). Iron was the only compound detected above the NYSDEC water quality guidelines in groundwater beneath the Huguenot facility. The background concentration of iron (MW-1) was 1,817 ug/l, while groundwater from wells MW-12 and MW-13 had concentrations of 1,306 ug/l and 2,067 ug/l, respectively [D.17].

On July 21, 1988, a site reconnaissance of the study area was undertaken by G&H. C&D Charter Power Systems, Inc. operates a

battery manufacturing facility. The facility discharges its noncontact cooling water (see D.15 or analyses) into tributary D-1-7 and sanitary wastewater into an on-site septic system with a leach field. All discharges are conducted under SPDES permits, and effluents are sampled and reported to the NYSDEC on a regular basis. C&D Batteries does not dispose any wastewater on-site. C&D treats all their process wastewaters by an ultrafiltration unit. The recovered clean water is reused as process water. All wastes produced by the process are disposed by a waste hauler. The lagoon is presently inactive. It is surrounded by a chain-link fence; its inner slopes are covered with grass and brush; and its bottom contains wet grasses and other vegetation. Eleven monitoring wells were found (Figure I-2). Wells MW-1 and MW-4 are essentially flush with the ground. Wells MW-2 and MW-3 are covered by a newly paved area (A.1). Two old neutralization tanks, located south of the building, were removed in 1985.

To determine the flow direction of the groundwater beneath the site, all monitoring wells were surveyed for elevations, and the relative depths to groundwater were measured. The flow direction of the aquifer is described in Section IV-Hydrology, and the groundwater flow map is shown in Figure IV-1. Based on the groundwater flow map, well MW-1 was selected to intercept groundwater flowing towards the lagoon. Downgradient wells MW-6, 7, 8, and 9 were selected to detect contaminants migrating from the lagoon into the aquifer.

B. TOPOGRAPHY

The C&D Batteries site is located in the Neversink River Valley at the confluence of the Neversink and Delaware Rivers. The valley is bordered by the Shawangunk Mountains to the east. This province is characterized by a flat valley surface and ridges trending in a northeast to southwest direction. The Neversink River Valley is nearly flat, sloping less than 1 percent. The upland region is considerably steeper with slopes averaging 25 percent. Elevations in the area span from 1,000 feet above sea level in the upland to about 440 feet above sea level in the valley.

The C&D building is situated on a fairly flat area which slopes down steeply on the northeast towards tributary D-1-7 of the Neversink River and more gradually on the southeast towards the plain of the Neversink River. The site stands some 35 feet above the Neversink River. A residential area is located to the northwest of the site. The nearest residence is approximately 800 feet from the site. A water supply intake for Port Jervis City is located more than 3 miles upgradient from the site.

C. HYDROLOGY

Based on the data obtained from the drilling logs of the existing monitoring wells, the study area is underlain by

predominantly coarse sands and gravel. Finer sands and silts are found near the surface and gravels become more abundant with depth. The deposition of these sediments occurred during the last glacial retreat [D.18]. Deposition of large quantities of outwash material transpired as large, turbulent streams surged out from the stagnating and retreating ice front. The thickness of the deposit ranges from less than 10 feet to about 150 feet, but it varies because of the irregular surface of the underlying bedrock. During post-glacial activity, meandering streams flowed across the valley floor eroding a considerable amount of previously deposited glacial materials and forming the recent floodplains of the Neversink River Valley. Near the edges of the valley along the slopes of the valley walls, remnant glacial debris characterize the flat-topped benches and terraces elevated above the present day Neversink River.

Most of these glacially deposited sands and gravels are what make up the regions underlying the valley-fill aquifer. The aquifer extends a distance of approximately 28 miles from Summitville in Sullivan County, New York, to Milford, Pennsylvania. It is approximately 1 mile wide and stores about 84.4 billion gallons of water. The aquifer in the New York State area is 21 miles in length and about ½ mile in width. It has an average saturated thickness of nearly 100 feet and stores roughly 44 billion gallons of water [D.18]. Even though a considerable amount of recharge occurs through precipitation,

the largest source of recharge to the valley-fill aquifer is the Neversink River. Deposits near and along the river and its tributaries are highly permeable, allowing for infiltration of water into the aquifer.

The flow condition of the groundwater at the site was reconstructed from measurements performed at all existing wells. The local configuration of groundwater flow at the site is shown in Figure IV-1. Groundwater flow is approximately southeast at a gradient of less than 1 percent, which agrees with the groundwater contour map prepared by ERM [D.17]. The groundwater flows toward the nearby brook, which is a tributary to the Neversink River.

The hydraulic conductivity in the saturated zone was determined by a slug test. Results from the slug test showed a hydraulic conductivity value of 6×10^{-3} cm/sec (Appendix B).

D. SITE CONTAMINATION ASSESSMENT

Potential contamination of the environment within the site boundary was assessed by reviewing the character of wastes suspected to be at the site and by an evaluation of chemical analyses of the groundwater, surface water, and sediment samples.

The character of wastes suspected to be at the site was

evaluated by a review of information from historic literature (Appendix D).

The groundwater, surface water, and sediment assessment, the process by which analytical data was evaluated, is based on the criteria presented in Appendix C.1. Tables IV-1 through IV-6 summarize the results from the chemical analyses performed at the site. Results of analyses are reported in these tables for every analyte and sample if that analyte was detected in any concentration above Contract Required Quantitation Limits (CRQL). However, an analyte detected below CRQL is not reported unless it was detected above CRQL in another sample or is a contaminant of concern at the site.

1. Waste Characteristics

In view of the operational history, it is likely that when the lagoon was in operation, it received wastewater contaminated with various chemicals including fluorides, silicates, carbon deposits, aluminum, and paint wastes [D.1]. However, none of these contaminants were detected in the groundwater samples collected as part of this Phase II investigation. After purchasing the plant, C&D used the lagoon for several years to dispose its cooling water.

2. Groundwater Contamination

Six groundwater samples were collected as part of the Phase II investigations. These samples were collected from one upgradient well (MW-11) and four downgradient wells (MW-6, 7, 8, and 9), and a duplicate sample (GW-14) was chosen at random from one of the downgradient wells (MW-6). Field blank samples and a trip blank sample were included in the sampling program. Results from the chemical analyses of the groundwater samples are summarized in Tables IV-2 and IV-3.

Three organic compounds bis (2-ethylhexyl) phthalate, 4,4'-DDT, and methylene chloride were detected in all samples of the groundwater. Because the concentrations of these three compounds as well as the concentration of acetone found in well MW-11 only are less than three times the concentrations of these compounds in the associated method or field blank, these results are considered to be the result of laboratory or sampling contamination. Concentrations of toluene (found in sample GW-11 only) and tetrachloroethane (found in well MW-9 only) were detected in concentrations less than three times the CRQL, and therefore, these results cannot be considered as evidence of migration of these contaminants from the site into the groundwater.

The analyses of samples for inorganics also indicate that there is no evidence of migration of contaminants from the site into the groundwater. The concentrations of aluminum, calcium, iron, lead, and zinc in the downgradient wells were found to be in elevated concentrations, but not more than three times greater the concentrations of these metals in the upgradient well. Lead was the only TCL inorganic detected above the Federal Primary Drinking Water Quality Standards (maximum contaminant level). Iron and manganese concentrations are above the Federal Secondary Drinking Water Standards (secondary maximum contaminant level)(Table IV-7).

PCBs were not detected in any of the groundwater samples.

3. Surface Water and Sediment Contamination

Two surface water/sediment sample pairs were collected to determine whether contaminants discharged by wastewaters into the lagoon are currently impacting the nearby surface water.

The sample pairs were taken at two locations shown in Figure I-2. The samples were obtained from the small tributary stream northeast of the lagoon from the points downstream (3 feet downstream of the cooling water outlet) and upstream (below MW-11) from the lagoon.

4,4'-DDT was found in both upstream and downstream samples in almost equal concentrations, indicating that the site is not a source of this contamination. These concentrations are above the New York State Water Standard (Table IV-7). Methylene chloride, acetone, and bis (2-ethylhexyl) phthalate were also found in both surface water samples. Because the concentrations of these three common laboratory contaminants were less than five times the concentrations detected in the method blank, the results are considered as laboratory artifacts. The level of iron is significantly (49,000 ug/l) higher in the upstream sample as compared to the downstream level (127 ug/l). It is also above the New York State Water Standard (300 ug/l).

The sediment samples collected from downstream showed that the material along the bottom of the stream is contaminated by 15 organic compounds. Four of them: methylene chloride, acetone, heptachlor, and 4,4'-DDT, are found in both the upstream and downstream samples. Concentrations of these compounds detected in the downstream samples do not exceed ten times the concentrations detected in the upstream (background) samples, indicating that there is no evidence of migration of any of these compounds from the site to the surface water.

The remaining 11 organic compounds (detected in downstream sample SS-2 only) are of coal tar origin. The source of this contamination remains unclear. Due to a lack of complete analysis of wastes generated in the ET plant and the design of the wastewater treatment facility, the sediment contamination cannot be positively attributed to the site. Since the crude, refined products, or fractions of coal tar are used for waterproofing, paints, pipe coating, roads, roofing, insulation, and sealants, the abandoned rail bed and nearby paved parking lot might be the source of this contamination.

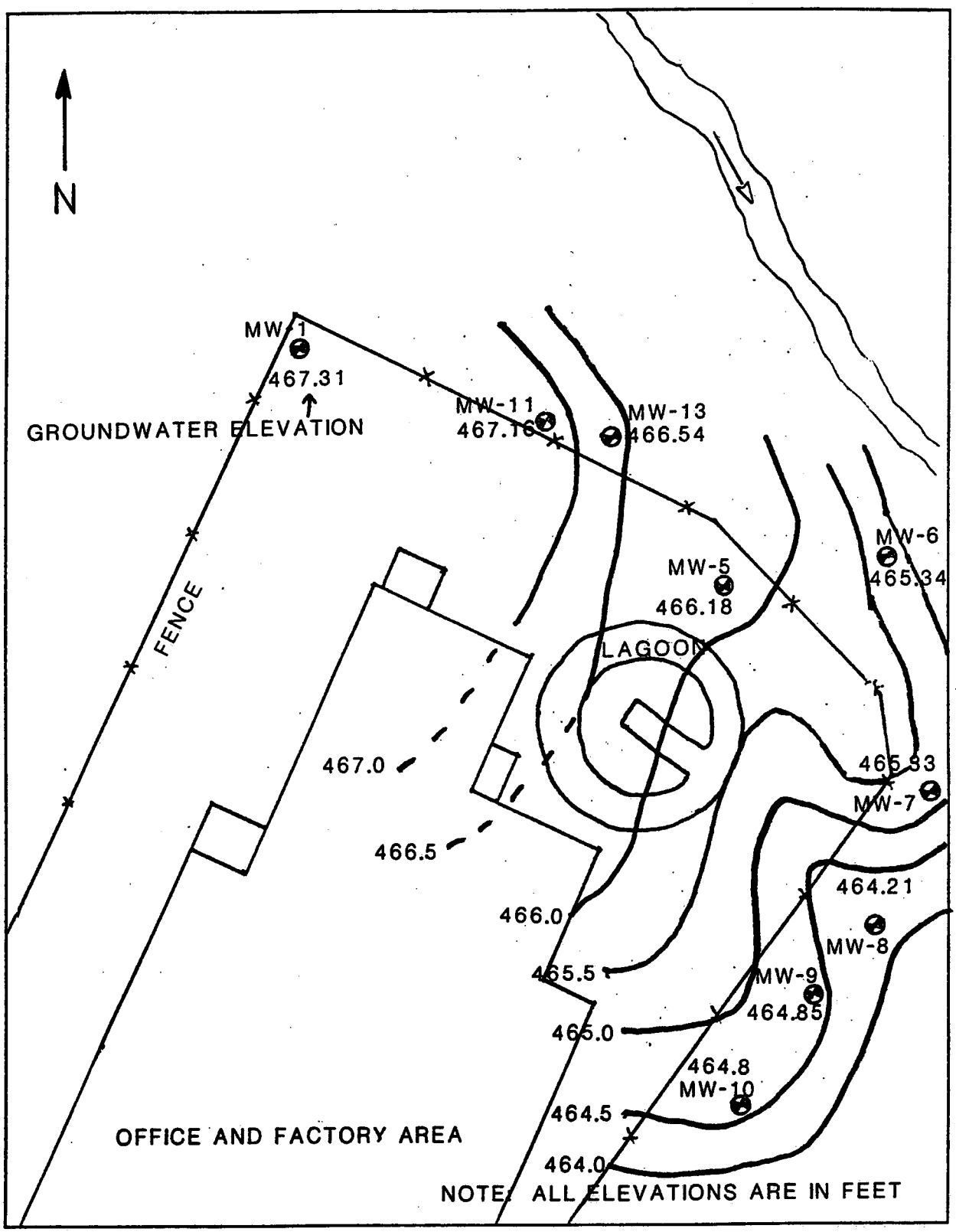
4. Air Survey

Air quality surveys were conducted with a PID during the site reconnaissance and sampling activities in accordance with appropriate health and safety precautions. A background level of 0.4 ppm was detected both on and around the site. No detectable levels of organic contaminants above background were registered on the meter.

E. CONCLUSIONS

All terms of the Phase II investigation for C&D Power Systems have been completed. Enough data has been collected to prepare a final HRS score.

The Phase II investigation shows that presently there is no evidence of contamination or migration of contaminants from the site. Hence the site does not have an adverse impact on the environment. Because the process wastes disposed into the lagoon contained fluorides and were not analyzed, further investigations with respect to this compound would be warranted.



GROUNDWATER FLOW MAP
C & D BATTERIES

FIGURE IV-1
GIBBS & HILL INC.

SCALE (FEET)

0 100 200

TABLE IV-1 - ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES - VOLATILES, SEMI-VOLATILES, PESTICIDES, AND PCBs
(All data in micrograms/liter)

C&D BATTERIES

Compound	GW-6	GW-7	GW-8	GW-9	GW-11	GW-14	Field Blank	Trip Blank	Method Blank
Methylene chloride	9 B	8 B	12 B	14 B	25 B	13 B	9 B	8 B	15
Tetrachloroethene	ND	ND	ND	10	ND	ND	ND	ND	ND
Acetone	4 BJ	4 BJ	9 BJ	8 BJ	20 B	7 BJ	6 BJ	3 BJ	16
Toluene	ND	ND	ND	ND	9	3 J	ND	ND	ND
Bis (2-ethylhexyl) phthalate	24 B	19 B	32 B	34 B	21 B	25 B	31 B	ND	27
4,4'-DDT	0.39 B	0.26 B	0.26 B	0.08 BJ	0.63	0.42 B	0.34 B	ND	0.09 J

- GW-14 duplicate of GW-6
- ND - Not detected
- B - Detected in a sample as well as in Method Blank
- J - Detected in concentration below Contract Required Quantitation Limit (CRQL)

TABLE IV-2 - ANALYTICAL RESULTS FOR GROUDWATER SAMPLES - TCL INORGANICS
(All data in micrograms/liter)

C&D BATTERIES

Analyte	GW-6	GW-7	GW-8	GW-9	GW-11	GW-14	Field Blank
Aluminum	3,250	6,500	2,500	10,100	1,100	3,400	ND
Cadmium	5	7	5	5	ND	6	ND
Calcium	8,270	21,900	29,500	35,900	14,900	9,060	ND
Chromium	ND	ND	ND	30	20	30	10
Copper	7 B	28	ND	40	ND	ND	ND
Iron	8,240	8,680	5,340	22,900	2,390	4,240	19 B
Lead	30.6	14.9	10.4	37	7.2	9.5	ND
Magnesium	2,950 B	5,400	4,300	8,500	4,220	2,620 B	ND
Manganese	388	5,240	306	1,440	126	199	ND
Potassium	3,900	250,000	13,000	15,000	450	3,200	200
Sodium	6,350	13,200	10,600	14,700	15,700	5,030	ND
Zinc	218	41	33.0	90.0	18.0 B	19.0 B	5.0

- NS - No standard
- MW-14 duplicate of MW-6
- ND - Not detected
- B - Less than CRQL, but greater than Instrument Detection Limit (IDL)

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TABLE IV-3 - ANALYTICAL RESULTS FOR SURFACE WATER - VOLATILES, SEMI-VOLATILES, PESTICIDES, AND PCBs
(All data in micrograms/liter)

C&D BATTERIES

Compound	SW-1	SW-2	Method Blank
Methylene chloride	11 B	13 B	15
Acetone	8 BJ	11 B	16
Bis (2-ethylhexyl) phthalate	9 BJ	13 B	27
4,4'-DDT	0.43 B	0.60 B	0.09 J

- B - Detected in a sample as well as in Method Blank
- J - Detected in concentration below CRQL

TABLE IV-4 - ANALYTICAL RESULTS FOR SURFACE WATER - TCL INORGANICS
(All data in micrograms/liter)

C&D BATTERIES

Analyte	Sample Number SW-1	Sample Number SW-2
Aluminum	4,920	124 B
Arsenic	8 B	ND
Barium	110 B	11 B
Beryllium	2 B	ND
Cadmium	9	6
Calcium	17,200	9,520
Chromium	30	20
Iron	44,600	127
Lead	26.7	11
Magnesium	4,300 B	2,290 B
Manganese	864	51
Potassium	670	32
Silver	12	6 B
Sodium	9,110	6,110
Vanadium	21 B	ND
Zinc	110	11 B

- NS - No standard
- ND - Not detected
- B - Less than CRQL, but greater than IDL

TABLE IV-5 - ANALYTICAL RESULTS FOR SEDIMENT - VOLATILES, SEMI-VOLATILES, PESTICIDES, AND PCBs (All data in micrograms/kg)

C&D BATTERIES

Compound	SS-1	SS-2	Method Blank
Methylene chloride	310 B	78 B	15
Acetone	170 B	110 B	19
2-Butanone	21 BJ	28 B	7 J
Phenanthrene	ND	6,800	ND
Fluoranthene	ND	13,000	ND
Pyrene	ND	9,500	ND
Benzo(a) anthracene	ND	5,300	ND
Chrysene	ND	5,500	ND
Bis (2-ethylhexyl) phthalate	ND	32,000 B	790
Benzo(b) fluoranthene	ND	6,900	ND
Benzo(k) fluoranthene	ND	6,300	ND
Benzo(a) pyrene	ND	5,900	ND
Ideno (1,2,3-od) pyrene	ND	3,800	ND
Benzo (g,h,i) perylene	ND	3,100	ND
Heptachlore	90 B	58 B	2 J
4,4'-DDT	120	280	ND

- ND - Not detected
- B - Detected also in Method Blank

TABLE IV-6 - ANALYTICAL RESULTS FOR SEDIMENT SAMPLES - INORGANICS
(All data in mg/kg)

C&D BATTERIES

Analyte	SS-1	SS-2
Aluminum	6,290	2,610
Antimony	36.8	21.3
Arsenic	8.8	1.3
Barium	125 B	59.2
Beryllium	2.4 B	0.51 B
Cadmium	ND	21.8
Calcium	1,760 B	4,000
Chromium	24	23
Cobalt	ND	5.3 B
Copper	11.2 B	52.9
Iron	37,400	9,400
Lead	29.9	1,290
Magnesium	1,640 B	1,860
Manganese	388	118
Potassium	208	ND
Silver	6.4 B	2.3 B
Sodium	2,770 B	997 B
Vanadium	20.8 B	10.4 B
Zinc	60.8	185

- ND - Not detected
- B - Less than CRQL, but greater than IDL

TABLE IV-7

FEDERAL AND STATE WATER STANDARDS AND GOALS

TCL VOLATILE ORGANICS		Contract Detection Limit [ug/l]	[A] EPA 40CFR141 MCL* [ug/l]	[A] EPA 40CFR141 MCLG** [ug/l]	[B] 10 NYCRR Subpart 5.1 MCL* [ug/l]	[C] 6 NYCRR 702 Standard [ug/l]	[D] 6 NYCRR 703 Standard [ug/l]
CAS Number	Compound						
74-87-3	Chloromethane	10			5	50	5
74-83-9	Bromomethane	10			5	50	5
75-01-4	Vinyl Chloride	10	2	0	2	50	2
75-00-3	Chloroethane	10			5	50	5
75-09-2	Methylene Chloride	5			5	50	5
67-64-1	Acetone	10			50	50	50
75-15-0	Carbon Disulfide	5			50	50	50
75-35-4	1,1-Dichloroethene	5	7	7	5	50	5
75-34-3	1,1-Dichloroethane	5			5	50	5
540-59-0	1,2-Dichloroethene (total)	5			10	50	10
67-66-3	Chloroform	5	[1]		[2]	0.2	[2]
107-06-2	1,2-Dichloroethane	5	5	0	5	0.8	5
78-93-3	2-Butanone	10			50	50	50
71-55-6	1,1,1-Trichloroethane	5	200	200	5	50	5
56-23-5	Carbon Tetrachloride	5	5	0	5	50	5
108-05-4	Vinyl Acetate	10			50	50	50
75-27-4	Bromodichloromethane	5	[1]		[2]	50	[2]
78-87-5	1,2-Dichloropropane	5			5	0.6	5
10061-01-5	cis-1,3-Dichloropropene	5			5	50	5
79-01-6	Trichloroethene	5	5	0	5	50	5
124-48-1	Dibromochloromethane	5	[1]		[2]	50	[2]
79-00-5	1,1,2-Trichloroethane	5			50	50	50
71-43-2	Benzene	5	5	0	50	50	ND[4]
10061-02-6	trans-1,3-Dichloropropene	5			5	50	5
75-25-2	Bromoform	5	[1]		[2]	50	[2]
108-10-1	4-Methyl-2-pentanone	10			5	50	5
591-78-6	2-Hexanone	10			5	50	5
127-18-4	Tetrachloroethene	5			5	50	5
79-34-5	1,1,2,2-Tetrachloroethane	5			5	50	5
108-88-3	Toluene	5			5	50	5
108-90-7	Chlorobenzene	5			5	20[3]	5
100-41-4	Ethylbenzene	5			5	50	5
100-42-5	Styrene	5			5	50	5
1330-20-7	Xylene (total)	5			15	50	15

[1] 100 ug/l for the total of these four compounds for community water systems serving greater than 10,000 persons and which add a disinfectant (oxidant) to the water.

[2] 100 ug/l for the total of these four compounds for community water systems.

[3] Sources of water for drinking, culinary or food processing purposes - aquatic life protection: 5 ug/l. Primary contact recreation: 5 ug/l.

[4] Not detectable by tests or analytical determinations referenced in 6 NYCRR 703.4.

* Maximum Contaminant Level - "maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system."

** Maximum Contaminant Level Goal - "nonenforceable health goal."

TABLE IV-7 (Contd)

FEDERAL AND STATE WATER STANDARDS AND GOALS

TCL SEMI-VOLATILE ORGANICS

CAS Number	Compound	Contract Detection Limit [ug/l]	[A] EPA 40CFR141 MCL* [ug/l]	[A] EPA 40CFR141 MCLG** [ug/l]	[B] 10 NYCRR Subpart 5.1 MCL* [ug/l]	[C] 6 NYCRR 702 Standard [ug/l]	[D] 6 NYCRR 703 Standard [ug/l]
108-95-2	Phenol	10			50	1	50
111-44-4	bis(2-Chloroethyl)ether	10			50	50	1
95-57-8	2-Chlorophenol	10			50	50	50
541-73-1	1,3-Dichlorobenzene	10			5	20[1]	5
106-46-7	1,4-Dichlorobenzene	10	75	75	5	30[1]	4.7
100-51-6	Benzyl alcohol	10			50	50	50
95-50-1	1,2-Dichlorobenzene	10			5	50[1]	4.7
95-48-7	2-Methylphenol	10			50	50	50
39638-32-9	bis(2-Chloroisopropyl)ether	10			50	50	50
106-44-5	4-Methylphenol	10			50	50	50
621-64-7	N-Nitroso-di-n-propylamine	10			50	50	50
67-72-1	Hexachloroethane	10			50	50	50
98-95-3	Nitrobenzene	10			50	30	50
78-59-1	Isophorone	10			50	50	50
88-75-5	2-Nitrophenol	10			50	50	50
105-67-9	2,4-Dimethylphenol	10			50	50	50
65-85-0	Benzoic acid	50			50	50	50
111-91-1	bis(2-Chloroethoxy)methane	10			50	50	50
120-83-2	2,4-Dichlorophenol	10			50	0.3	50
120-82-1	1,2,4-Trichlorobenzene	10			5	10[1]	5
91-20-3	Naphthalene	10			50	10	50
106-47-8	4-Chloroaniline	10			50	50	50
87-68-3	Hexachlorobutadiene	10			5	0.5	5
59-50-7	4-Chloro-3-methylphenol	10			50	50	50
91-57-6	2-Methylnaphthalene	10			50	50	50
77-47-4	Hexachlorocyclopentadiene	10			50	1[2]	50
88-06-2	2,4,6-Trichlorophenol	10			50	50	50
95-95-4	2,4,5-Trichlorophenol	50			50	50	50
91-58-7	2-Chloronaphthalene	10			50	10	50
88-74-4	2-Nitroaniline	50			50	50	50
131-11-3	Dimethylphthalate	10			50	50	50
208-96-8	Acenaphthylene	10			50	50	50
606-20-2	2,6-Dinitrotoluene	10			50	50	50

[1] Sources of water for drinking, culinary or food processing purposes - aquatic life protection: 5 ug/l; primary contact recreation: 5 ug/l

[2] Sources of water for drinking, culinary or food processing purposes - aquatic life protection: 0.45 ug/l; primary contact recreation: 0.45 ug/l

[3] Sources of water for drinking, culinary or food processing purposes - aquatic life protection: 0.4 ug/l; primary contact recreation: 0.4 ug/l

* Maximum Contaminant Level - "maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system."

** Maximum Contaminant Level Goal - "nonenforceable health goal."

TABLE IV-7 (Contd)

FEDERAL AND STATE WATER STANDARDS AND GOALS

TCL SEMI-VOLATILE ORGANICS

CAS Number	Compound	Contract Detection Limit [ug/l]	[A] EPA 40CFR141 MCL* [ug/l]	[A] EPA 40CFR141 MCLG** [ug/l]	[B] 10 NYCRR Subpart 5.1 MCL* [ug/l]	[C] 6 NYCRR 702 Standard [ug/l]	[D] 6 NYCRR 703 Standard [ug/l]
99-09-2	3-Nitroaniline	50			50	50	50
83-32-9	Acenaphthene	10			50	20	50
51-28-5	2,4-Dinitrophenol	50			50	50	50
100-02-7	4-Nitrophenol	50			50	50	50
132-64-9	Dibenzofuran	10			50	50	50
121-14-2	2,4-Dinitrotoluene	10			50	50	50
84-66-2	Diethylphthalate	10			50	50	50
7005-72-3	4-Chlorophenyl-phenylether	10			50	50	50
86-73-7	Fluorene	10			50	50	50
100-01-6	4-Nitroaniline	50			50	50	50
534-52-1	4,6-Dinitro-2-methylphenol	50			50	50	50
86-30-6	N-Nitroso-diphenylamine	10			50	50	50
101-55-3	4-Bromophenyl-phenylether	10			50	50	50
118-74-1	Hexachlorobenzene	10			50	50	0.35
87-86-5	Pentachlorophenol	50			50	1[3]	21
85-01-8	Phenanthrene	10			50	50	50
120-12-7	Anthracene	10			50	50	50
84-74-2	Di-n-butylphthalate	10			50	50	50
206-44-0	Fluoranthene	10			50	50	50
129-00-0	Pyrene	10			50	50	50
85-68-7	Butylbenzylphthalate	10			50	50	50
91-94-1	3,3'-Dichlorobenzidine	20			50	50	50
56-55-3	Benzo(a)anthracene	10			50	50	50
218-01-9	Chrysene	10			50	50	50
117-81-7	bis(2-Ethylhexyl)phthalate	10			50	0.6	4.2
117-84-0	Di-n-octylphthalate	10			50	50	50
205-99-2	Benzo(b)fluoranthene	10			50	50	50
207-08-9	Benzo(k)fluoranthene	10			50	50	50
50-32-8	Benzo(a)pyrene	10			50	50	50
193-39-5	Indeno(1,2,3-cd)pyrene	10			50	50	50
53-70-3	Dibenzo(a,h)anthracene	10			50	50	50
191-24-2	Benzo(g,h,i)perylene	10			50	50	50

[1] Sources of water for drinking, culinary or food processing purposes - aquatic life protection: 5 ug/l; primary contact recreation: 5 ug/l

[2] Sources of water for drinking, culinary or food processing purposes - aquatic life protection: 0.45 ug/l; primary contact recreation: 0.45 ug/l

[3] Sources of water for drinking, culinary or food processing purposes - aquatic life protection: 0.4 ug/l; primary contact recreation: 0.4 ug/l

* Maximum Contaminant Level - "maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system."

** Maximum Contaminant Level Goal - "nonenforceable health goal."

TABLE IV-7 (Contd)

FEDERAL AND STATE WATER STANDARDS

TCL PESTICIDES AND PCB's		Contract Detection Limit [ug/l]	[A] EPA 40CFR141 MCL* [ug/l]	[B] 10 NYCRR Subpart 5.1 MCL* [ug/l]	[C] 6 NYCRR 702 Human [ug/l]	[C] 6 NYCRR 702 Aquatic [ug/l]	[C] 6 NYCRR 702 PCR** [ug/l]	[D] 6 NYCRR 703 Standard [ug/l]
CAS Number	Compound							
319-84-6	alpha-BHC	0.05			50	0.01	0.01	ND[2]
319-85-7	beta-BHC	0.05			50	0.01	0.01	ND[2]
319-86-8	delta-BHC	0.05			50	0.01	0.01	ND[2]
58-89-9	gamma-BHC (Lindane)	0.05	4	4	50	0.01	0.01	ND[2]
76-44-8	Heptachlor	0.05			0.009	0.001	0.001	ND[2]
309-00-2	Aldrin	0.05			0.001[1]	0.001[1]	0.001[1]	ND[2]
1024-57-3	Heptachlor epoxide	0.05			0.009	0.001	0.001	ND[2]
959-98-8	Endosulphan I	0.05			50	50	50	
60-57-1	Dieldrin	0.10			0.001[1]	0.001[1]	0.001[1]	ND[2]
72-55-9	4,4'-DDE	0.10			0.01	0.001	0.001	ND[2]
72-20-8	Endrin	0.10	0.2	0.2	0.2	0.002	0.002	ND[2]
33213-65-9	Endosulphan II	0.10			50	50	50	
72-54-8	4,4'-DDD	0.10			0.01	0.001	0.001	
1031-07-8	Endosulphan sulfate	0.10			50	50	50	
50-29-3	4,4'-DDT	0.10			0.01	0.001	0.001	ND[2]
53494-70-5	Endrin ketone	0.10			50	50	50	
72-43-5	Methoxychlor	0.5	100	50	35	0.03	0.03	35
5103-71-9	alpha-Chlordane	0.5			50	50	50	
5103-74-2	gamma-Chlordane	0.5			50	50	50	
8001-35-2	Toxaphene	1.0		5	50	50	50	ND[2]
12674-11-2	AROCLOR-1016	0.5			0.01	0.001	0.001	0.1
11104-28-2	AROCLOR-1221	0.5			0.01	0.001	0.001	0.1
11141-16-5	AROCLOR-1232	0.5			0.01	0.001	0.001	0.1
53469-21-9	AROCLOR-1242	0.5			0.01	0.001	0.001	0.1
12672-29-6	AROCLOR-1248	0.5			0.01	0.001	0.001	0.1
11097-69-1	AROCLOR-1254	1.0			0.01	0.001	0.001	0.1
11096-82-5	AROCLOR-1260	1.0			0.01	0.001	0.001	0.1

[1] 0.001 ug/l for the total of these two compounds.

[2] Not detectable by tests or analytical determinations referenced in 6 NYCRR 703.4.

* Maximum Contaminant Level - "maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system."

** Primary contact recreation and any other uses except as a source of water supply for drinking, culinary or food processing purposes.

FEDERAL AND STATE WATER STANDARDS

TCL INORGANICS

CAS Number	Analyte	Contract Detection Limit [ug/l]	[A] EPA 40CFR141 MCL* [ug/l]	[E] EPA 40CFR143 SMCL** [ug/l]	[B] 10 NYCRR Subpart 5.1 MCL* [ug/l]	[C] 6 NYCRR 702 Human [ug/l]	[C] 6 NYCRR 702 Aquatic [ug/l]	[C] 6 NYCRR 702 PCR*** [ug/l]	[D] 6 NYCRR 703 Standard [ug/l]
7429-90-5	Aluminum	200					100	100	
7440-36-0	Antimony	60							
7440-38-2	Arsenic	10	50		50	50	190	190	25
7440-39-3	Barium	200	1000		1000	1000			1000
7440-41-7	Beryllium	5					1100[2]	1100[2]	
7440-43-9	Cadmium	5	10		10	10	0.9[3]	0.9[3]	10
7440-70-2	Calcium	5000							
7440-47-3	Chromium	10	50		50	50	163[3]	163[3]	50
7440-48-4	Cobalt	50					5	5	
7440-50-8	Copper	25		1000	1000	200	9.2[3]	9.2[3]	1000
7439-89-6	Iron	100		300	300[1]	300	300	300	300[1]
7439-92-1	Lead	5	50		50	50	2.2[3]	2.2[3]	25
7439-95-4	Magnesium	5000				35000			
7439-96-5	Manganese	15		50	300[1]	300			300[1]
7439-97-6	Mercury	0.2	2		2	2			2
7440-02-0	Nickel	40					76.8[3]	76.8[3]	
7440-09-7	Potassium	5000							
7782-49-2	Selenium	5	10		10	10	1	1	10
7440-22-4	Silver	10	50		50	50	0.1	0.1	50
7440-23-5	Sodium	5000							
7440-28-0	Thallium	10					8	8	
7440-62-2	Vanadium	50					14	14	
7440-66-6	Zinc	20		5000	5000	300	30	30	5000
	Cyanide	10				100	5.2	5.2	

[1] If both are present, the total of both concentrations may not exceed 500 ug/l.

[2] For water with hardness greater than 75 ppm. Standard is 11 ug/l for water with hardness less than or equal to 75 ppm.

[3] For water with hardness of 75 ppm. See 6 NYCRR 702 for determination of standard for other hardnesses.

* Maximum Contaminant Level - "maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system."

** Secondary Maximum Contaminant Level - same definition as MCL except "not Federally enforceable but intended as guidelines for the States."

*** Primary contact recreation and any other uses except as a source of water supply for drinking, culinary or food processing purposes.

TABLE IV-7 (Contd)

STATE SOIL REGULATIONS

TCL INORGANICS

CAS Number	Analyte	[F] Common Range in Soil [mg/kg]	[G] 6 NYCRR Part 360 4.4 MC* [mg/kg]
7429-90-5	Aluminum		
7440-36-0	Antimony	2 - 10	
7440-38-2	Arsenic	1 - 50	
7440-39-3	Barium	100 - 3000	
7440-41-7	Beryllium	0.1 - 40	
7440-43-9	Cadmium	0.01 - 0.7	25
7440-70-2	Calcium	700 - 36000[1]	
7440-47-3	Chromium	1 - 1000	1000
7440-48-4	Cobalt	1 - 40	
7440-50-8	Copper	2 - 100	1000
7439-89-6	Iron	5000 - 50000[1]	
7439-92-1	Lead	2 - 200	1000
7439-95-4	Magnesium	1200 - 15000[1]	
7439-96-5	Manganese	200 - 10000[1]	
7439-97-6	Mercury	0.01 - 0.3	10
7440-02-0	Nickel	5 - 500	200
7440-09-7	Potassium	1700 - 33000[1]	
7782-49-2	Selenium	0.1 - 2	
7440-22-4	Silver	0.01 - 5	
7440-23-5	Sodium		
7440-28-0	Thallium		
7440-62-2	Vanadium	20 - 500	
7440-66-6	Zinc	10 - 300	2500
	Cyanide		

[1] Source: "The Nature and Properties of Soils," Buckman, H., Brady, N., Macmillan Co., New York, New York, 1969.

* "Maximum Concentration, ppm, dry weight basis."

TABLE IV-7 (Contd)

STATE SOIL REGULATIONS

TCL PESTICIDES AND PCB's		Contract Detection Limit [mg/kg]	[G] 6 NYCRR Part 360 4.4 MC* [mg/kg]
CAS Number	Compound		
319-84-6	alpha-BHC	0.008	
319-85-7	beta-BHC	0.008	
319-86-8	delta-BHC	0.008	
58-89-9	gamma-BHC (Lindane)	0.008	
76-44-8	Heptachlor	0.008	
309-00-2	Aldrin	0.008	
1024-57-3	Heptachlor epoxide	0.008	
959-98-8	Endosulphan I	0.008	
60-57-1	Dieldrin	0.016	
72-55-9	4,4'-DDE	0.016	
72-20-8	Endrin	0.016	
33213-65-9	Endosulphan II	0.016	
72-54-8	4,4'-DDD	0.016	
1031-07-8	Endosulphan sulfate	0.016	
50-29-3	4,4'-DDT	0.016	
53494-70-5	Endrin ketone	0.016	
72-43-5	Methoxychlor	0.08	
5103-71-9	alpha-Chlordane	0.08	
5103-74-2	gamma-Chlordane	0.08	
8001-35-2	Toxaphene	0.16	
12674-11-2	AROCLOR-1016	0.08	10[1]
11104-28-2	AROCLOR-1221	0.08	10[1]
11141-16-5	AROCLOR-1232	0.08	10[1]
53469-21-9	AROCLOR-1242	0.08	10[1]
12672-29-6	AROCLOR-1248	0.08	10[1]
11097-69-1	AROCLOR-1254	0.16	10[1]
11096-82-5	AROCLOR-1260	0.16	10[1]

[1] 10 mg/kg for "Total PCBs"

* "Maximum Concentration, ppm, dry weight basis."

FEDERAL AND STATE STANDARDS AND GOALS

NOTES TO REGULATIONS

[A] Environmental Protection Agency National Primary Drinking Water Regulations (as of 7/17/89)

Applied to results of all water sample analyses.

[B] Chapter 1 of Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York, Part 5, Drinking Water Supplies, Subpart 5-1, Public Water Supplies (as of 11/28/88)

Applied to results of drinking water sample analyses.

[C] Chapter 10 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, Division of Water Resources, Article 2, Part 702, Appendix 31, Ambient Water Quality Standards - "The standards adopted herein relate to the condition of waters as affected by the discharge of sewage, industrial wastes or other wastes." (as of 7/5/85)

For sources of water for drinking, culinary or food processing purposes and human life protection, unless otherwise noted.

Applied to results of surface water sample analyses for surface water that is not a source of drinking water.

[D] Chapter 10 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, Division of Water Resources, Article 2, Part 703.5(a)(2) and (3), Classes and quality standards for groundwaters - "The purpose of these classes, quality standards, and effluent standards and/or limitations is to prevent pollution of groundwaters and to protect the groundwaters for use as a potable water." (as of 7/5/85)

Applied to results of all groundwater sample analyses regardless of groundwater use.

[E] Environmental Protection Agency National Secondary Drinking Water Regulations (as of 9/26/88)

Applied to results of all water sample analyses.

[F] Source: "Review of In-Place Treatment Techniques for Contaminated Surface Soils," Volume 2, EPA-540/2-84-0036, November 1984, except as noted.

Applied to results of soil sample analyses.

[G] Chapter 360 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, Solid Waste Management Facilities, Section 360-4.4(a), "Sewage sludge and septage destined for land application" (as of 12/31/88)

Applied to results of soil and sediment sample analyses.

V. FINAL APPLICATION OF HAZARD RANKING SYSTEM

A. NARRATIVE SUMMARY

The C&D Batteries site is located on Route 209 in Huguenot, Orange County, New York. The inactive industrial disposal system consists of a lagoon, approximately 150 feet in diameter and 15 feet deep, located 75 feet northwest of the plant building. The plant is in the Neversink River Valley about 4 miles northeast of the City of Port Jervis. Presently, the site is owned by C&D Charter Power Systems. Groundwater is used as a source of drinking water for a nonmunicipal community water system. The total population served by groundwater wells from the aquifer of concern within a 3-mile radius is 3,636. There are no freshwater wetlands within a 1-mile radius. The tributary D-1-7 of the Neversink River is approximately 150 feet from the site.

The site received wastewater containing various chemicals including fluorides, silicates, aluminum, carbon deposits, and heavy metals.

Contamination of groundwater and surface water was not detected during the Phase II investigation. Lead, iron, and manganese were the only TCL-metals detected above the NYSDEC water quality standards.

Fifteen organic compounds were found in the sediment samples. The source of this contamination remains unclear and cannot be positively attributed to the site.

B. SITE LOCATION MAP

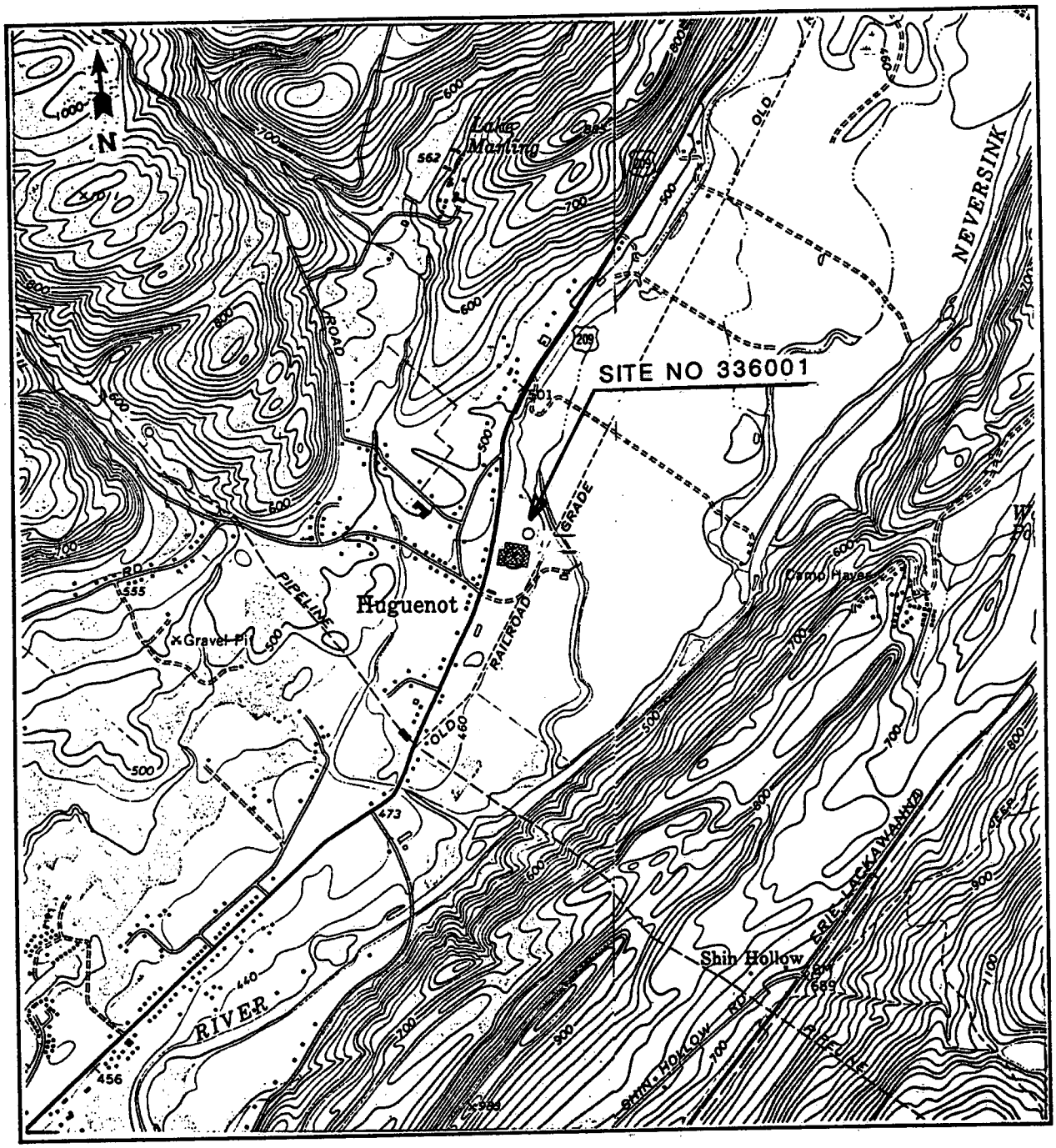


FIGURE V-1

COORDINATES:

LONGITUDE: 41° 25' 10"

LATITUDE: 74° 37' 45"

1000 0 1000 2000

SCALE (FEET)

SITE LOCATION MAP
SITE: C & D BATTERIES

MAP SOURCE:
USGS MAP PORT JERVIS NORTH QUAD
USGS MAP OTISVILLE QUAD
7.5 MINUTE SERIES (1969 EDITION)

GIBBS & HILL, INC.

C. UPDATED HRS WORKSHEETS

Facility name: C&D Batteries

Location: Town of Huguenot, Orange County

EPA Region: II

Person(s) in charge of the facility: C&D Charter Power Systems

Name of Reviewer: A. Kostic Date: 9/22/89

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

C&D Batteries site is inactive and fenced off to the general public. The site was once used for the disposal of industrial wastes by the previous owner, a black and white television tube manufacturer.

Scores: S_M = 0.00 (S_{gw} = 0.00 S_{sw} = 0.00 S_a = 0.00)

S_{FE} = N/A

S_{DC} = 0.00

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 (3)	2	6	6	
Net Precipitation	0 1 (2) 3	1	2	3	
Permeability of the Unsaturated Zone	0 1 2 (3)	1	3	3	
Physical State	0 1 2 (3)	1	3	3	
	Total Route Characteristics Score		14	15	
3 Containment	0 1 2 (3)	1	3	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	(0) 3 6 9 12 15 18	1	0	18	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
	Total Waste Characteristics Score		0	26	
5 Targets					3.5
Ground Water Use	0 1 2 (3)	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 / 12 16 18 (20) / 24 30 32 (35) 40	1	35	40	
	Total Targets Score		44	49	
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5			0.00	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = 0.00			

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
Physical State	0 1 2 (3)	1	3	3	
	Total Route Characteristics Score		11	15	
3 Containment	(0) 1 2 3	1	0	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	(0) 3 6 9 12 15 18	1	0	18	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
	Total Waste Characteristics Score		0	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score		6	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0.00	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} = 0.00			

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	5.1
Date and Location: 1/18/89, C&D Charter Power Systems, Huguenot, NY					
Sampling Protocol: N/A					
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	(0) 1 2 3	1	0	3	
Toxicity	(0) 1 2 3	3	0	9	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
	Total Waste Characteristics Score		0.00	20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 (18) 21 24 27 30	1	18	30	
Distance to Sensitive Environment	(0) 1 2 3	2	0	6	
Land Use	0 1 2 (3)	1	3	3	
	Total Targets Score		21	39	
4 Multiply 1 x 2 x 3			0.00	35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a = 0.00			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	0.00	0.00
Surface Water Route Score (S_{sw})	0.00	0.00
Air Route Score (S_a)	0.00	0.00
$S_{gw}^2 + S_{sw}^2 + S_a^2$		0.00
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		0.00
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		0.00

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} = N/A			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

*S_{FE} is scored only if a Fire Marshal has certified that the site is a fire and explosion threat or field observation documented a fire and explosion threat. Since neither of these is true, S_{FE} is not scored

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0) 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	(0) 1 2 3	1	0	3	8.2
3 Containment	(0) 15	1	0	15	8.3
4 Waste Characteristics Toxicity	(0) 1 2 3	5	0	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 (1) 2 3 4 5	4	4	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			4	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0.00	21,600	
7 Divide line 6 by 21,600 and multiply by 100	S_{DC} = 0.00				

FIGURE 12
DIRECT CONTACT WORK SHEET

D. UPDATED HRS DOCUMENTATION RECORDS

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: C&D Batteries (Presently C&D Charter Power Systems, Inc.)

LOCATION: Route 209, Huguenot, New York

DATE SCORED: August 18, 1989

PERSON SCORING: Albert Longoria and Alex Kostic

PRIMARY SOURCE(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.):

Site visit, site representative interview, NYSDEC files, and groundwater, surface water, and sediment analyses

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

Sa - no air sampling data available

COMMENTS OR QUALIFICATIONS:

None

GROUNDWATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

None. There is no analytical evidence of an observed release. Three organic compounds were detected in groundwater samples, but less than three times concentrations found in method or field blank. Several metals were detected in downgradient wells, but less than ten times concentrations found in the upgradient well [1].

Rationale for attributing the contaminants to the facility:

N/A

Score = 0

* * *

2 ROUTE CHARACTERISTICS

<u>Depth to Aquifer of Concern</u>

Name/description of aquifer(s) of concern:

The Neversink Valley Sand and Gravel Aquifer [11]

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

Depth of water table ranged from 18.92 feet to 29.00 feet. Seasonal level variations were not determined [3].

Depth from the ground surface to the lowest point of waste disposal/storage:

The lagoon is 15 feet deep [3]

18.92 ft. - 15 ft. = 3.92 ft.

Score = 3

<u>Net Precipitation</u>

Mean annual or seasonal precipitation (list months for seasonal):

43 inches [2]

Mean annual lake or seasonal evaporation (list months for seasonal):

28 inches [2]

Net precipitation (subtract the above figures):

15 inches [2]

Score = 2

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Sand and gravel with occasional lenses of silt and clay [3].

Permeability associated with soil type:

$6x10^{-3}$ cm/sec. [5]

Score = 3

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Liquids [6]

Score = 3

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Lagoon - no liner or leachate control present [6]

Method with highest score:

No liner or leachate control

Score = 3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

None. Three organic compounds and twelve inorganics were found in the groundwater samples. However, these contaminants could not be attributed to the site [1].

Compound with highest score:

None

Score = 0

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

None

Basis of estimating and/or computing waste quantity:

There is no analytical evidence of an observed release. Contaminants found in the groundwater samples could not be attributed to the site [1]. No documentation of waste quantity has been obtained [6].

Score = 0

5 TARGETS

Groundwater Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Drinking water (private wells) and industrial uses (cooling water and process water)[7 and 17]

Score = 3

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

Location of nearest drinking water well is in the Town of Huguenot [8].

Distance to above well or building:

Approximately 100 feet [8]

Score = 4

Population Served by Groundwater Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Private wells	3,435	
Painted Apron Village	16	
Fairlawn Mobile Village	60	
Huguenot Estates	125	[7, 8, and 13]
Total	3,636	

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

No irrigation is being done within a 3-mile radius [12]

Total population served by ground water within a 3-mile radius (see breakdown by well above):

3,636 is the total population served by groundwater within a 3-mile radius

Score = 4

Matrix score = 35

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

None. There is no analytical evidence of an observed release. The organic compounds found in the surface water samples were less than five times the concentrations in the method blank. No hazardous inorganics were detected in the surface water samples [1].

Rationale for attributing the contaminants to the facility:

N/A

Score = 0

* * *

2 ROUTE CHARACTERISTICS

<u>Facility Slope and Intervening Terrain</u>

Average slope of facility in percent:

Less than 1 percent [8]

Name/description of nearest downslope surface water:

Tributary D-1-7 to the Neversink River

Average slope of terrain between facility and above-cited surface water body in percent:

Facility is a closed basin [19]

Score = 0

Is the facility located either totally or partially in surface water?

No [19]

Score = 0

Is the facility completely surrounded by ares of higher elevation?

Yes [19]

1-Year, 24-Hour Rainfall in Inches

2.5 inches [2]

Score = 2

Distance to Nearest Downslope Surface Water

Less than 150 feet [4, 8]

Score = 3

Physical State of Waste

Liquid [6]

Score = 3

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

The approximately 15-foot deep lagoon was constructed in gravel, and its seepage capabilities allowed not more than 2 feet of standing liquid on the bottom of the lagoon [16].

Method with highest score:

Sound diking, and no erosion evident [2].

Score = 0

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

There is no analytical evidence of surface water contamination or migration of contaminants from the site to the nearest surface water body (Tributary D-1-7) [1].

Compound with highest score:

N/A

Score = 0

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

None

Basis of estimating and/or computing waste quantity:

All wastewaters were conveyed to the lagoon (zero containment score) [2].

Score = 0

* * *

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

The Neversink River and its tributaries where they pass through the site are class B (primary contact recreation and any other uses except water supply for drinking)[D.2].

Score = 2

Is there tidal influence?

No

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland if 2 miles or less:

N/A

Distance to 5-acre (minimum) freshwater wetland if 1 mile or less:

None [14]

Distance to critical habitat of an endangered species or national wildlife refuge if 1 mile or less:

None. However, there are records of copperhead and timber rattlesnake, a state-threatened species in the vicinity of the site.

Score = 0

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or a 1 mile (static water bodies) downstream of the hazardous substances and population served by each intake:

None. Water supply intake for Port Jervis city water is located upgradient from the site [7].

Score = 0

Computation of land area irrigated by above-cited intake(s) and conversion of population (1.5 people per acre):

No known land irrigation is occuring [12]

Total population served:

None

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes measured in stream miles:

N/A

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

No evidence of an observed release has been documented or obtained. Field measurements taken with a PID indicated no readings above background levels.

Date and location of detection of contaminants:

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

Score = 0

* * *

2 WASTE CHARACTERISTICS

<u>Reactivity and Incompatibility</u>

Most reactive compound:

N/A

Score = 0

Most incompatible pair of compounds:

N/A

<u>Toxicity</u>

Most toxic compound:

N/A

Score = 0

Hazardous Waste Quantity

Total quantity of hazardous waste:

No documentation of waste quantity has been obtained. Field measurements taken with a PID indicated no readings above background level [6].

Score = 0

Basis of estimating and/or computing waste quantity:

N/A

Score = 0

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used - give population and indicate how determined:

0 to 4 mi	0 to 1 mi	0 to 1/2 mi	0 to 1/4 mi

4,726 persons (based on 3.8 persons per residence) [18]. The highest score was obtained for a 0 to 4 mile radius [2].

Score = 18

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland if 2 miles or less:

N/A [14]

Distance to 5-acre (minimal) freshwater wetland if 1 mile or less:

None [14]

Score = 0

Distance to critical habitat of an endangered species, if 1 mile or less:

None. However, there are records of copperhead and timber rattlesnakes, state-threatened species, in the vicinity of the site [9].

Score = 0

Land Use

Distance to commercial/industrial area if 1 mile or less:

On-site

Score = 3

Distance to national or state park, forest, or wildlife reserve if 2 miles or less:

None [10]

Score = 0

Distance to residential area if 2 miles or less:

Approximately 100 feet [8]

Score = 3

Distance to agricultural land in production within past 5 years if 1 mile or less:

None [12]

Score = 0

Distance to prime agricultural land in production within past 5 years if 2 miles or less:

None [12]

Score = 0

Is an historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

None [10]

Score = 0

FIRE AND EXPLOSION*

1 CONTAINMENT

Hazardous substances present:

Hazardous substances and fire and/or explosion hazard contaminants were not detected in the groundwater analyses. There is no record of hazardous waste disposal at the facility [1].

Type of containment if applicable:

N/A

* * *

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

N/A

Ignitability

Compound used:

N/A

Reactivity

Most reactive compound:

N/A

Incompatibility

Most incompatible pair of compounds:

N/A

---

*S_{FE} is scored only if a Fire Marshal has certified that the site is a fire and explosion threat or field observation documented a fire and explosion threat. Since neither is true, S_{FE} is not scored.

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

N/A

Basis of estimating and/or computing waste quantity:

N/A

* * *

3 TARGETS

Distance to Nearest Population

N/A

Distance to Nearest Building

N/A

Distance to Sensitive Environment

Distance to wetlands:

N/A

Distance to critical habitat:

N/A

Land Use

Distance to commercial/industrial area if 1 mile or less:

N/A

Distance to national or state park, forest, or wildlife reserve if 2 miles or less:

N/A

Distance to residential area if 2 miles or less:

N/A

Distance to agricultural land in production within past 5 years if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years if 2 miles or less:

N/A

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

N/A

Population Within 2-Mile Radius

N/A

Buildings Within 2-Mile Radius

N/A

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

No documentation of direct contact causing injury to humans or animals [6]

Score = 0

2 ACCESSIBILITY

Describe type of barrier(s):

A chain-link fence (with locked gate) completely surrounds the facility and restricts entry at all times.

Score = 0

* * *

3 CONTAINMENT

Type of containment if applicable:

No hazardous substances at the site.

Score = 0

* * *

4 WASTE CHARACTERISTICS

<u>Toxicity</u>

Compounds evaluated:

None

Compound with highest score:

N/A

Score = 0

5 TARGETS

Population within 1-Mile Radius

832 persons (based on 3.8 persons per dwelling for dwellings) [8 and 18].

Score = 1

Distance to critical habitat (of endangered species)

None

Score = 0

HRS DOCUMENTATION REFERENCES

HRS DOCUMENTATION REFERENCES

If the entire reference is not available for public review in the EPA regional files on this site, indicate where the references may be found:

Ref. No	Description of Reference	Page
1	Chemical Analyses, Tables IV-1 through IV-6	V-33
2	USEPA HRS Users Manual (HW-10), 1984	V-39
3	Conductivity Test Data	B-4
4	Site Reconnaissance, Appendix A	A-1
5	Permeability In Situ Tests, Appendix B	B-1
6	Letter [D.3]	D-9
7	NYS Atlas of Community Water System Sources, 1982	V-40
8	USGS Quadrangle Map, Figure I-1	I-4
9	Letter: C. Reschke, NYSDEC Wildlife Resources Center to N. Hinsey, G&H, May 2, 1989	V-44
10	Department of Interior, National Park Service Printouts, 1989	V-47
11	M. H. Frimpter, Groundwater Resources [D.18]	D-159
12	Telephone Conversation Record	V-49
13	Telephone Conversation Record	V-50
14	Freshwater Wetlands Map	V-51
15	G&H Interview Acknowledgement Form	D-70
16	Letter: DOH to Empire Tube Corp., D.2	D-5
17	Telephone Conversation Record, D.22	D-173
18	House Count	V-52
19	Historic Literature, D.2	D-5
20	NYSDOH Notice of Consolidated Hearing, D.6	D-14

TABLE IV-1 - ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES - VOLATILES, SEMI-VOLATILES, PESTICIDES, AND PCBs
(All data in micrograms/liter)

C&D BATTERIES

Compound	GW-6	GW-7	GW-8	GW-9	GW-11	GW-14	Field Blank	Trip Blank	Method Blank
Methylene chloride	9 B	8 B	12 B	14 B	25 B	13 B	9 B	8 B	15
Tetrachloroethene	ND	ND	ND	10	ND	ND	ND	ND	ND
Acetone	4 BJ	4 BJ	9 BJ	8 BJ	20 B	7 BJ	6 BJ	3 BJ	16
Toluene	ND	ND	ND	ND	9	3 J	ND	ND	ND
Bis (2-ethylhexyl) phthalate	24 B	19 B	32 B	34 B	21 B	25 B	31 B	ND	27
4,4'-DDT	0.39 B	0.26 B	0.26 B	).08 BJ	0.63	0.42 B	0.34 B	ND	0.09 J

- GW-14 duplicate of GW-6
- ND - Not detected
- B - Detected in a sample as well as in Method Blank
- J - Detected in concentration below Contract Required Quantitation Limit (CRQL)

TABLE IV-2 - ANALYTICAL RESULTS FOR GROUDWATER SAMPLES - TCL INORGANICS
(All data in micrograms/liter)

C&D BATTERIES

Analyte	GW-6	GW-7	GW-8	GW-9	GW-11	GW-14	Field Blank
Aluminum	3,250	6,500	2,500	10,100	1,100	3,400	ND
Cadmium	5	7	5	5	ND	6	ND
Calcium	8,270	21,900	29,500	35,900	14,900	9,060	ND
Chromium	ND	ND	ND	30	20	30	10
Copper	7 B	28	ND	40	ND	ND	ND
Iron	8,240	8,680	5,340	22,900	2,390	4,240	19 B
Lead	30.6	14.9	10.4	37	7.2	9.5	ND
Magnesium	2,950 B	5,400	4,300	8,500	4,220	2,620 B	ND
Manganese	388	5,240	306	1,440	126	199	ND
Potassium	3,900	250,000	13,000	15,000	450	3,200	200
Sodium	6,350	13,200	10,600	14,700	15,700	5,030	ND
Zinc	218	41	33.0	90.0	18.0 B	19.0 B	5.0

- NS - No standard
- MW-14 duplicate of MW-6
- ND - Not detected
- B - Less than CRQL, but greater than Instrument Detection Limit (IDL)

TABLE IV-3 - ANALYTICAL RESULTS FOR SURFACE WATER - VOLATILES, SEMI-VOLATILES, PESTICIDES, AND PCBs
(All data in micrograms/liter)

C&D BATTERIES

Compound	SW-1	SW-2	Method Blank
Methylene chloride	11 B	13 B	15
Acetone	8 BJ	11 B	16
Bis (2-ethylhexyl) phthalate	9 BJ	13 B	27
4,4'-DDT	0.43 B	0.60 B	0.09 J

- B - Detected in a sample as well as in Method Blank
- J - Detected in concentration below CRQL

TABLE IV-4 - ANALYTICAL RESULTS FOR SURFACE WATER - TCL INORGANICS
(All data in micrograms/liter)

C&D BATTERIES

Analyte	Sample Number SW-1	Sample Number SW-2
Aluminum	4,920	124 B
Arsenic	8 B	ND
Barium	110 B	11 B
Beryllium	2 B	ND
Cadmium	9	6
Calcium	17,200	9,520
Chromium	30	20
Iron	44,600	127
Lead	26.7	11
Magnesium	4,300 B	2,290 B
Manganese	864	51
Potassium	670	32
Silver	12	6 B
Sodium	9,110	6,110
Vanadium	21 B	ND
Zinc	110	11 B

- NS - No standard
- ND - Not detected
- B - Less than CRQL, but greater than IDL

TABLE IV-5 - ANALYTICAL RESULTS FOR SEDIMENT - VOLATILES, SEMI-VOLATILES, PESTICIDES, AND PCBs (All data in micrograms/kg)

C&D BATTERIES

Compound	SS-1	SS-2	Method Blank
Methylene chloride	310 B	78 B	15
Acetone	170 B	110 B	19
2-Butanone	21 BJ	28 B	7 J
Phenanthrene	ND	6,800	ND
Fluoranthene	ND	13,000	ND
Pyrene	ND	9,500	ND
Benzo(a) anthracene	ND	5,300	ND
Chrysene	ND	5,500	ND
Bis (2-ethylhexyl) phthalate	ND	32,000 B	790
Benzo(b) fluoranthene	ND	6,900	ND
Benzo(k) fluoranthene	ND	6,300	ND
Benzo(a) pyrene	ND	5,900	ND
Ideno (1,2,3-od) pyrene	ND	3,800	ND
Benzo (g,h,i) perylene	ND	3,100	ND
Heptachlore	90 B	58 B	2 J
4,4'-DDT	120	280	ND

- ND - Not detected
- B - Detected also in Method Blank

TABLE IV-6 - ANALYTICAL RESULTS FOR SEDIMENT SAMPLES - INORGANICS
(All data in mg/kg)

C&D BATTERIES

Analyte	SS-1	SS-2
Aluminum	6,290	2,610
Antimony	36.8	21.3
Arsenic	8.8	1.3
Barium	125 B	59.2
Beryllium	2.4 B	0.51 B
Cadmium	ND	21.8
Calcium	1,760 B	4,000
Chromium	24	23
Cobalt	ND	5.3 B
Copper	11.2 B	52.9
Iron	37,400	9,400
Lead	29.9	1,290
Magnesium	1,640 B	1,860
Manganese	388	118
Potassium	208	ND
Silver	6.4 B	2.3 B
Sodium	2,770 B	997 B
Vanadium	20.8 B	10.4 B
Zinc	60.8	185

- ND - Not detected
- B - Less than CRQL, but greater than IDL

REF. 2

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual

(HW-10)

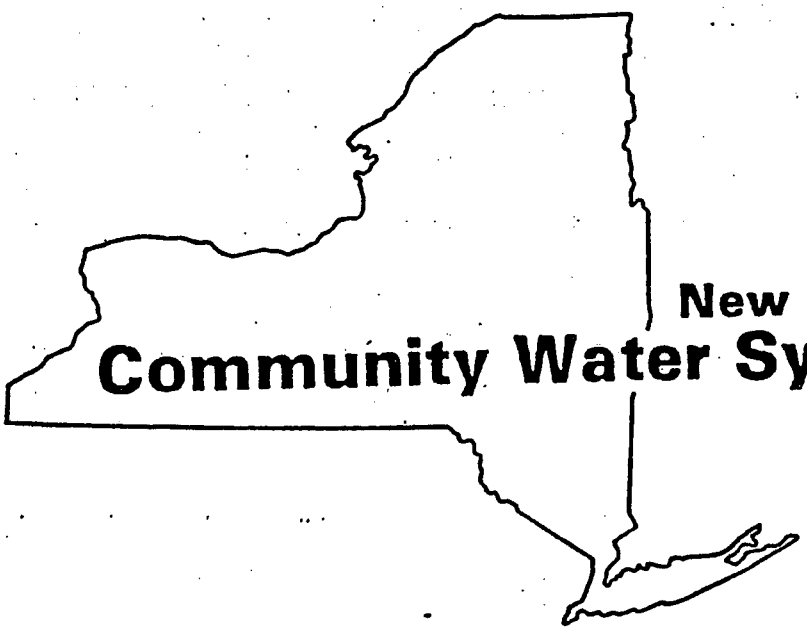
Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

V-39

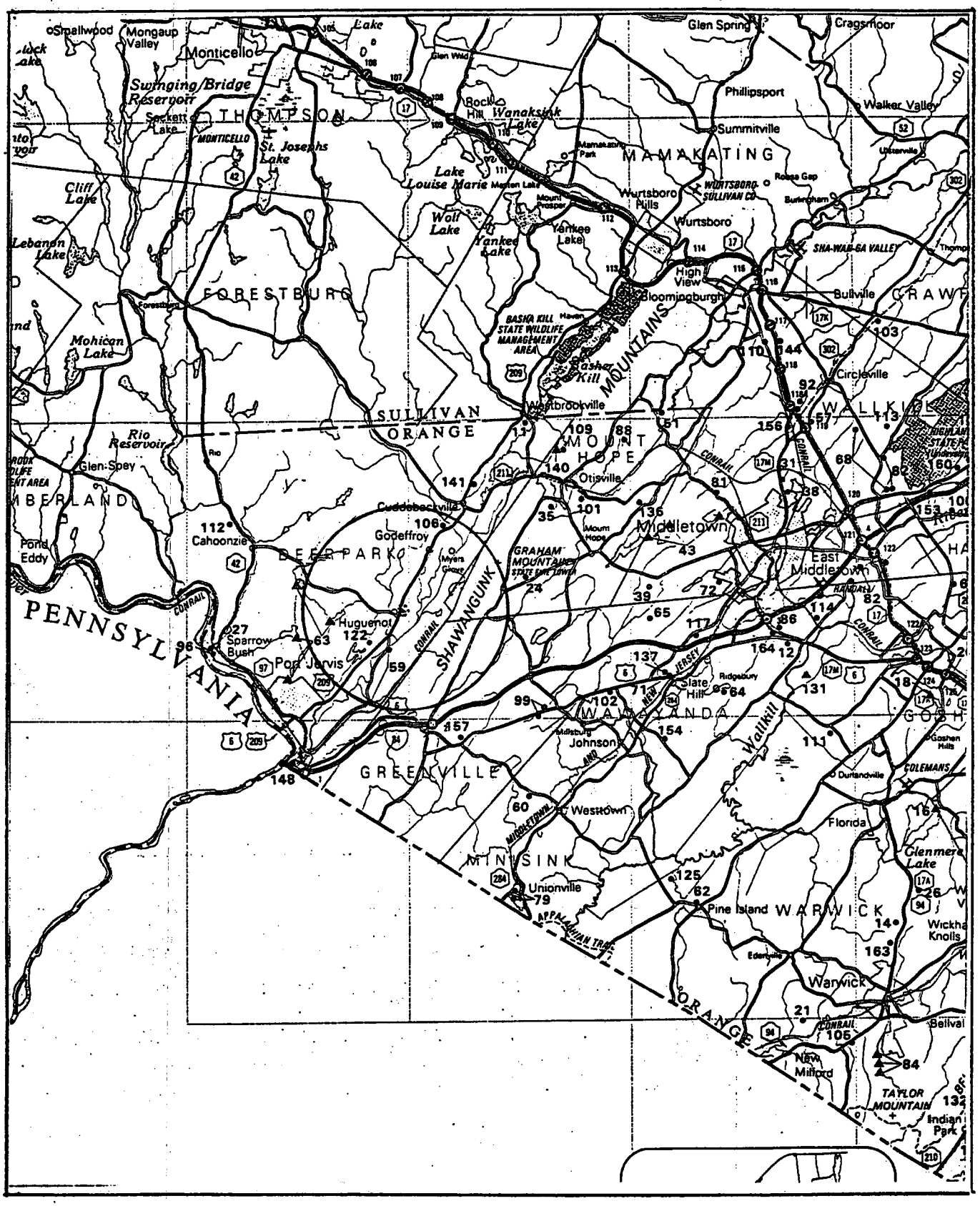
REF. 7



New York State Atlas of Community Water System Sources 1982

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

LOCATION OF COMMUNITY WATER SYSTEM SOURCES-1982



NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

SCALE 1:250,000

5 0 5 MILES

NORTH

ORANGE COUNTY

ORANGE COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
1	Arden Farms Dairy Company	60	Echo Lake
2	Arrow Park, Inc.	NA	Wells
3	Beaver Dam Lake Development	400	Wells
4	Bellvale Park Water District	100	Wells
5	Blooming Grove Water District #1	2000	Wells
6	Blooming Grove Water District #2 Oxford Heights	80	Wells
7	Blooming Grove Water District #3	200	Wells
8	Chester Village	1910	Walton Lake, Wells
9	Cornwall-on-Hudson, Main Line	3164	Alec Meadow Reservoir, Arthurs, Tamarac, & Sphagnum Ponds
10	Cornwall-on-Hudson, Mt. Line	300	Upper Reservoir
11	Deer Park Manor	400	Wells
12	Denton Hills	130	Wells
13	Drew Road Association	50	Wells
14	Eurich Heights	200	Wells
15	Fleetwood Manor - Holiday Park	225	Wells
16	Florida Water Works	2000	Glenmere Lake
17	Forest Knolls	400	Wells
18	Goshen Village	5000	Goshen Reservoir
19	Goshen Water District #2 (Arcadia Hills)	750	Wells
20	Goshen Water District #1	500	Wells
21	Greater Display & Wire Forming	75	Wells
22	Greenwood Lake Village	2150	Wells
23	Harriman Village	1800	Wells
24	Hidden Valley Estates	200	Wells
25	Highland Falls Village	5500	Bog Meadow Pond
26	Hill Lake Estates	40	Wells
27	Hillcrest Heights	25	Wells
28	Hillside Acres	80	Wells
29	Indian Kill	2000	Indian Kill
30	J. Ludlam Water Supply	15	Wells
31	Keystone Park	150	Wells
32	King Tract	200	Wells
33	Kiryas Joel	2500	Wells
34	Lake Hill Farms Water District	360	Wells
35	Lake Linda	30	Wells
36	Lake Vue Park Water District	160	Wells
37	Lakewood Homes	60	Wells
38	Lincoln Park	32	Wells
39	Lorelei Lake	150	Wells
40	Maple Brook	160	Wells
41	Maybrook Village	2500	Wells
42	Merriwold Water Company	1600	Wells
43	Middletown City	21454	Monhagen, Highland & Shawangunk Lakes
44	Monroe Hills Estates	120	Wells
45	Monroe Village	6000	Lake Mombasha
46	Monroe Water District #1 (High Ridge)	NA	Lake Mombasha
47	Monroe Water District #2 (Sterling Manor)	90	Wells
48	Montgomery Village	2320	Wells
49	Mountain Lodge Park Development	1600	Wells
50	Mountain View Estates	250	Wells
51	New Vernon Estates	150	Wells
52	New Windsor Consolidated Water District	12000	Wells
53	Newburgh City	23488	Lake Washington
54	Newburgh Consolidated Water District	9000	Chadwick Lake
55	Orange Lake Development Company	20	Wells
56	Orchard Hill	174	Wells
57	Orchard Hill Water District	80	Wells
58	Orchard Lake Park	250	Wells
59	Painted Apron Village	16	Wells
60	Pheasant Hill	150	Wells
61	Pine Bush Water District	1500	Wells
62	Pine Island Water Company	50	Wells
63	Port Jervis City	8500	Reservoirs
64	Ridgebury Lake Acres	60	Wells
65	Robin Meadows	126	Wells
66	Rural Ridge Water District	300	Wells
67	Scheller Water Supply	25	Wells
68	Scotchtown Park	180	Wells
69	Scott Acres	120	Wells
70	Skyview Hills	450	Wells

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
71	Slate Hill (Green)	40	Wells
72	Squirrel Hills	78	Wells
73	Star Industries	NA	Wells
74	Stone Hedge Water Company	160	Wells
75	Sugar Loaf Hills	125	Wells
76	Surrey Meadow Water District	900	Wells
77	Tappan Homes	536	Wells
78	Tuxedo Park Village	1800	We-Wah Lake
79	Unionville Village	576	Wells
80	Walden Village	5500	Wells
81	Wallkill Heights	48	Wells
82	Wallkill Water District #1	12000	Wells
83	Walton Lake Estates	500	Wells
84	Warwick Village	4320	Warwick Reservoir
85	Washingtonville Village	NA	Wells
86	Wawayanda Development Corporation	125	Wells
87	West Side Greenwood Lake Water District	1800	Wells
88	Whitlock Farms	120	Wells
89	Wickham Village	1100	Wells
90	Woodbury Water District #1	4500	Wells
91	Woodbury Water District #6 (Amdor Park)	360	Wells
92	Woodland Acres	100	Wells
	Non-Municipal Community		
93	Bear Mountain State Park (Rockland Co, Page 74)		Turkey Lake, Queensboro Lake
94	Bel-Air Trailer Park	59	Wells
95	Brittany Terrace	150	Wells
96	Butler Mobile Homes	200	Wells
97	Campbell Water Supply	35	Wells
98	Candlestick Mobile Park	324	Wells
99	Castle High Trailer Park	130	Wells
100	Crystal Run Village Inc.	100	Wells
101	Dicker's Bungalow Colony	30	Wells
102	Dombal Trailer Park	70	Wells
103	Donovan's Place	20	Wells
104	Doodletown Water System (Rockland Co, Page 74)		Queensboro Lake
105	Fair Mead Farm	15	Wells
106	Fairlawn Mobile Village	60	Wells
107	Falkirk Hospital	45	Wells
108	Fancher Trailer Court	55	Wells
109	Federal Correctional Institute	500	Wells
110	Gillen Trailer Park	16	Wells
111	Goshen Center for Boys	250	Wells
112	Greenwood Mobile Home Court	125	Wells
113	H A Harris, Inc.	25	Wells
114	Hampton Realty Trailer Park	23	Wells
115	Hill and Dale Mobile Home Park	55	Wells
116	Hilltop Haven Trailer Park	NA	Wells
117	Hogencamps Trailer Court	6	Wells
118	Holiday Mobile Park Inc.	225	Wells
119	Hudson Valley Trailer Park	25	Wells
120	Hudson View Terrace (Lower Section)	120	Wells
121	Hudson View Terrace (Upper Section)	150	Wells
122	Huguenot Estates East	125	Wells
123	K & M Mobile Home Park	46	Wells
124	Kaylake Lodge	30	Wells
125	Kimball Farms	83	Wells
126	Lage Country Homes	NA	Wells
127	Lamplight Village	260	Wells
128	M G U Realty	NA	Wells
129	Mary Crest Convent	40	Wells
130	Mason's Trailer Park & Apartments	60	Wells
131	Mid-Hudson Psychiatric Center	400	Reservoir
132	Mid-Lake Park	15	Wells
133	Mid-Orange Correctional Facility	1200	Wells
134	Montgomery Nursing Home	100	Wells
135	Mt Airy Trailer Court	240	Wells

D.9

New York State Department of Environmental Conservation
Information Services
Wildlife Resources Center
Delmar, New York 12054

Thomas C. Jorling
Commissioner

May 2, 1989

Norman W. Hinsey
Gibbs and Hill, Inc.
11 Penn Plaza
New York, N.Y. 10001-2059

Dear Mr. Hinsey:

We have reviewed the Significant Habitat Program and the Natural Heritage Program files with respect to fourteen (14) inactive hazardous waste sites in various counties in New York State.

We have identified the following potential concerns:

1. Cardwell Condenser Corp. Site - Bay Shore West quadrangle -
There is a designated Significant Coastal Fish and Wildlife Habitat (SCFWH) in Great South Bay. The Great South Bay SCFWH has records of Least tern (Sterna antillarum), a federally-listed endangered species. A brief report on this site is enclosed. This site is officially designated under the New York State Department of State's Coastal Management Program; coastal consistency requirements have to be met for projects that might adversely impact the habitat, whether or not the project is actually within the designated area. More information regarding this designation and the consistency requirements may be obtained by contacting:
Mr. Thomas Hart, NYS Dept. of State, Coastal Management Program
162 Washington Ave., Albany, N.Y. 12231 (518) 474-3642

There are four historic records of rare plants in this area. (see enclosed list for occurrences on the Bay Shore West quadrangle). None of these species are federally-listed.

2. Site 356013, Poughkeepsie quadrangle -
The Poughkeepsie Deepwater Habitat SCFWH is officially designated under the Coastal Management Program described above. The same Coastal consistency requirements apply to this site. This SCFWH includes habitat for Shortnose sturgeon (Acipenser brevirostrum), a federally-listed endangered species. A brief report describing this site is enclosed.

There are three historic records of rare plants in this area (see enclosed list for occurrences on the Poughkeepsie quadrangle). None of these species are federally-listed.

New York Natural Heritage Program is supported in part
by The Nature Conservancy

3. Hercules site, Kingston East quadrangle -
This site is within a deer wintering area (Sig. Hab. #DC56-101), a significant wildlife habitat.

4. Site 344028, Sloatsburg Quad -
There is a 1977 report of bog turtle (Clemmys muhlenbergii), a state-endangered species, within 1 mile of the site (see enclosed list).

5. Cornwall Landfill, site #336011, Cornwall quadrangle -
There are three significant wildlife habitats in the vicinity, a waterfowl concentration area, a raptor concentration area, and an anadromous fish concentration area. (see enclosed list).

6. Site 314062, Copake quadrangle -
There is an occurrence of a rare wetland community, a rich shrub fen, in the vicinity (see enclosed list).

7. C & D Batteries, site #336001, Port Jervis North quadrangle -
There are records of copperhead (Agkistrodon contortrix, Heritage rank of S3) and timber rattlesnake (Crotalus horridus, ranked S3), a state-threatened species in the vicinity. There are also significant occurrences of two communities: Appalachian calcareous rocky summit and hemlock northern hardwood forest (see enclosed list).

8. East Greenbush Landfill, East Greenbush quadrangle -
The Papscanee Marsh and Creek SCFWH is officially designated under the Coastal Management Program described above. The same coastal consistency requirements apply to this site. A brief report describing this site is enclosed.

We did not identify any other potential impacts on endangered, threatened or special concern wildlife species, rare animal or natural community occurrences, or other significant habitats on or adjacent to the other six sites.

Our files are continually growing as new habitats and occurrences of rare species and communities are discovered. In most cases, site-specific or comprehensive surveys for plant and animal occurrences have not been conducted. For these reasons, we can only provide data which have been assembled from our files. We cannot provide a definitive statement on the presence or absence of species, habitats or natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

This response applies only to known occurrences of rare animals, plants and natural communities and/or significant wildlife habitats. You should contact our regional offices(s), Division of Regulatory Affairs, at the address(es) enclosed for information regarding any regulated areas or permits that may be required (e.g., regulated wetlands) under State law.

If this project is still active one year from now we recommend that you contact us again so that we may update this response.

If we can be of further assistance please do not hesitate to contact us.

Sincerely,

Carol Reschke

Carol Reschke
Community Ecologist
NY Natural Heritage Program

CR:jp
Encs.
cc: T. Hart
R. Miller
A. Breisch
H. Knoch, Reg. 1
G. Cole, Reg. 3
Q. VanNortwich, Reg. 4
J. Proud, Reg. 7

D.10

WASO-34
(May 1987)

DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
TRANSMITTAL STATEMENT

From: (In reply refer to) 413	National Register of Historic Places National Park Service, P.O. Box 37127 Department of the Interior Washington, D.C. 20013-7127	**Date** 31 March 1989

To:

Norman Hinsey
Gibbs and Hill
11 Penn Plaza
New York, NY 10001

☐ We are enclosing:

☐ We are sending under separate cover:

NUMBER	ITEM	DESCRIPTION
2	Print-outs, Properties listed and determined eligible for listing in New York	

COMMENTS

If we can be of further assistance, please call us at 202-343-9559.

NAME AND TITLE	SIGNATURE
Debbie Kraybill	Debbie Kraybill

V-47

Highland Falls

Church of the Holy Innocents and Rectory — Listed 11/23/82
[Hudson Highlands MRA]
112 Main St.
Reference No. 82001213

First Presbyterian Church of Highland Falls — Listed 11/23/82
[Hudson Highlands MRA]
140 Main St.
Reference No. 82001216

Highland Falls Railroad Depot — Listed 11/23/82
[Hudson Highlands MRA]
Dock Rd.
Reference No. 82001218

Highland Falls Village Hall — Listed 11/23/82
[Hudson Highlands MRA]
Main St.
Reference No. 82001219

House at 116 Main Street — Listed 11/23/82
[Hudson Highlands MRA]
116 Main St.
Reference No. 82001221

House at 37 Center Street — Listed 11/23/82
[Hudson Highlands MRA]
37 Center St.
Reference No. 82001220

Parry House — Listed 11/23/82
[Hudson Highlands MRA]
Michel Rd.
Reference No. 82001223

Pine Terrace — Listed 11/23/82
[Hudson Highlands MRA]
Main St.
Reference No. 82001224

Squirrels, The — Listed 11/23/82
[Hudson Highlands MRA]
225 Main St.
Reference No. 82001226

Stonihurst — Listed 11/23/82
[Hudson Highlands MRA]
NY 218
Reference No. 82001228

Webb Lane House — Listed 11/23/82
[Hudson Highlands MRA]
Webb Lane
Reference No. 82001230

Highland Mills

Smith Clove Meetinghouse — Listed 01/11/74
Quaker Rd.
Reference No. 74001290

Highlands

Cragston Dependencies — Listed 11/23/82
[Hudson Highlands MRA]
NY 218
Reference No. 82001214

Storm King Highway — Listed 11/23/82
[Hudson Highlands MRA]
NY 218
Reference No. 82001229

Maybrook

Blake, John, House (The Blake House) — Listed 12/20/84
924 Homestead Ave.
Reference No. 84000521

Middletown

Oliver Avenue Bridge — Listed

REF. 12

Telephone Conversation Record

Date: 8/23/89

Time: 14:28

Call by: A. Longoria (Name) of Gibbs & Hill, Inc. (Company)

Answer by: Mr. Jim Garvey (Name) of Supervisor of Town of Deer Park, N.Y. (Company)

Contract No: 5583-067

Subject discussed: Irrigation of land in the Towns of Deerpark and Hvegonot, N.Y. within a three mile radius of the C&D Charter Power Systems Plant

---

SUMMARY OF DISCUSSION, DECISIONS AND COMMITMENTS

Mr. Garvey informed A. Longoria that there is no known irrigation occurring throughout the area. The Town of Deerpark does not have any documentation of irrigation taking place in the Region. In addition, Mr. Garvey in response to agricultural land use, informed A. Longoria that there was only one active farm in the region. The farm is located on Route 209 along the border of Port Jervis. The farm is situated more than 3 miles from the site.

wpenvr1:911

REF. 13

Telephone Conversation Record

Date: 8/01/89

Time: 1400 Hrs.

Call by: A. Longoria (Name) of Gibbs & Hill, Inc. (Company)

Answer by: Mr. Decker (Name) of Port Jervis City Water Department (Company)

Contract No: 5583-067

Subject discussed: Boundaries of Water Department and people serviced

---

SUMMARY OF DISCUSSION, DECISIONS AND COMMITMENTS

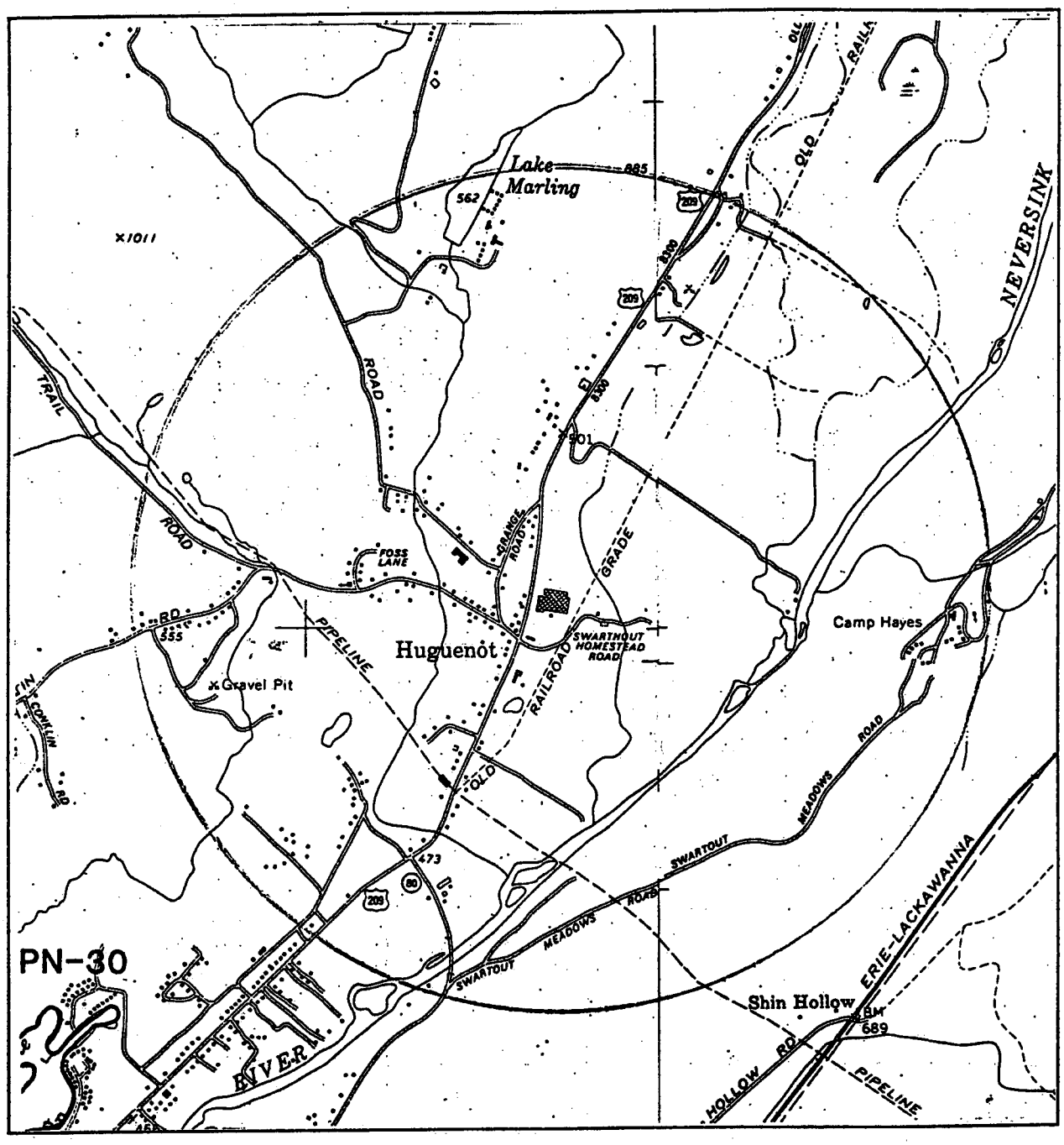
Mr. Decker informed A. Longoria that the Port Jervis City Water Department only service people in Port Jervis. The boundary is the Port Jervis city limits. People outside this area use private wells. The Water Department draws water from reservoir nos. 1,2&3 north of the city. Approximately 8,800 people are served.

wpenvr1:911

REF. 14

FRESHWATER WETLANDS MAP

C&D BATTERIES SITE



FIGURE

NEW YORK STATE

DEPARTMENT OF TRANSPORTATION

PORT JERVIS NORTH QUADRANGLE

SECOND EDITION - 1973

COORDINATES:

LONGITUDE: 41° 25' 10"

LATITUDE: 74° 37' 45"

SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

GIBBS & HILL, INC.

USGS HOUSE COUNT

C&D BATTERIES

Radius	Quadrant I	Quadrant II	Quadrant III	Quadrant IV	Subtotal	Population
0-¼	0	20	18	0	38	
¼-½	0	33	38	0	71	
½-1	7	32	36	110	110	
0-1	7	85	92	35	219	832
1-2	100	25	189	4	318	
0-2					537	2,040
2-3	156	26	137	48	367	
0-3					904	3,435
						+ 201 (3)
						3,636
3-4	142	54	28	63	287	1,090
0-4						4,726

Notes:

1) The number of residences for each radius is determined by overlaying a coordinates system onto a USGS 7.5-minute topographic map.

2) A multiplier of 3.8 persons per residence is used to determine population in accordance with Mitre Model 1985.

3) Population using noncommunity water system [7]

Painted Apron Village:	16
Fairlawn Mobile Village:	60
Huguenot Estates:	125
Total	201

E. EPA SITE INSPECTION FORM

Site Inspection Report

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NYD	064337298

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
C&D Batteries (C&D Charter Power Systems)	Route 209

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Huguenot	NY	12746	Orange		

09 COORDINATES — LATITUDE 41 25 10" — LONGITUDE 74 37 45"

10 TYPE OF OWNERSHIP (Check one): ☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 07 / 21 / 88 (MONTH DAY YEAR)

02 SITE STATUS: ☐ ACTIVE ☒ INACTIVE

03 YEARS OF OPERATION: BEGINNING YEAR / ENDING YEAR — X UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply): ☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ☐ E. STATE ☒ F. STATE CONTRACTOR Gibbs & Hill, Inc. (Name of firm) ☐ G. OTHER

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Alex Kostic	Senior Environmental Engineer	Gibbs & Hill	(212) 216-6630

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Albert Longoria	Geologist	Gibbs & Hill	(212) 216-6633
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Michael Langan	Env. Project Engr.	C&D Charter Power Systems Route 209, Huguenot, NY	(914) 856-4466
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	0900 hrs.	Partly cloudy and hot around 80°F

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Norman Hinsey	Gibbs & Hill, Inc.	(212) 216-7839

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Alex Kostic		Gibbs & Hill	212/216-7839	8 / 21 / 89 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NYD	064337298

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS _____
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☒ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS	unknown		
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Fluorides		Conveyed into lagoon	unknown	

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Site reconnaissance
NYSDEC and NYSDOH files

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 3,636 — 04 NARRATIVE DESCRIPTION

Site has no liner and is upgradient to local groundwater recharge area.

01 ☒ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Site has a sound diking system and is approximately 200 feet from surface water.

01 ☒ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

No detection of contamination of air using PID during G&H site reconnaissance and sampling event.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None noted during site reconnaissance and sampling.

01 ☒ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

No direct contact has been documented causing injury to humans or animals. A chain link fence completely surrounds the facility and restricts entry at all times.

01 ☒ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres) — 04 NARRATIVE DESCRIPTION

Waste liquids were conveyed into lagoon. No soil analyses were obtained by G&H. Soil sample analyses conducted in 1982 showed high concentration of fluoride.

01 ☒ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 3,636 — 04 NARRATIVE DESCRIPTION

Within a 3-mile radius.

01 ☒ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☒ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

No worker exposure/injury has been documented.

01 ☒ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: None — 04 NARRATIVE DESCRIPTION

None known. Site is closed.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None noted or reported.

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

None noted or reported.

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None noted or reported.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None

01 ☒ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None noted or reported.

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or noted.

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or noted.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None noted or reported.

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

Most obvious threat would be to groundwater supply and population utilizing groundwater.

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

Site reconnaissance
NYSDEC and NYSDOH files

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☒ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☒ I. OTHER Lagoon (Specify)	unknown	

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☒ H. OTHER Neutralization (Specify)

05 OTHER

- ☒ A. BUILDINGS ON SITE

06 AREA OF SITE

Approx. 10 (Acres)

07 COMMENTS

The spent hydrofluoric acid was conveyed to two neutralization tanks and neutralized with lime.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☒ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

The lagoon was constructed in gravel, and its seepage capabilities allowd not more than 2 feet of standing liquid on the bottom of the lagoon.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

Site fenced in.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Site reconnaissance
NYSDEC and NYSDOH files

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NYD	064337298

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as appropriate)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☐
NON-COMMUNITY	C. ☐	D. ☒

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☒	F. ☐

03 DISTANCE TO SITE

A. _____ (mi)
B. 0.019 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 3,636

03 DISTANCE TO NEAREST DRINKING WATER WELL 0.019 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
18.67 (ft)	southeast	18.67 (ft)	unknown (gpd)	☒ YES ☐ NO

09 DESCRIPTION OF WELLS (Including average, depth, and location relative to population and buildings)

No data available

10 RECHARGE AREA

☒ YES ☐ NO

COMMENTS: The largest source of recharge is the Neversink River.

11 DISCHARGE AREA

☐ YES ☒ NO

COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☒ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Tributary D-1-7 of the Neversink River	☐	Approx. 0.028 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 832 NO. OF PERSONS	B. 2,040 NO. OF PERSONS	C. 3,636 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.019 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 537

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.019 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Within a 3-mile radius, 3,805 people are known to be using groundwater supplies.

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NYD	064337298

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☒ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☒ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
10-150 (ft)	unknown (ft)	unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
15 (in)	2.5 (in)	1.0 %	northeast	1.0 %

09 FLOOD POTENTIAL

SITE IS IN N/A YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. N/A (mi)

OTHER: B. none (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

Less than 1 (mi)

ENDANGERED SPECIES: Copperhead snake

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. adj. (mi)	B. 0.07 (mi)	C. none (mi)	D. none (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site is in the Neversink River Valley about 4 miles northeast of the City of Port Jervis and the confluence of the Neversink and Delaware Rivers. The site is situated on a fairly flat area which slopes down steeply on the northeast towards tributary D-1-7 of the Neversink River. A residential neighborhood to the west is upgradient of the site.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	6	H2M Lab	Available
SURFACE WATER	2	H2M Lab	Available
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER Sediment	2	H2M Lab	Available

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
pH	Groundwater samples
Conduction by PID	No readings above background
measurements	

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____ (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Gibbs & Hill, Inc., 11 Penn Plaza, New York, NY 10001

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gibbs & Hill sampling logs

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II. CURRENT OWNER(S)				PARENT COMPANY (if applicable)			
01 NAME C&D Charter Power Systems		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Route 209		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY Huguenot	06 STATE NY	07 ZIP CODE 12746		12 CITY	13 STATE	14 ZIP CODE	
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		12 CITY	13 STATE	14 ZIP CODE	
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		12 CITY	13 STATE	14 ZIP CODE	
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		12 CITY	13 STATE	14 ZIP CODE	

III. PREVIOUS OWNER(S) (List most recent first)			IV. REALTY OWNER(S) (if applicable; list most recent first)		
01 NAME Empire Tube Corporation		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Route 209		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY Huguenot	06 STATE NY	07 ZIP CODE 12746	05 CITY	06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gibbs & Hill site reconnaissance report

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II. CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
01 NAME: C&D Charter Power Systems	02 D+B NUMBER		10 NAME: N/A	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.): Route 209	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY: Huguenot	06 STATE: NY	07 ZIP CODE: 12746	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)			PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)		
01 NAME: Empire Tube Corp.	02 D+B NUMBER		10 NAME: N/A	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.): Route 209	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY: Huguenot	06 STATE: NY	07 ZIP CODE: 12746	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gibbs & Hill site reconnaissance report

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER	
C&D Charter Power Systems		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
Route 209		
05 CITY	06 STATE	07 ZIP CODE
Huguenot	NY	12746

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
N/A			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
N/A			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II. PAST RESPONSE ACTIVITIES

01 ☒ A. WATER SUPPLY CLOSED — 02 DATE — 03 AGENCY
04 DESCRIPTION
No

01 ☒ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE — 03 AGENCY
04 DESCRIPTION
No

01 ☒ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE — 03 AGENCY
04 DESCRIPTION
No

01 ☒ D. SPILLED MATERIAL REMOVED — 02 DATE — 03 AGENCY
04 DESCRIPTION
No documentation of any action found

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE — 03 AGENCY
04 DESCRIPTION
No documentation of any action found

01 ☒ F. WASTE REPACKAGED — 02 DATE — 03 AGENCY
04 DESCRIPTION
NOne known

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE 1961-1974 — 03 AGENCY
04 DESCRIPTION
The sludge from the neutralization process was taken and dumped at an unknown location.

01 ☒ H. ON SITE BURIAL — 02 DATE — 03 AGENCY
04 DESCRIPTION
None known

01 ☒ I. IN SITU CHEMICAL TREATMENT — 02 DATE 1961-1974 — 03 AGENCY
04 DESCRIPTION
The wastewater was neutralized in neutralization tanks.

01 ☒ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE — 03 AGENCY
04 DESCRIPTION
None known

01 ☒ K. IN SITU PHYSICAL TREATMENT — 02 DATE — 03 AGENCY
04 DESCRIPTION
The wastewater was partially filtered by the bed of the lagoon.

01 ☒ L. ENCAPSULATION — 02 DATE — 03 AGENCY
04 DESCRIPTION
None known

01 ☒ M. EMERGENCY WASTE TREATMENT — 02 DATE — 03 AGENCY
04 DESCRIPTION
None known

01 ☒ N. CUTOFF WALLS — 02 DATE — 03 AGENCY
04 DESCRIPTION
None known

01 ☒ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE — 03 AGENCY
04 DESCRIPTION
None known

01 ☒ P. CUTOFF TRENCHES/SUMP — 02 DATE — 03 AGENCY
04 DESCRIPTION
None known

01 ☒ Q. SUBSURFACE CUTOFF WALL — 02 DATE — 03 AGENCY
04 DESCRIPTION
None known

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II PAST RESPONSE ACTIVITIES (Continued)

01 ☒ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☒ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☒ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☒ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☒ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☒ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☒ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☒ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☒ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☒ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Fenced, secured

01 ☒ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☒ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gibbs & Hill site reconnaissance
NYSDEC and NYSDOH files

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NYD	064337298

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

Presently, the cooling water discharge is conducted under SPDES permit, and the effluent is sampled and reported to the State on a regular basis.

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Gibbs & Hill site reconnaissance

EPA FORM 2070-13 (7-81)

APPENDIX A

WORK PLAN UPDATE

Work Plan Update

Phase II Investigation

C & D Batteries
Site No. 336001

Submitted to **NYSDEC**

January 10, 1989

Gibbs & Hill, Inc.

CONTENTS

		PAGE NO.
I.	DEC Work Plan	I-1
II.	Site Reconnaissance Report	II-1
III.	Site Sketch	III-1
IV.	Geophysical Report	IV-1
V.	Drilling Protocols	V-1
VI.	Sampling Protocols	VI-1
VII.	Health & Safety Plan	VII-1

APPENDICES:

A: Guidelines for Exploratory Boring, Monitoring Wells Installation, and Documentation of these Activities (Exhibit 3).

B: Gibbs & Hill Sampling Protocols.

C: Gibbs & Hill Health & Safety Plan.

I. DEC WORK PLAN

Work Plan

C & D Batteries

Cornwall, Orange County

Site No. 336001

General:

Based on this work plan for which there have already been regional and Central Office site visits and comments, a costing sheet is to be developed and attached by the consultant. The work plan and associated costs will be made part of this cost plus fixed fee contract with a limiting upset figure. Unless otherwise stated in this work plan, the work shall conform to the concepts of the Generic Work Plan -- State Superfund Program -- Phase II Investigations (Schedule 4, Exhibit 1) and Schedule 4, Exhibit 3, both of the contract document. As these latter documents are crucial to the proper field implementation of NYSDEC protocols, a copy of this work plan attached to Exhibits 1 and 3 of the contract must be taken to the field by the consultant's project manager during the Phase II field activities. The representative must display, through his actions, thorough familiarity with the provisions of the work plan and exhibits. Failure by the consultant's representative to present these documents upon NYSDEC request or demonstration of inadequate knowledge of their contents are both sufficient ground for NYSDEC to halt the Phase II field operations.

Introduction:

The C & D Batteries site is located on U.S. Highway 209 in Huguenot, New York (Figure 1). C & D Power Systems (formerly C & D Batteries), which is an active facility at the site, purchased the site from a manufacturer of television picture tubes that utilized an excavated disposal lagoon adjacent to the plant building for disposal of various industrial wastes.

Two reports entitled "Implementation of a Hydrogeologic Assessment Plan for the C & D Batteries Division Plant, Huguenot, New York" and "Supplementary Hydrogeologic Assessment Program for the C & D Batteries Division Plant, Huguenot, New York" has been prepared by Environmental Resources Management, Inc. (ERM) for C & D Power System. There are ten monitoring wells on site installed by ERM for C & D Power Systems.

The C & D Batteries site is located in the Neversink River Valley which is part of Valley and Ridge Physiographic province. This province is characterized by the presence of folded paleozoic sedimentary rocks that include sandstone, shale, and limestone. The long axis of the folds generally trend northeast-southwest, resulting in a marked parallelism of ridges oriented in this direction. According to the ERM reports based on well logs, the unconsolidated surficial materials consist of glacial outwash.

Objectives:

Since there is no Phase I investigation performed for this site, the scope of a Phase I investigation shall also be incorporated under this investigation. This will include collection, review and evaluation of all available data which will be incorporated into the Summary Report as prepared following completion of the Phase II investigation. Based on the collected information, if necessary, the scope of the Phase II work plan shall be revised. For the purpose of report preparation, the consultant is to compile all data available.

The objective of this Phase II investigation is to collect essential field information needed to adequately determine whether a significant threat to the environment exists, to prepare final HRS Scores and make recommendation for future actions at the site. Specifically, this will be accomplished by sampling and analysis of groundwater and surface water, soil, wastes and sediments (where any or all of these media are applicable).

Site Reconnaissance:

A site inspection was conducted by NYSDEC personnel on November 1, 1985. The purpose of the site inspection was to locate the proposed well and sampling locations. Based on the inspection, a site sketch was prepared showing the existing well locations (Figure 2).

Field Investigation:

The project has been subdivided into specific tasks. Table 1 briefly summarizes each task. From the existing information it seems that no additional wells will be necessary to accomplish the objective of this investigation. If detailed analysis of the existing data as well as the data to be collected indicates that additional wells or soil borings are necessary, the workplan will be modified by the consultant with the concurrence of NYSDEC.

Existing data on static water levels of monitoring wells shall be used for determination of groundwater flow direction. Based on the direction of groundwater flow, five to ten wells shall be selected for sampling with the approval of NYSDEC.

3. Sampling and Analysis:

Where required by NYSDEC, sampling and chemical analyses will be performed by the consultant. Field QA/QC Protocol for sample collection and for sample integrity from the field to the laboratory shall be submitted by the consultant. When sampling is requested, the consultant must follow the QA/QC and chain-of-custody protocols as referred to in the Generic Work Plan and as described in the New York State Contract Laboratory Protocols document.

Where dilution of any Phase II sample is to be done by the chemical analytical laboratory prior to analysis, NYSDEC is to be advised immediately. The concern is that a component of low concentration, but of significant environmental impact, could become so diluted that its presence in the final extract will not be detected.

During this contact, the NYSDEC chemist will discuss alternatives with the laboratory's chemist on how best to conduct the analysis. NYSDEC chemist in Mr. John Rankin, telephone (518) 457-3252.

Although a method or extra work may be agreed upon by both chemist, clearance for any extra cost must be obtained by the consultant from the NYSDEC contract manager. Such cost will be paid from the contingency amount in the contract, and clearance must be conformed by NYSDEC in writing.

Air monitoring, consisting of a perimeter survey with a photoionization instrument such as HNU or OVA shall occur upon arrival at the site. A survey within the boundary of the site shall follow the perimeter survey. This air monitoring is separate from monitoring that is part of the health and safety plan. If a source of air contamination is identified, the air should be sampled using appropriate equipment to determine the nature and concentration of the contaminant. Upwind air samples must also be analyzed at the same time. Wind direction must be continuously monitored and documented during any sampling and on site analysis of air samples.

Health and Safety Plan:

A site specific Health and Safety Plan must be developed and followed for each site. A copy of the Health and Safety Plan shall be submitted to NYSDEC.

For the purpose of costing the investigation, Level D protection is assumed. The health and safety precautions and procedures will conform to the consultant's generalized Health and Safety Plan. Should protective levels higher than Level D be required for any activity, the consultant shall prepare a site specific health and safety plan appropriate for the level of protection required.

Report Preparation:

Report preparation will involve analysis of the data as well as preparation of the text. Included in this task are the compilation and organization of the data, reduction of data, preparation of graphical representations, analysis, and calculations, and updating the HRS score for the site. The report shall follow the format detailed in the Generic Phase II Work Plan. Four copies of the draft report shall be submitted. After review by NYSDEC, any corrections are to be made by the consultant and fourteen copies of the final report are to be submitted. Draft and final reports must bear the stamp of a professional engineer in accordance with Article 49.

Table 1

Phase II Work Plan - Task Description

C & D Batteries #336001

Task	Tasks	Description of Task
II-A	Prepare and update work plan	Will be done by NYSDEC.
II-B	Conduct records search/data compilation	Review all available information.
II-C	Site reconnaissance	Has been done by NYSDEC.
II-F	Perform sampling and analysis	Refer to Table 2 and 3.
II-G	Conduct site assessment	A preliminary site contamination assessment will be conducted to complete the final HRS and HRS documentation records.
II-H	Report preparation	Prepare final report containing all available information, additional field data, final HRS and HRS documentation records and site assessments.
II-I	Project management	Project coordination, administration and reporting.

Table 2

Phase II Work Plan - Sampling Summaries

C & D Batteries #336001

Designation	Location
Groundwater	
Five to ten existing wells shall be selected with the approval of NYSDEC for sampling.	
Surface Water	
SW-1	Upstream sample from the creek.
SW-2	Downstream sample from the creek.
Sediment	
SW-1	Upstream sample from the creek.
SW-2	Downstream sample from the creek.
Lagoon	
If the lagoon is still in existence one composite sample will be taken from the water phase, and one from the sediment phase.	

NOTE: 1. Locations, aquifer screened, approximate boring depth listed are based on existing data. These criteria may change based on the results of the geophysical surveys and/or field conditions.

Table 3

Analyses - C & D Batteries #336001

Type of Sample	Type of Analysis(1)* HSL(2) Metals	HSL(3) Volatiles	HSL(4) Semi-Volatiles	HSL(5) Pesticides/ PCBs	Matrix Spike/ Duplicate (6)
Groundwater(7)	6	6	6	6	1/1
Surface Water	2	2	2	2	1/1
Sediment	2	2	2	2	1/1
Field Blank	1	1	1	1	
Trip Blank	-	1	-	-	

(1) Complete identification per NYSDEC Generic Work Plan, Section 3(b)(ii)(B). Field pH, conductivity and temperature measurements will be conducted on all water samples. Also pH, specific conductance, Chemical Oxygen Demand (COD), Total Dissolved Solids (TDS) and Total Suspended Solids (TSS) measurements will be made at the laboratory for all water samples.

(2) HSL Metals - Preparation and analysis of the 15 Task 1 and 9 Task 2 inorganic compounds using the specified CLP methods.

(3) HSL Volatiles - Preparation and analysis using the CLP specified GC/MS method for HSL purgeable organics plus a library search for and the quantification of any additional non-HSL compounds (the CLP requires the library search only for the 10 non-HSL compounds of largest apparent concentration).

(4) HSL Semi-Volatiles - Preparation and Analysis using the CLP specified GC/MS method for HSL Extractable Base/Neutral and Acid Organic compounds plus a library search for and the quantification of any additional non-HSL compounds (the CLP requires the library search only for the 20 non-HSL compounds of largest apparent concentration).

(5) HSL Pesticides/PCBs - Preparation and pre-extraction of the HSL organochloride pesticides and polychlorinated biphenyls using the CLP specified GC-ECD method.

(6) Superfund and Contract Laboratory Protocol, January 1985, requires at least one spiked sample analysis and one duplicate sample analysis from each group of samples of a similar matrix type for each case of samples or for each 20 samples received, whichever is more frequent.

(7) A duplicate groundwater sample must be obtained from a monitoring well chosen at random (or some other medium if wells are not available). That duplicate sample must not be identified as a duplicate to the laboratory, but must be assigned an identifier similar to other groundwater samples. The Bureau requires the blind analysis of a duplicate sample for each site by the laboratory, to confirm the integrity of all sampling and analytical activities.

--- Designates that samples are not to be analyzed for that parameter.

C4D - BATTERY # 36001

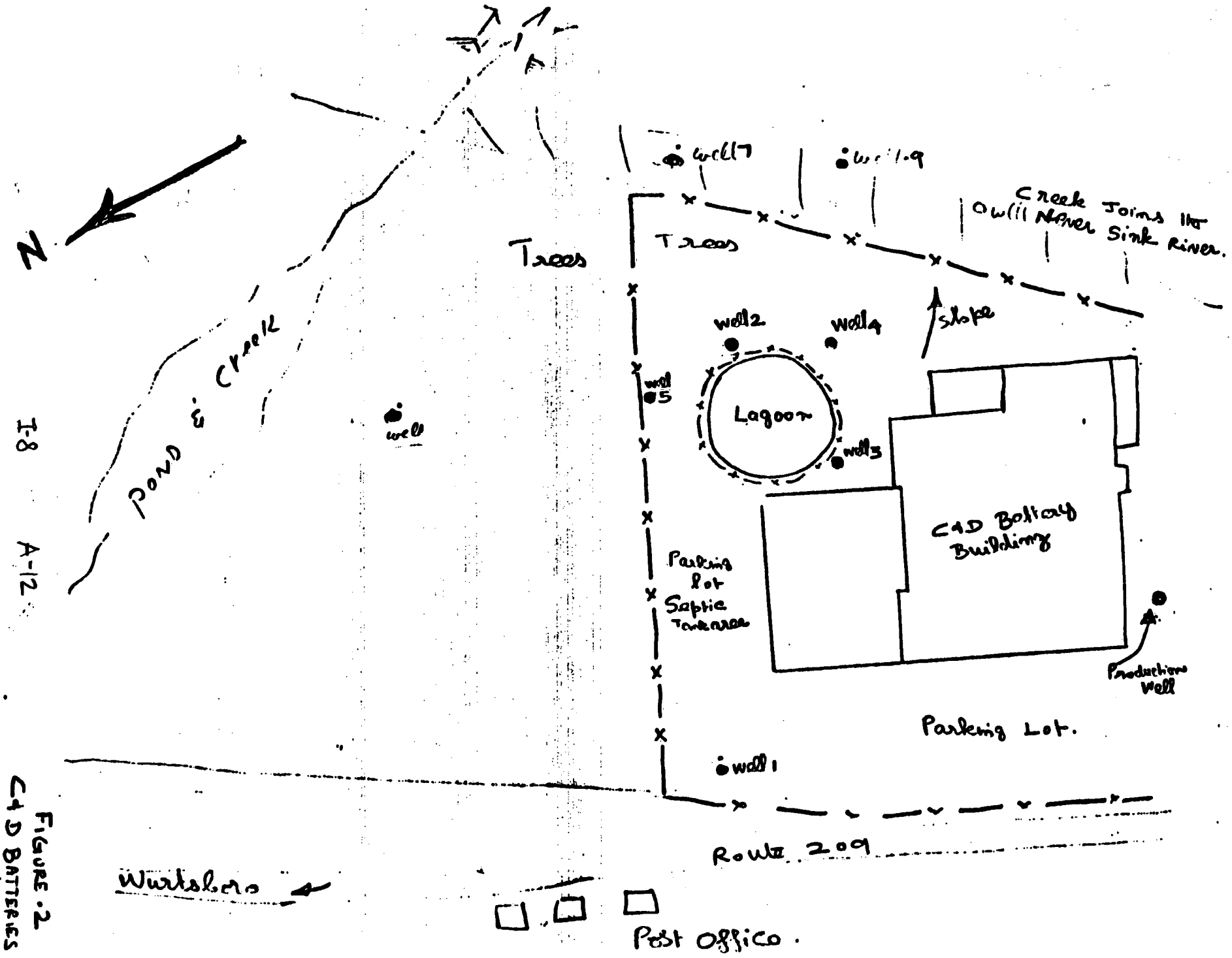


FIGURE 2
C4D BATTERIES
221-001

SITE LOCATION MAP

II. SITE RECONNAISSANCE REPORT

SITE RECONNAISSANCE REPORT **C&D BATTERIES**

Date: July 21, 1988

Time: 10:30 AM

Present: Alex Kostic (G&H)
Albert Longoria (G&H)
Michael Langan (C&D Charter Power Systems, Inc.)

Contact Person(s):

Michael Langan
Environmental & Project Engineer
C&D Charter Power System, Inc.
Rt. 209, P.O. Box 209
Huguenot, NY 12746
(914) 856-4466

General Site Access

Take 17 to Route 84. Take Rt. 84 to Port Jervis exit. Make left off exit and get on Rt. 6. Bear right and go straight on Rt. 6 for about a few blocks (Ford Dealership on left hand side) and make a right on Neversink Drive. Go for 4 miles to Rt. 209. Make right onto 209 North. The site will be on right hand side approximately 1/4 of a mile down the road.

Adjoining Site Owners (Contact Persons)

N/A.

Site Changes Since DEC Site Reconnaissance

GW-1	No Change. Well is essentially flush with ground.
GW-2	Covered by a newly paved area. No longer accessible.
GW-3	Covered by a newly paved area. No longer accessible.
GW-4	No Change. Well is essentially flush with ground.
GW-5	No Change.
GW-6	No Change.
GW-7	No Change.
GW-8	No Change.
GW-9	No Change.
GW-10	No Change.
GW-11	No Change.
GW-12	No Change.
GW-13	No Change.

Recommended Relocation of Monitoring Well(s)

None.

Recommended Sampling Location(s)

GW-11 has been selected as the upgradient well. GW-11 was selected over GW-1 because GW-1 is located in the parking lot where rain runoff and automobile fluids might have contaminated the well.

GW-6	Downgradient.
GW-7	Downgradient.
GW-8	Downgradient.
GW-9	Downgradient.

GW-4 was not selected as a downgradient well because it is located in the parking lot and flush with ground where rain runoff and automobile fluids might have contaminated the well.

Drilling Rig Access to Well Location(s)

Not Applicable.

Useable Potable Water Source

Location: C&D Charter Power System, Inc.

Contact Person: Michael Langan
Environmental & Project Engineer
C&D Charter Power System, Inc.
Route 209, P.O. Box 209
Huguenot, NY 12746

Placement of Drilling Cuttings

Not Applicable.

Changes to Site Sketch

See attached sketch. (Section III)

Other Relevant Information

See groundwater level contour map.

Groundwater Level Contour Map

This contour map has been prepared on the basis of the following:

1. Water level measurements obtained from existing wells performed by Roux Associates at the C&D Systems Inc. site on August 16, 1988. Depths to water refers to feet below top of inner PVC riser. (Attachment No. 1).

2. Elevation of ground surface and elevation of top of casings (ousite) performed by Storch Associates on November 21, 1988. (Attachment No. 2).

3. Gibbs & Hill's measurement of riser to casing distance. (Attachment No. 3).

JOB NO. 5583-061

BY A.K / A.L

CLIENT NYS DEC

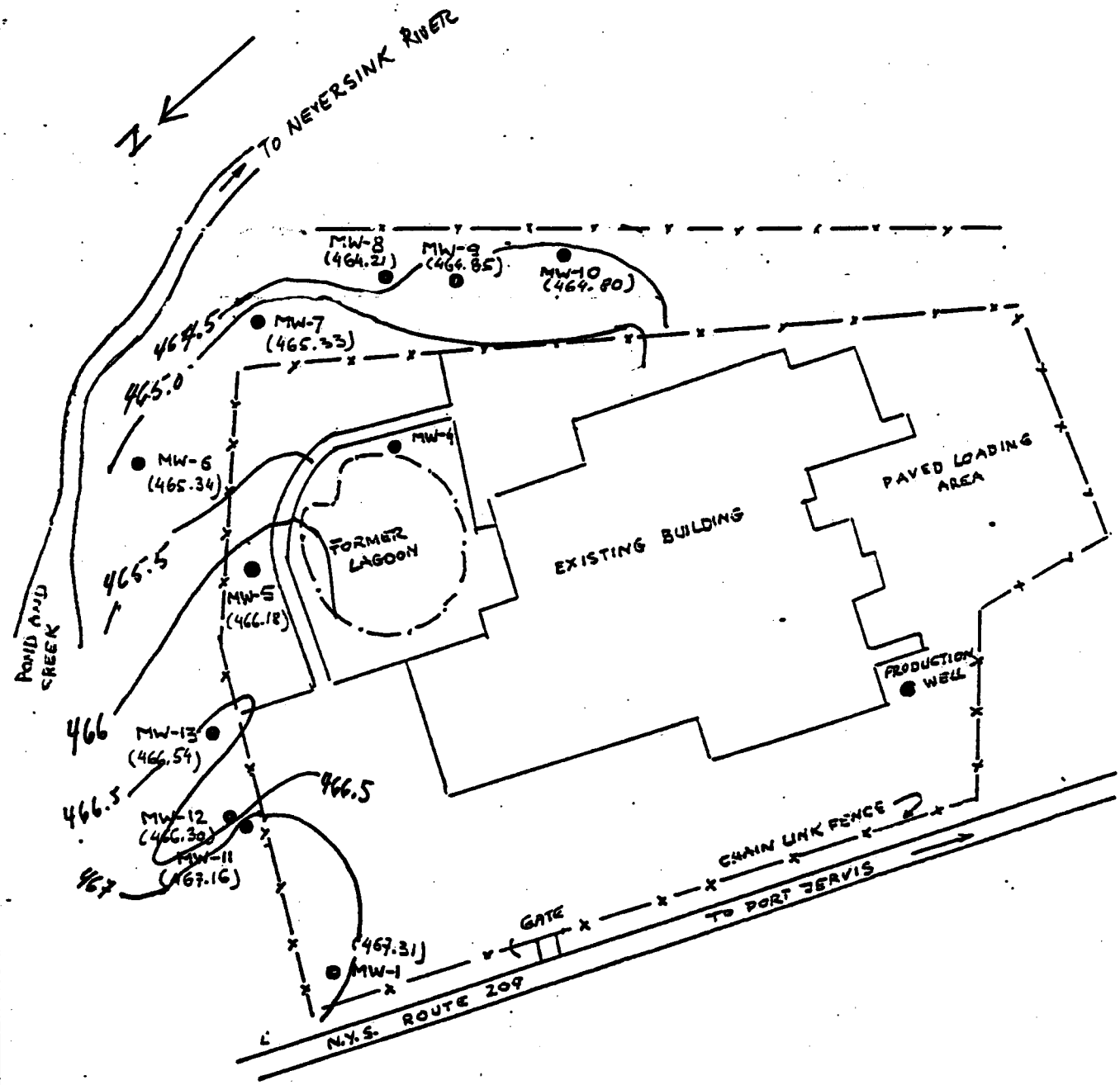
Gibbs & Hill, Inc.
ENGINEERS, DESIGNERS, CONSTRUCTORS
NEW YORK

TITLE CONTOUR MAP

SKETCH No 1

DATE 7/21/88
12/6/88

C & D CHARTER POWER SYSTEMS
HUGUENOT, NEW YORK



ATTACHMENT NO1

sheet 1 of 3

CONSULTING GROUND WATER
GEOLOGISTS AND ENGINEERS
ROUX ASSOCIATES INC

ROUX

THE HUNTINGTON ATRIUM
775 PARK AVENUE
SUITE 255
HUNTINGTON, NEW YORK 11743 516 673 7200 FAX # 516 673 7216

RECEIVED
ENVIRONMENTAL
SCIENCE DEPARTMENT
SEP 2 1988
GIBBS & HILL INC.

August 26, 1988

Mr. Norman Hinsey
Gibbs & Hill, Inc.
11 Penn Plaza
New York, NY 10001-2059

RE: NYSDEC Phase II Investigations
C&D Batteries - Water Level Measurements

Dear Mr. Hinsey:

On August 16, 1988 Roux Associates obtained water level measurements from existing monitoring wells at the C&D Batteries site. All well locations were obtained during the site visit from Mr. Micheal Langan, an environmental engineer with C&D Batteries. Mr. Langan said that well 2 and 3 may have been covered when the area was paved and as a result, they were not measured. He also mentioned that well 4 was recently repaired.

Enclosed is a table of water level measurements and a map showing the approximate locations of the wells. All measurements were made to an accuracy of 0.01 feet.

Please give me a call should you have any questions regarding this matter.

Sincerely,

Jeffrey S. Day
Geologist

Paul H. Roux
President

/g
Encl.

Water Level Measurements - C&D Batteries

Site I.D. #336001

Deer Park, Orange County - August 16, 1988

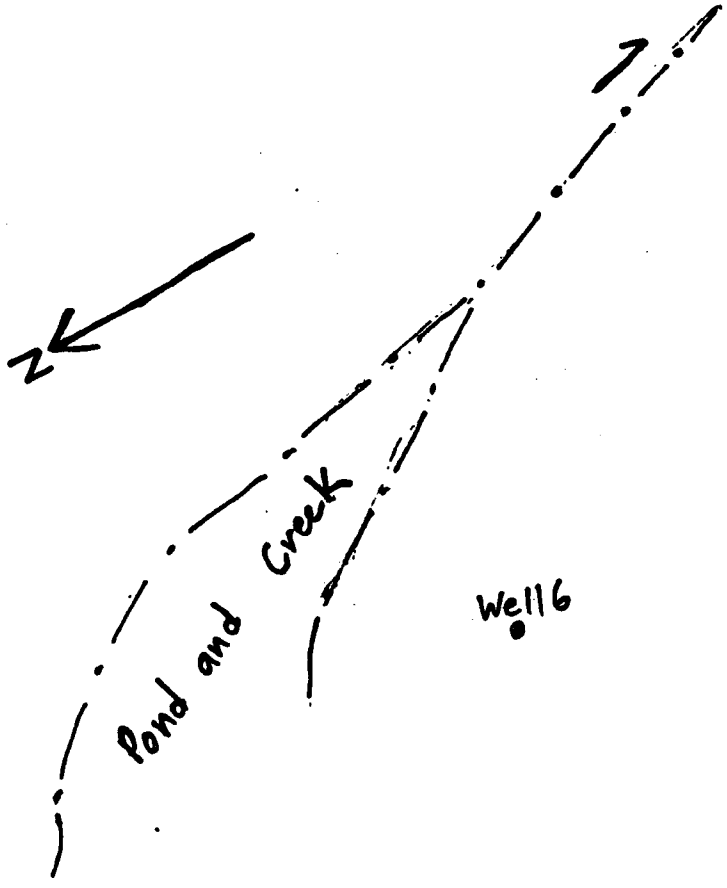
Well Number	Time	Well Diameter	DTW from MP	Measuring Point
1	14:45	4"	28.32'	Black Mark
4*	15:40	2"	30.51'	Black Mark
5	15:33	2"	30.33'	Top PVC Coupling
6	15:16	2"	30.58'	Black Mark
7	15:20	2"	19.27'	Black Mark
8	15:22	2"	22.63'	Mark on Steel Casing
9	15:25	2"	23.33'	Black Mark
10	15:28	2"	23.39'	Black Mark
11	14:51	4"	30.00'	Black Mark
12	14:54	4"	31.06'	Black Mark
13	15:11	4"	29.62'	Black Mark

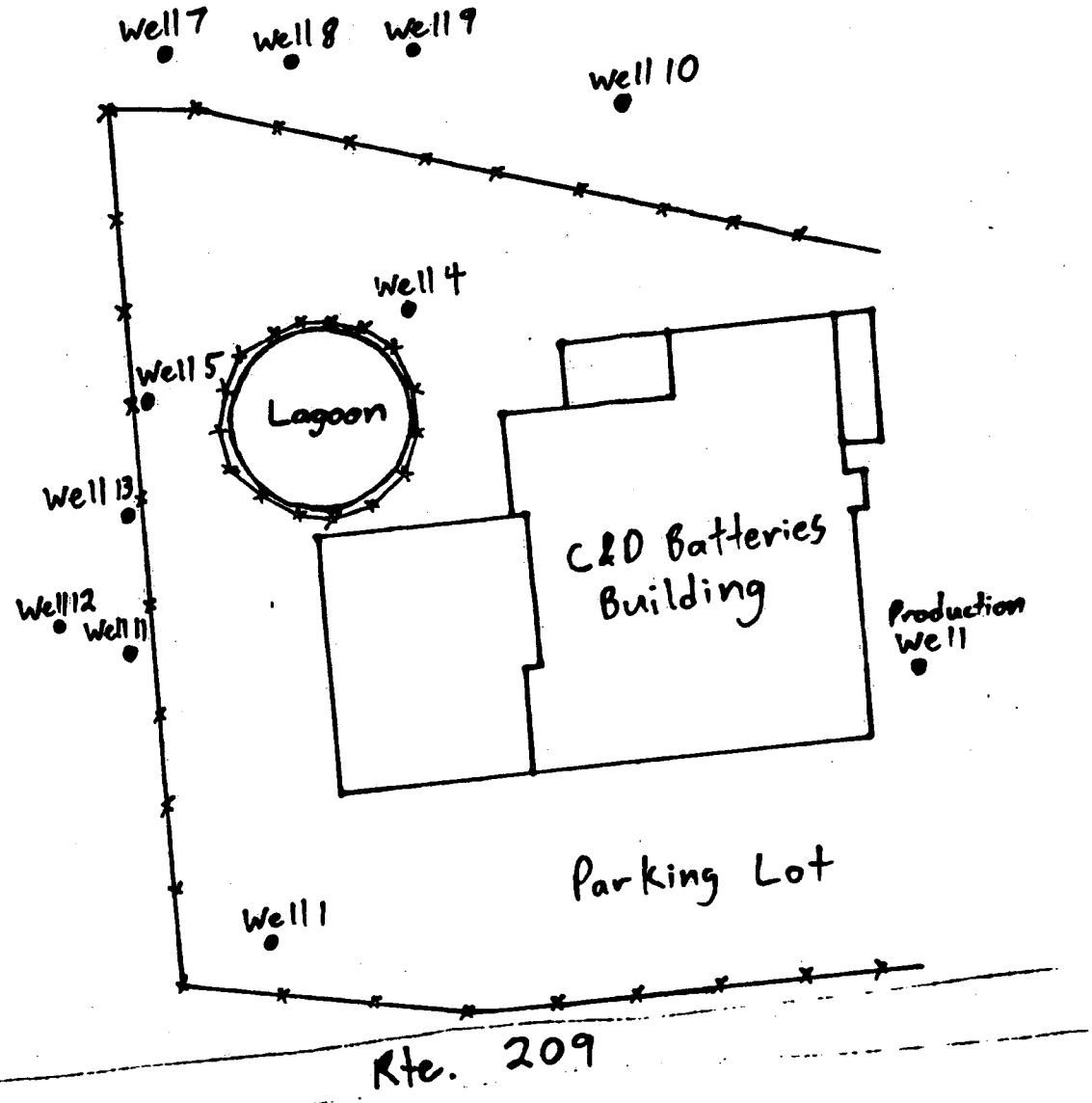
*Well 4 was recently reconstructed

Wells 2 and 3 could not be located

DTW - Depth To Water

MP - Measuring Point





C&D Batteries
336001
Well Locations

ATTACHMENT NO 2

SHEET 1 of 2

RECEIVED
ENVIRONMENTAL
SCIENCE DEPARTMENT
NOV 22 1988
GIBBS & HILL INC.

STORCH ASSOCIATES
30 Jericho Executive Plaza
Jericho, New York 11753

FACSIMILE COVER PAGE

DATE: November 22, 1988 **TIME:** 3:20

DELIVER TO: Norman Hinsey, Gibbs & Hill Inc.

FROM: Bill Welsh

NUMBER OF PAGES: This page and 1

PROJECT NO: 8296 **PROJECT NAME:** Superfund

INSTRUCTIONS: Norman:

These well and ground elevations were obtained 11/10/88. We now have Keys. I received them from Albert L. on Friday.

WJW

Phone: (516) 338-4500
Fax No. (516) 338-6698

S RCH ENGINEERS
S RCH ASSOCIATES
Engineers • dscape Architects • Architects
Plannen 'nvironmental Consultants

JOB Gibbs & Hill, C&D Battery
SHEET NO. OF
CALCULATED BY (J. McW.) DATE Nov. 21, 1988
CHECKED BY WAW DATE Nov. 22, 1988
SCALE

WELL No.	Elevation, Top of Well Casing (Outside)	Elevation at Ground Level	Comments
MW-1	495.92	495.9	Well is essentially flush w/ grd.
-2, -3, -4	not yet installed		
MW-5	496.87	493.6	
MW-6	496.02	494.0	
MW-7	484.87	484.0	
MW-8	487.54	484.3	
MW-9	489.27	485.4	
MW-10	489.63	485.2	
MW-11	497.27	494.8	
MW-12	497.51	494.8	
MW-13	496.53	492.4	
E. Prod. Well	502.42	—	Existing well
W. Prod. Well	502.42	—	" "

RECEIVED
ENVIRONMENTAL SCIENCE DEPARTMENT
NOV 22 1988
GIBBS & HILL INC.

Datum: Arbitrary, based on reference BM at elev. 500.00 feet

ATTACHMENT NO 3

Gibbs & Hill, Inc. Job No. 5583-061 Client NYS DEC

Subject Contour Map

Calculation Number Sheet No. 1 of 2

Revision	Original Issue	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	
Checking Method #											
Preparer											
Checker											

WELL NO	EL. OF GROUND SURFACE, (ft) (1)	Top of casing Elevation, (ft) (1)	Depth to Water, (ft) (2)	Depth to water Below Ground (3)	Water Elevation (ft)
1	495.90	495.92	28.63	28.61	467.31
2	–	–	–	–	–
3	–	–	–	–	–
4	–	–	–	–	–
5	493.6	496.87	30.69	27.42	466.18
6	494.0	496.02	30.70	28.68	465.32
7	484.0	484.87	19.54	18.67	465.33
8	484.3	487.54	23.30	20.06	464.24
9	485.4	489.27	24.42	20.55	464.85
10	485.2	489.63	24.83	20.40	464.80
11	494.8	497.27	30.11	27.64	467.16
12	494.8	497.51	31.21	28.50	466.30
13	493.4	496.53	29.89	26.76	466.64

(1) Measurements performed by Storch Assoc. on Nov. 21, 1988

(2) Measurements performed by Roux Assoc on Aug. 16, 1988 refers to depth of the water (in feet) below of PVC riser. Roux's measurements have been adjusted to the top of casing.

(3) Depth of the water below the ground surface.

II-10 A-24

Checking Method #
1. Line-by-line checking
2. Alternative Calculation Results compared
3. Identical Calculation Results compared
4. Compare inputs and results of computer with corresponding inputs and results of similar codes.

F-166, 7-82

III. SITE SKETCH

JOB NO. 5582-061

BY A.K / A.L

CLIENT NYS DEC

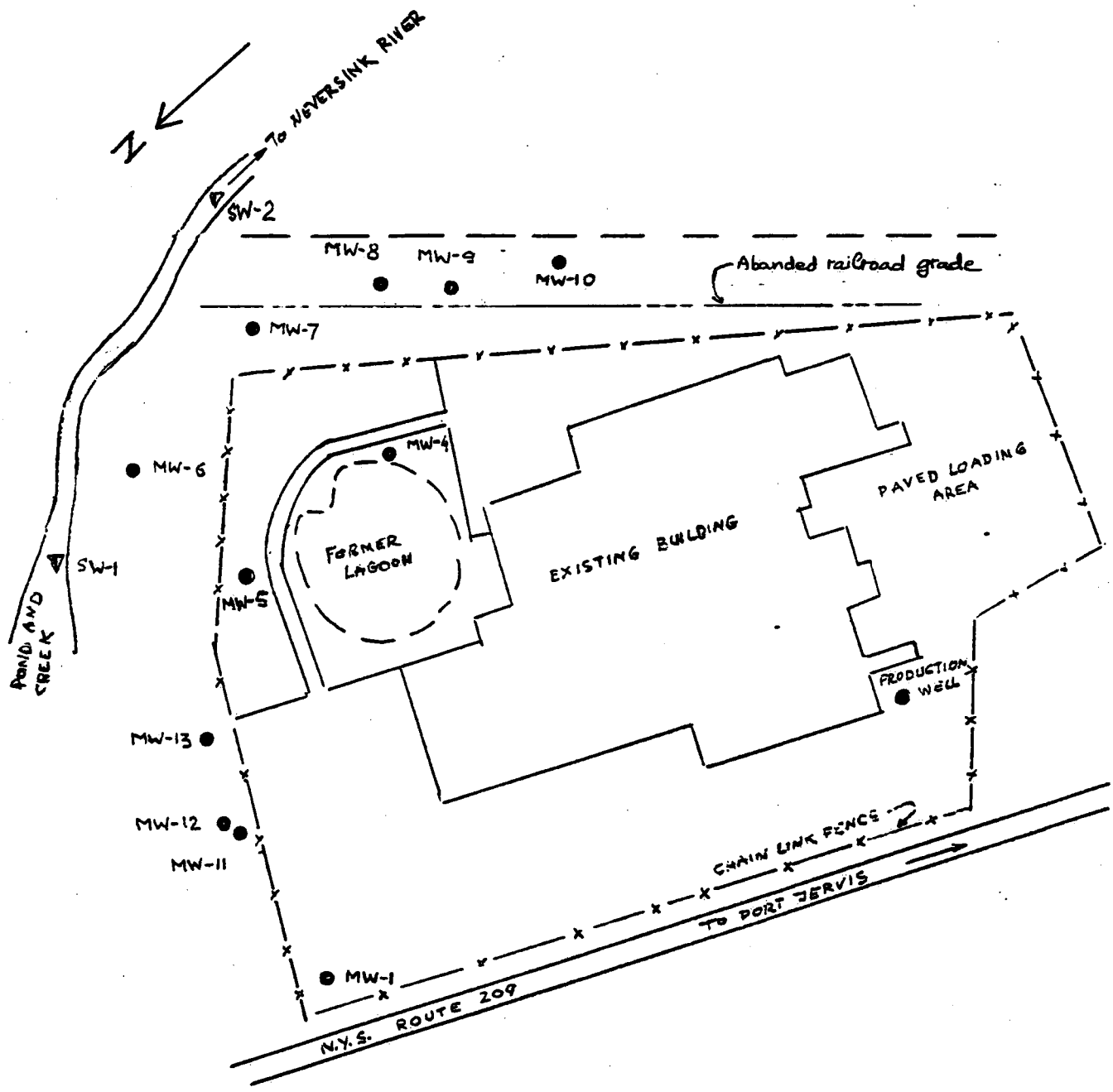
Gibbs & Hill, Inc.
ENGINEERS, DESIGNERS, CONSTRUCTORS
NEW YORK

SKETCH No 1

DATE 7/21/88

TITLE SITE SKETCH

C & D CHARTER POWER SYSTEMS
HUGUENOT, NEW YORK



A-26

IV. GEOPHYSICAL REPORT

All monitoring wells have been installed. No additional geophysical investigation is necessary.

V. DRILLING PROTOCOLS

All monitoring wells have been installed.

No additional drilling will be necessary.

VI. SAMPLING PROTOCOLS

II. Site Specific Sampling Order
Field Data Sheet

Site Name: C&D Batteries

Date:

Weather:
Temp.:
Humidity:
Precipitation:
Wind Speed/Direction:

Sampling Team Members

Name	Title
a)	
b)	
c)	

Sample Order	Station Location No.	Sampling Device	Laboratory Sample ID. No.	Comp.	Grab	GW	Sed.	Soil	Leachate	SW	Remarks
1	Trip blank					X					
2	Field blank					X					
3	GW-11	Bailer				X					
4	GW-6	"				X					
5	GW-7	"				X					
6	GW-8	"				X					
7	GW-9	"				X					
8	GW-14	"				X					Duplicate GW-6
9	SW-2	wheaton sampler								X	
10	SW-2	sediment sampler					X				
11	SW-1	wheaton sampler								X	
12	SW-1	sediment sampler					X				

See Appendix B for Sampling Protocols

VII. HEALTH & SAFETY PLAN

VII. SITE SPECIFIC HEALTH AND SAFETY PLAN

A. GENERAL INFORMATION

SITE NAME: C & D Batteries NY ID. NO.: 336 001

LOCATION: C & D Power Systems Inc., Rt. 209, Hugenot, NY 12746

CONTACT NAME: Michael M. Langan, Env. Engr.

ADDRESS: C&D Power Systems Inc.

PHONE NO: (914) 856-4466

G&H's PROJECT MANAGER:

NAME: Norman Hinsey

PHONE NO.: (212) 216-7839

NYS DEC CONTACT:

NAME: Lawrence Alden

PHONE NO.: (518) 457-0639

B. SITE CHARACTERISTICS

FACILITY FUNCTION: An inactive industrial waste disposal lagoon.

PHASE I COMPLETED: YES _____ NO X

STATUS: ACTIVE _____ INACTIVE X UNKNOWN _____

POSSIBLE CONTAMINANTS: Fluorides, lead

RECOMMENDED LEVEL OF PROTECTION: LEVEL A _____ LEVEL B _____

LEVEL C _____ LEVEL D X

MONITORING EQUIPMENT: PID (HNu) X MAX. LEVEL 5 ppm*

(*In the event air monitoring results indicate an increase above 5 ppm of total organic vapor, all work activities will cease, the NYS DEC will be notified, and a joint decision will be made on the altering of the SOP.)

WORKING ZONE: 6 ft around monitoring wells

Site Secured Yes Wells No 1,5 & 4 No Wells No 11, 12, 13, 7, 8, 9 & 10

Sketch attached Yes ____ No X

SITE SPECIFIC CONCERNS: None

C. GIBBS & HILL STANDARD HEALTH AND SAFETY PLAN

G&H's STANDARD HEALTH AND SAFETY PLAN FOR PHASE II INVESTIGATION: Attached See Appendix C

Not Attached _____

EMERGENCY INFORMATION

Emergency Response Agencies:

- Hospital: Marcy Community Hospital (Former St. Francis Hospital)

Has the hospital been contacted? Yes Y No ____
Do they handle chemical accidents? Yes X No ____
Do they have an emergency room? Yes Y No ____
What are business hours? 24 HRS
General telephone: (914) 856-5351
Emergency room telephone: —
Location: 160 East Main Street, Pt. Jervis, NY.

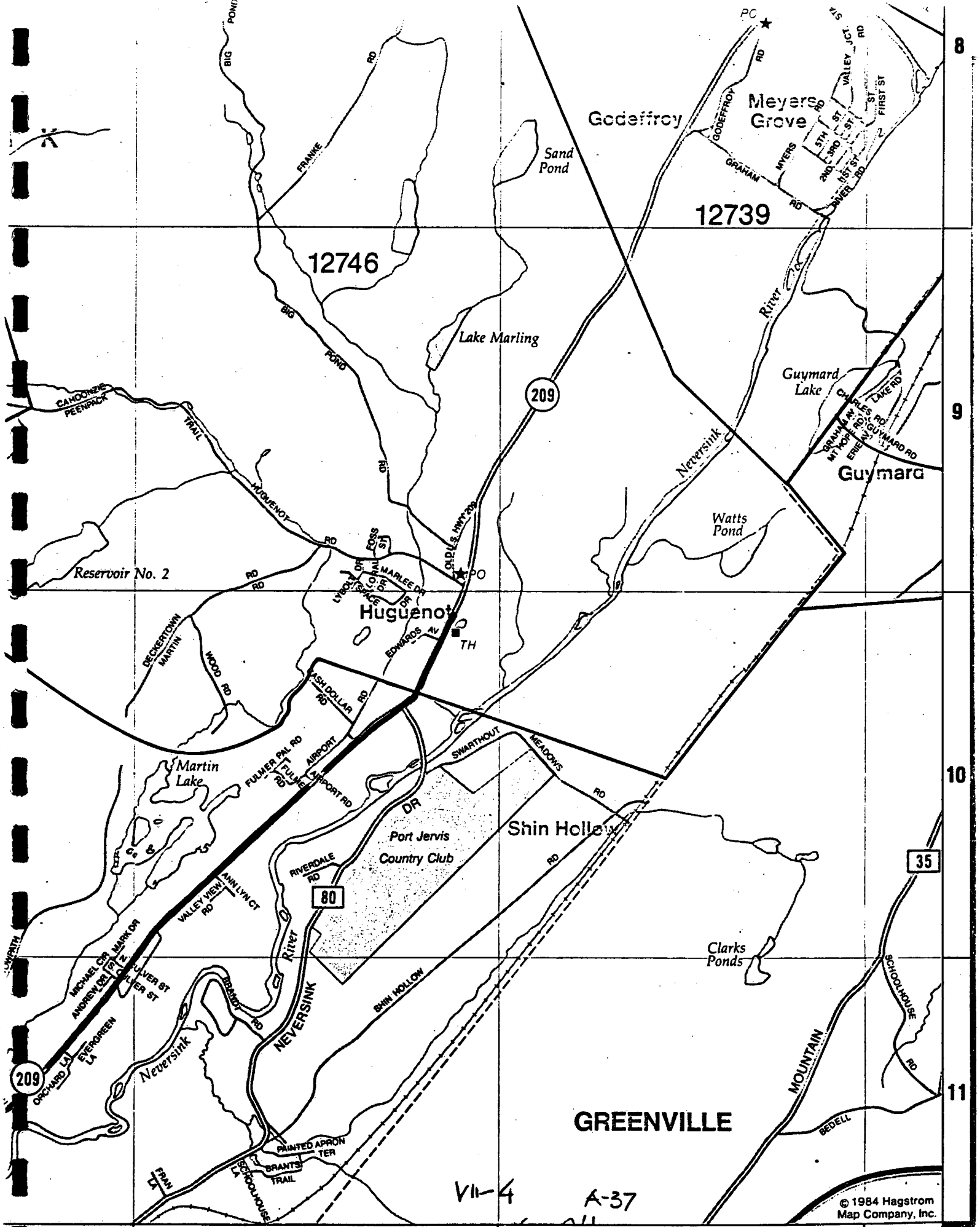
Site to hospital route: Take Rt 209 for about 4 miles to East Main Street. Make left. Go 4 blocks. Hospital will be on left hand side.

Is the route map attached: Yes X No ____
Nearest Site Phone Location: CED Power Co
Phone Direction/Map Attached: Yes ____ No X

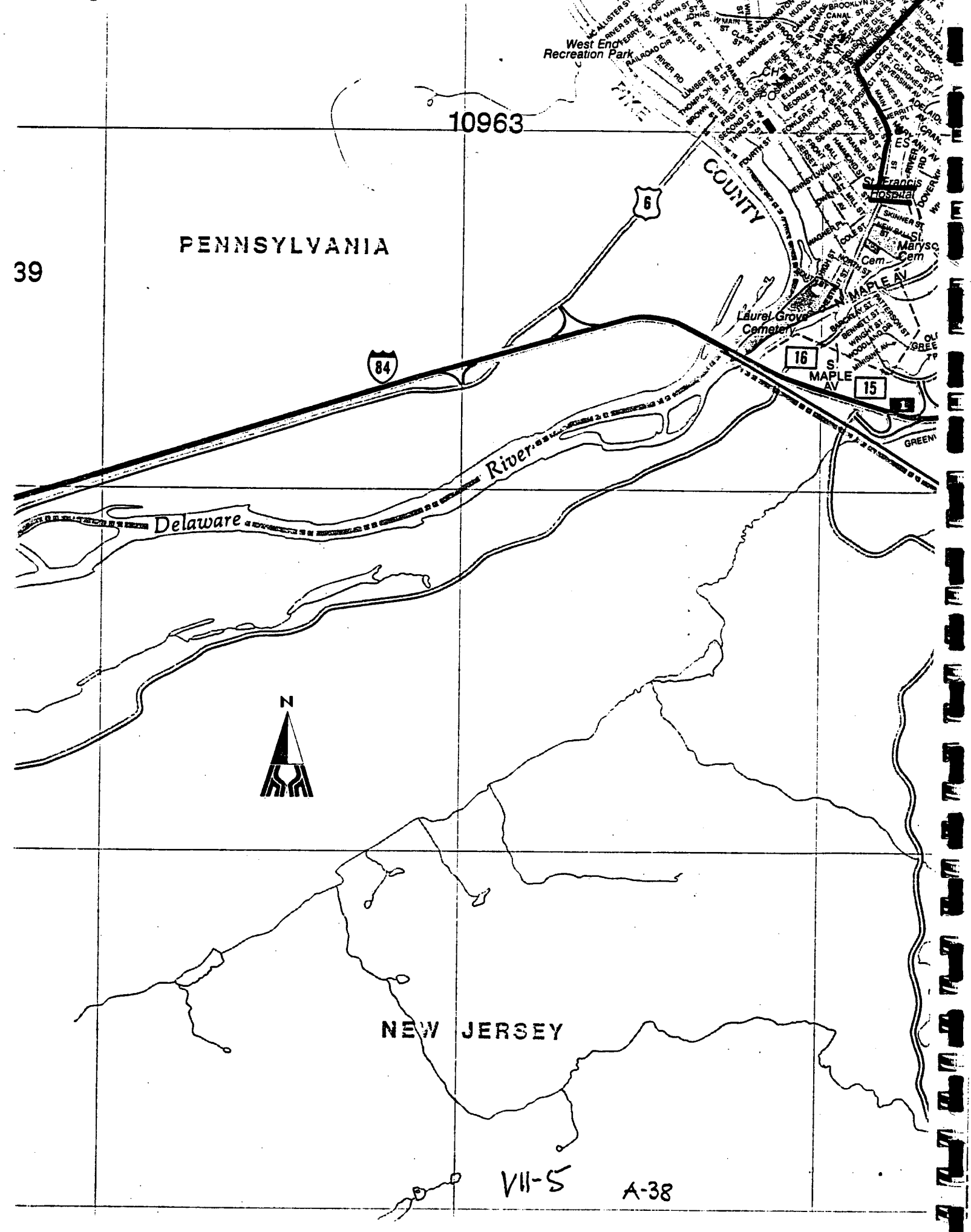
	Phone No.
• Ambulance	(914) 856-5351
• Police	N/A
• Fire Department	N/A
• Poison Control Center	1-800-535-0525
• CHEMTREC	1-800-424-9300
• USCG/DOT National Response Center:	1-800-424-8802

Emergency Contacts

		Phone No.
o NYCDEC Project Manager:	Marsden Chen	1-518-457-0639
o NYCDEC Project Engineer:	Lawrence Alden	1-518-457-0639
o G&H Project Manager:	Norman Hinsey	1-212-216-7839
o G&H Corporate Health & Safety Officer:	R. Barbour	1-212-216-6647



FOR ADJOINING AREA SEE MAP NO. 14


West End
Recreation Park
10963
COUNTY
PENNSYLVANIA
39
6
84
St. Francis
Hospital
St. Marys
Cem
Cem
MAPLE AV
Laurel Grove
Cemetery
16
S.
MAPLE
AV
15
River
Delaware
N
NEW JERSEY

VII-5

A-38

APPENDIX B

FIELD DATA

1. Slug Test

The slug test was performed to determine the hydraulic conductivity of the saturated zone. A standard method of performing a slug test is to instantaneously drop a clean weight down the well to displace the water and measure the water level as it returns to its original level. The weight used was a dedicated teflon bailer with a disposable propylene suspension cord filled with distilled water. The weight was lowered below the water level.

The rate of the groundwater level change was recorded by measuring the depth to the water below the top of the casing as a function of time after the start of the test until the original level of the water table is restored. Because the soil is highly permeable, the original level of the water table restored rapidly. The recovery of the groundwater level was achieved in under 5 seconds.

Groundwater elevation was measured and recorded prior to any testing. All water elevation measurements was performed with an electronic water level indicator.

The Hvorslev method was used to calculate the permeability, K (cm/sec):

$K = [r^2 \ln L/R]/[2LTo]$

Where:

r= radius of a PVC riser, cm

L= length of screen beneath static water level, cm

R= radius of sand pack, cm

To= elapsed time, t, at (H-h)/(H-Ho) = 0.37 sec.

H= reference datum, cm

Ho= water level at equilibrium, cm

h= water level at time t, cm

t= elapsed time, sec.

(R. Allan Freeze and J.A. Cherry, Groundwater, Prentice Hall Inc., pg. 339)

CONDUCTIVITY TEST DATA

Site Name: C&D Power System
Date: 1/18/89

Well No.	Depth to Water, ft.*	Conductivity, cm/sec.
MW-6	29.00	$7x10^{-3}$
MW-7	18.92	$7x10^{-3}$
MW-8	20.00	$6x10^{-3}$
MW-9	21.17	$7x10^{-3}$
MW-10	28.66	$7x10^{-3}$

* Depth to water refers to feet below surface

MONITORING WELL & WATER LEVEL DATA
C & D CHARTER POWER SYSTEMS
HUGUENOT, NEW YORK

MONITORING WELL	TOTAL DEPTH OF WELL	SCREENED INTERVAL	ELEVATION OF GROUND SURFACE	TOP OF RISER ELEVATION	26 JUNE 1988 DEPTH TO WATER	26 JUNE 1988 WATER LEVEL ELEVATION
MW-1	32'	22-32'	472.46	472.27	27.55	444.72
MW-4	40'	30-40'	472.75	472.36	30.00	442.36
MW-5	45'	31-41'	470.23	473.00	29.69	443.31
MW-6	43'	33-43'	470.77	472.37	30.25	442.12
MW-7	29'	19-29'	460.65	461.18	18.80	442.39
MW-8	33'	23-33'	461.35	463.40	21.90	441.50
MW-9	33'	23-33'	462.15	464.70	22.95	441.75
MW-10	35'	25-35'	462.21	464.75	23.10	441.65
MW-11	34'	DNA	471.42	473.71	29.94	443.77
MW-12	50'	45-50'	471.30	473.95	30.43	443.52
MW-13	37'	27-37'	470.00	472.86	29.06	443.80

NOTES: 1) Elevation is mean sea level in feet, using National Geodetic Datum of 1929.
2) Depth to water refers to feet below top of inner casing.
3) DNA - data not available.

(EMR - Northeast, C&D Charter Power Systems Septic Leach Field Investigation, September 1988)

FIELD SURVEY VISIT REPORT

SITE: C+D Batteries

DATE: Nov. 10, 1988

CHIEF OF PARTY: H. Yuen

SURVEY PARTY: H. Yuen, J. McWilliams

HAZARD:

Level D Protection

WEATHER: Cloudy and rainy in afternoon 45°F

PERSONNEL AT SITE: Survey Party

NUMBER OF WELLS: 13

NUMBER OF BORINGS:

OTHER:

SURVEY DATA:

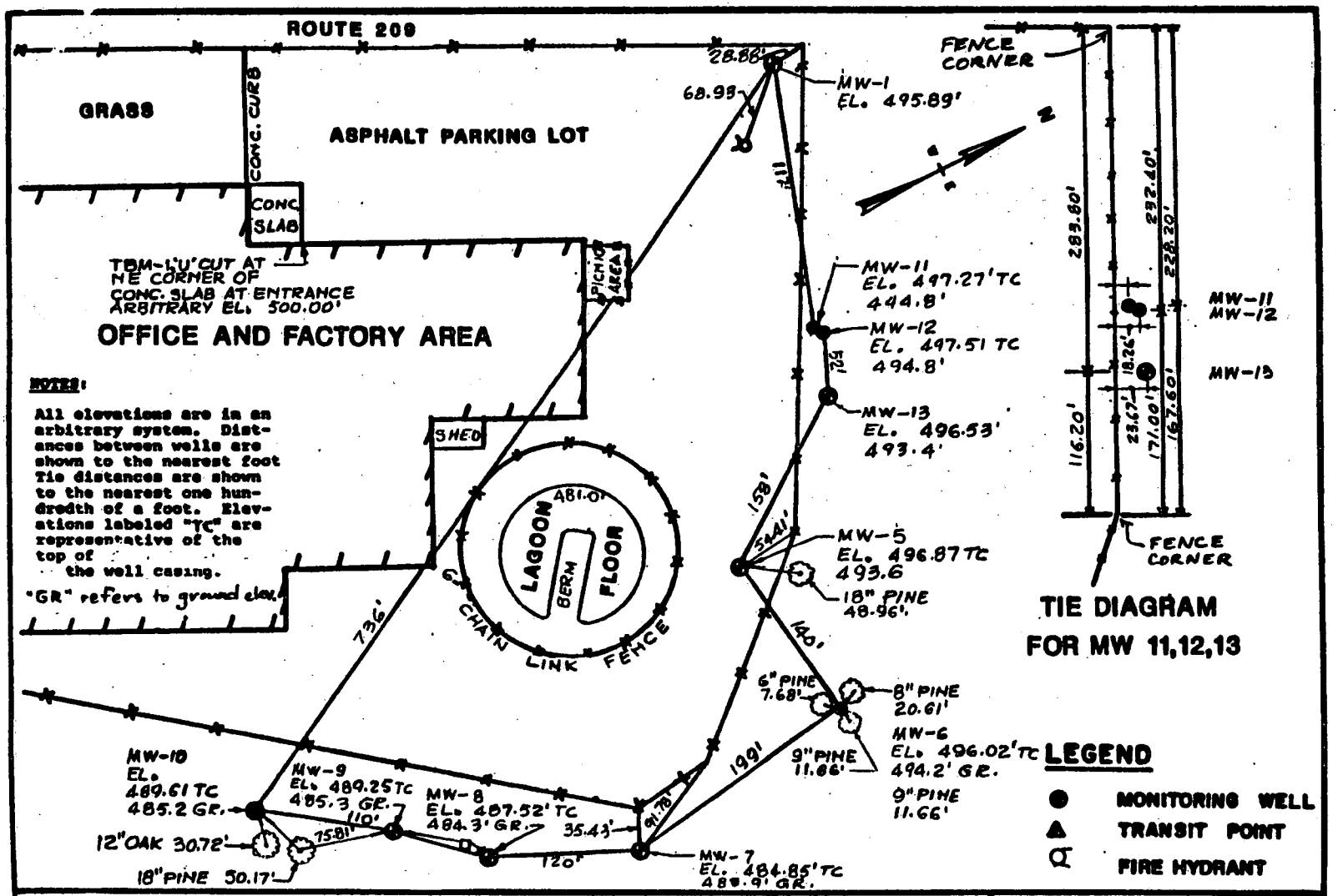
Horizontal Control, Reference Plane: Arbitrary

Vertical Control, Datum: Arbitrary

Bench Mark TBM-1 Elev. 500.00' (see sketch)

COMMENTS: Unable to locate USC&GS BM in field. Established arbitrary bench mark - 'U' cut at NE corner of concrete slab at main entrance. Survey crew was not equipped with keys for the well. Elevations were taken on top of the cap.

STORCH ASSOCIATES
30 Jericho Executive Plaza
Jericho, New York 11753


ROUTE 209
GRASS
CONC. CURB
ASPHALT PARKING LOT
CONC SLAB
TBM-1 'U' CUT AT NE CORNER OF CONC. SLAB AT ENTRANCE ARBITRARY EL. 500.00'
OFFICE AND FACTORY AREA
PICNIC AREA
SHED
NOTES:
All elevations are in an arbitrary system. Distances between wells are shown to the nearest foot Tie distances are shown to the nearest one hundredth of a foot. Elevations labeled "TC" are representative of the top of the well casing.
"GR" refers to ground elev.
LAGOON
481.0'
BERM
FLOOR
6' CHAIN LINK FENCE
28.88'
68.93'
MW-1
EL. 495.89'
111'
MW-11
EL. 497.27' TC
444.8'
MW-12
EL. 497.51 TC
494.8'
124'
MW-13
EL. 496.53'
493.4'
158'
54.41'
MW-5
EL. 496.87 TC
493.6
18" PINE
48.96'
140'
6" PINE
7.68'
8" PINE
20.61'
MW-6
EL. 496.02' TC
494.2' GR.
9" PINE
11.66'
9" PINE
11.66'
199'
91.78'
35.43'
MW-7
EL. 484.85' TC
488.9' GR.
120'
MW-8
EL. 487.52' TC
484.3' GR.
110'
75.81'
MW-9
EL. 489.25 TC
485.3 GR.
MW-10
EL.
489.61 TC
485.2 GR.
12" OAK 30.72'
18" PINE 50.17'
736'
FENCE CORNER
283.80'
232.40'
228.20'
116.20'
23.67'
171.00'
167.60'
18.26'
MW-11
MW-12
MW-13
FENCE CORNER
TIE DIAGRAM
FOR MW 11,12,13
LEGEND
MONITORING WELL
TRANSIT POINT
FIRE HYDRANT
C&D BATTERIES
NYSDEC #336001
STORCH ASSOCIATES
90 JERICHO EXECUTIVE PLAZA
JERICHO, NY 11753

Gibbs & Hill, Inc. JOB NO.: 5583- CLIENT: NYSDEC

SITE NAME: C & D BATTERIES

SUBJECT: Determination of Permeability of Soil in Situ

DATE OF TEST:

WELL NO.: MW-6

REF.: J. Cherry & R. Freeze, GROUNDWATER, Prentice-Hall, 1979.

TYPE OF TEST: SLUG TEST

METHOD:

$$K = \frac{r^2 \ln (L/R)}{2LT_o}$$

K = permeability (cm/sec)

r = radius of stanpipe (cm)

L = length of screen beneath static water level (cm)

R = radius of sand pack (cm)

T = basic time lag (sec)

T_o = elapsed time at $(H-h)/(H-H_o) = 0.37$ (sec)

H_o = reference datum (cm)

H = water level at equilibrum (cm)

h = water level at time t (cm)

t = elapsed time (sec)

WELL DATA:

r = 2.54 cm.

L = 304.8 cm.

R = 13.02 cm.

To = 5 sec.

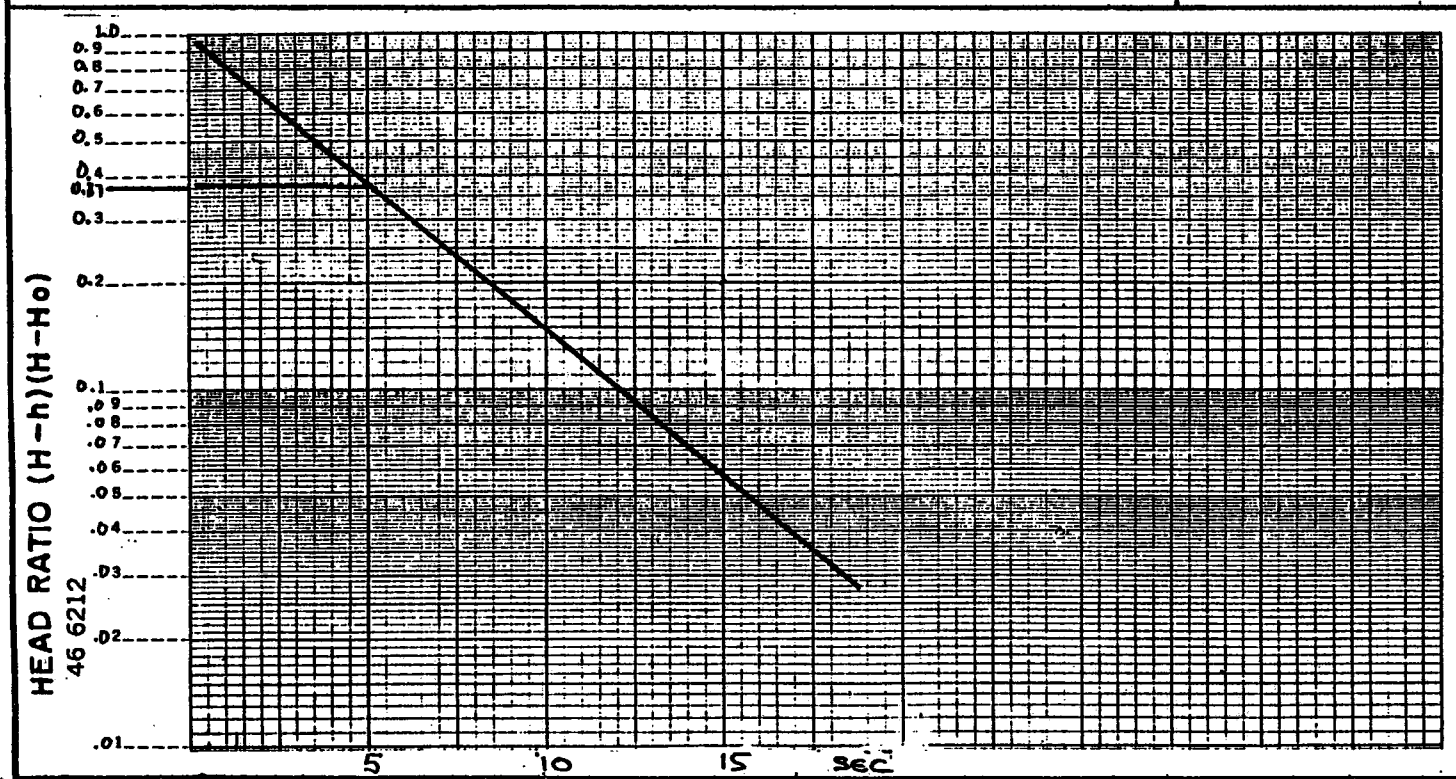
CALCULATION:

$$K = \frac{(2.54)^2 \ln (304.8/13.02)}{2(304.8)(5)}$$

$= 7 \times 10^{-3}$ cm/sec

TEST DATA:

t	$\frac{(H-h)}{(H-H_o)}$
0	1
5	0.37



B-8

Gibbs & Hill, Inc. JOB NO.: 5583- CLIENT: NYSDEC

SITE NAME: C & D BATTERIES

SUBJECT: Determination of Permeability of Soil in Situ

DATE OF TEST: WELL NO.: MW-7

REF.: J. Cherry & R. Freeze, GROUNDWATER, Prentice-Hall, 1979.

TYPE OF TEST: SLUG TEST

METHOD:

$$K = \frac{r^2 \ln (L/R)}{2LT_o}$$

K = permeability (cm/sec)
r = radius of stanpipe (cm)
L = length of screen beneath static water level (cm)
R = radius of sand pack (cm)
T = basic time lag (sec)

T_o = elapsed time at $(H-h)/(H-H_o) = 0.37$ (sec)

H_o = reference datum (cm)
H = water level at equilibrum (cm)
h = water level at time t (cm)
t = elapsed time (sec)

WELL DATA:

r = 2.54 cm.
L = 304.8 cm.
R = 13.02 cm.
To = 5 sec.

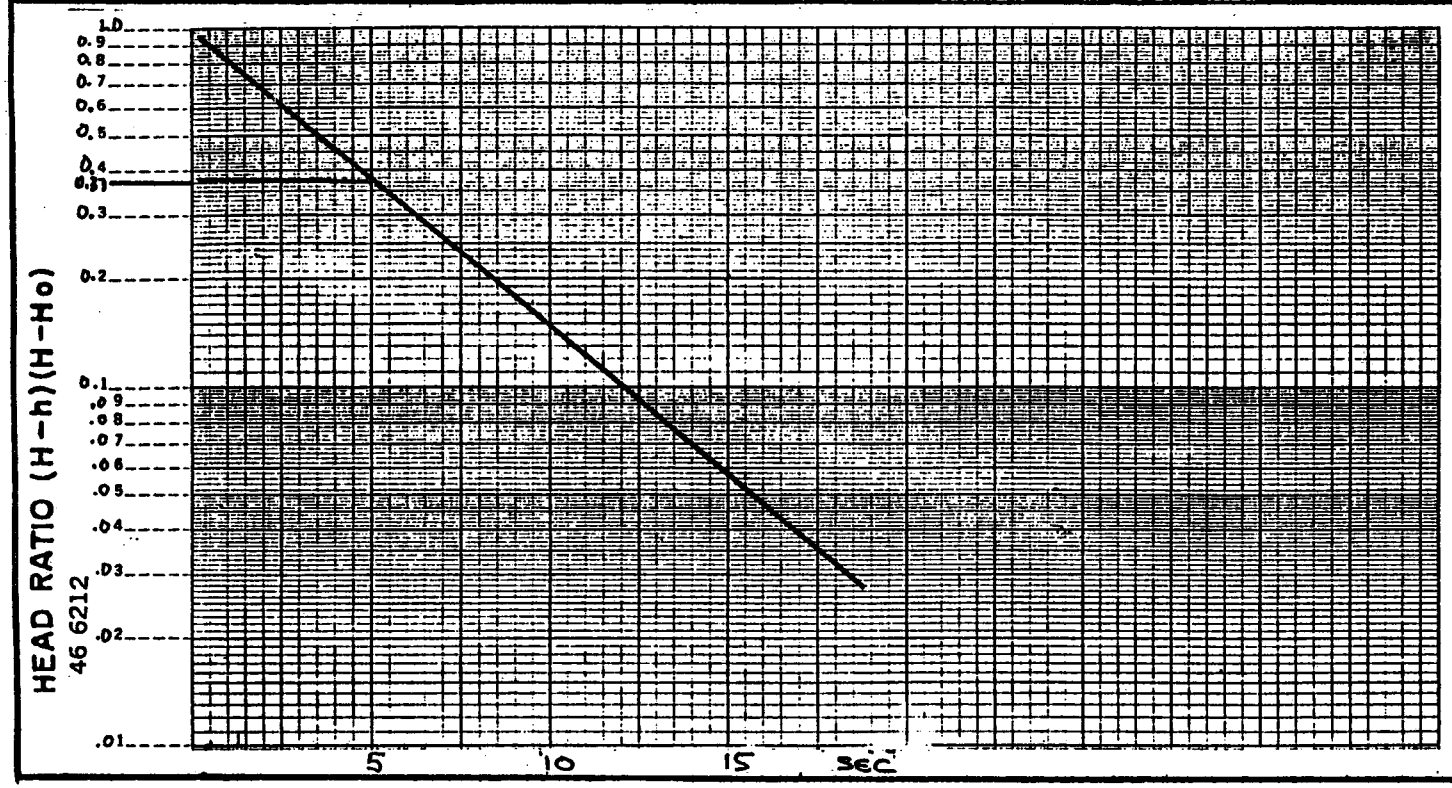
CALCULATION:

$$K = \frac{(2.54)^2 \ln (304.8/13.02)}{2(304.8)(5)}$$

$= 7 \times 10^{-3}$ cm/sec

TEST DATA:

t	$\frac{(H-h)}{(H-H_o)}$
0	1
5	0.37



B-9

Gibbs & Hill, Inc. JOB NO.: 5583- CLIENT: NYSDEC

SITE NAME: C+D Batteries

SUBJECT: Determination of Permeability of Soil in Situ

DATE OF TEST:

WELL NO.: MW-8

REF.: J. Cherry & R. Freeze, GROUNDWATER, Prentice-Hall, 1979.

TYPE OF TEST: Slug

METHOD:

$$K = \frac{r^2 \ln (L/R)}{2LT_o}$$

K = permeability (cm/sec)

r = radius of stanpipe (cm)

L = length of screen beneath static water level (cm)

R = radius of sand pack (cm)

T_o = basic time lag (sec)

T_o = elapsed time at (H-h)/(H-Ho) = 0.37 from best fit line obtained from test data. (sec)

H = reference datum (cm)

Ho = water level at equilibrum (cm)

h = water level at time t (cm)

t = elapsed time (sec)

WELL DATA:

r = 2.54 cm.

L = 304.8 cm.

R = 13.02 cm.

To = 6 sec.

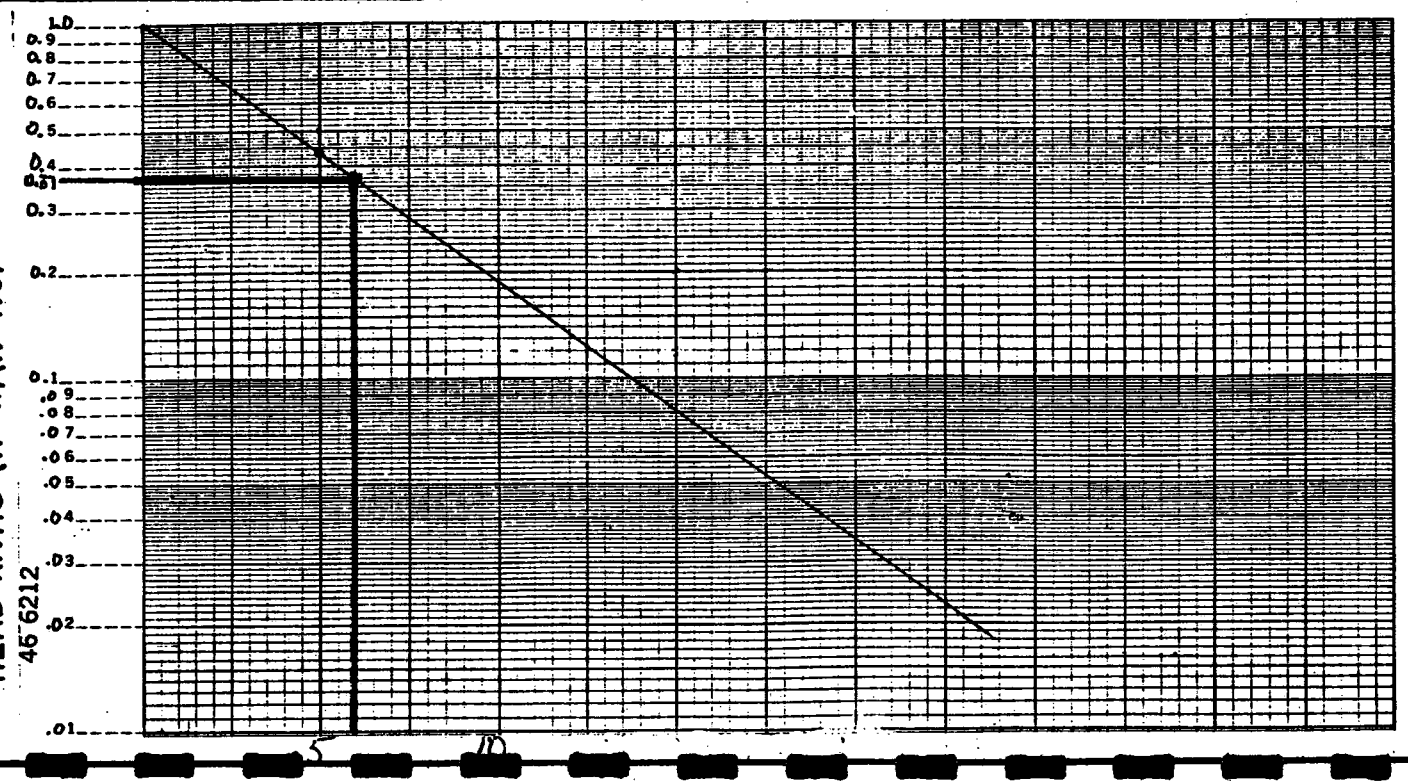
CALCULATION:

$$K = \frac{(2.54)^2 \ln (304.8/13.02)}{2(304.8)(6)}$$

$= 6 \times 10^{-3}$ cm/sec

TEST DATA:

t	(H-h)/(H-Ho)
0	1
5	.44
30	.0



Gibbs & Hill, Inc. JOB NO.: 5583- CLIENT: NYSDEC

SITE NAME: C + D Batteries

SUBJECT: Determination of Permeability of Soil in Situ

DATE OF TEST:

WELL NO.: MW-9

REF.: J. Cherry & R. Freeze, GROUNDWATER, Prentice-Hall, 1979.

TYPE OF TEST: Slug

METHOD:

$$K = \frac{r^2 \ln (L/R)}{2LT_o}$$

K = permeability (cm/sec)

r = radius of stanpipe (cm)

L = length of screen beneath static water level (cm)

R = radius of sand pack (cm)

T_o = basic time lag (sec)

T_o = elapsed time at (H-h)/(H-Ho) = 0.37 from best fit line obtained from test data. (sec)

H = reference datum (cm)

Ho = water level at equilibrum (cm)

h = water level at time t (cm)

t = elapsed time (sec)

WELL DATA:

r = 2.54 cm.

L = 304.8 cm.

R = 13.02 cm.

To = 5 sec.

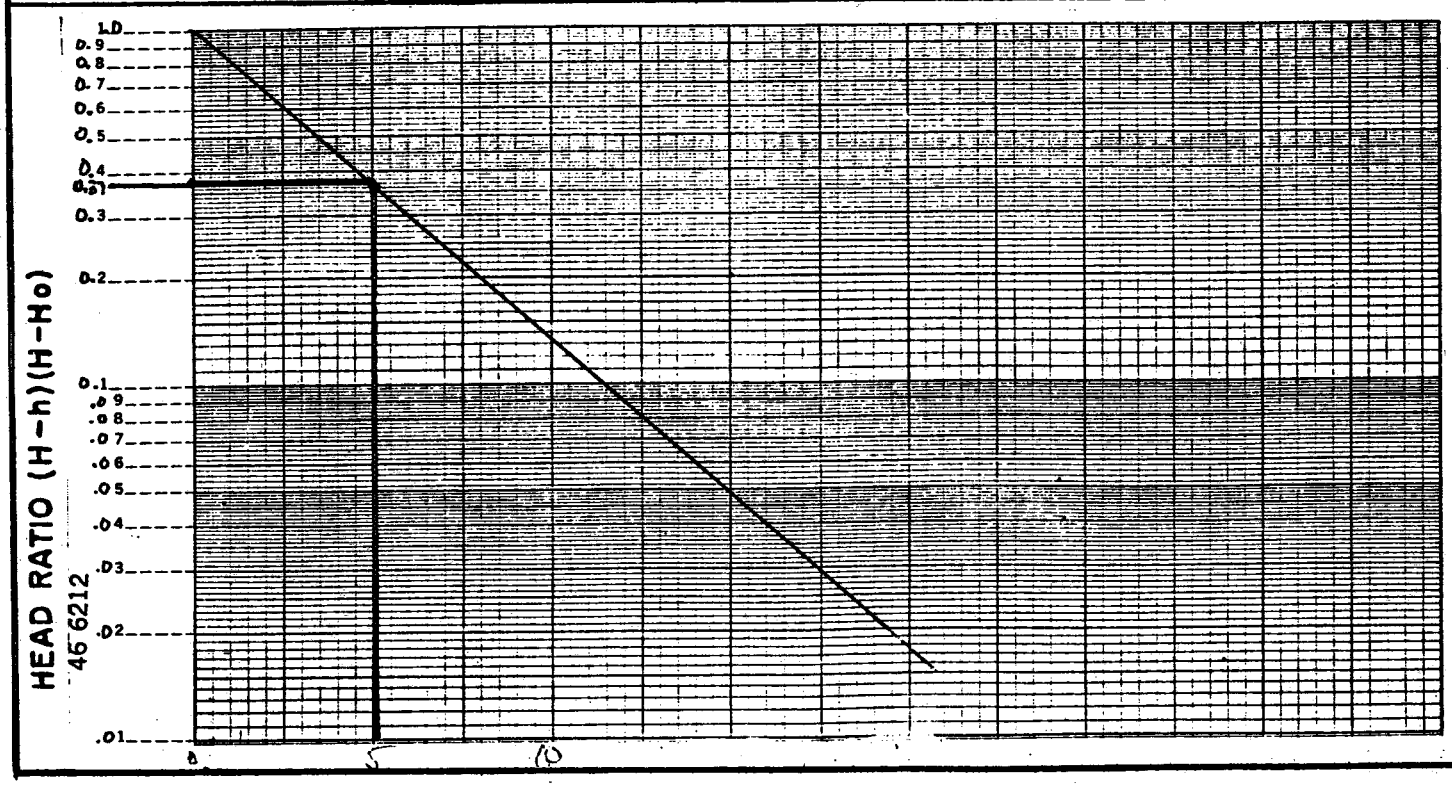
CALCULATION:

$$K = \frac{(2.54)^2 \ln (304.8/13.02)}{2(304.8)(5)}$$

$$= 7 \times 10^{-3} \text{ cm/sec}$$

TEST DATA:

t	(H-h)/(H-Ho)
0	1
5	0.37



B-11

APPENDIX C

SAMPLING AND ANALYSIS

C.1 PROCEDURES

1. Sampling Methodology

The sampling plan was prepared by Gibbs & Hill as a part of the updated work plan. It identifies the number of each sample type to be collected, and describes collection methods to be utilized. The sampling plan specifies each sampling location and gives a sketch with roughly indicated sampling locations for illustrative purpose. The sampling locations were given code numbers for identification.

In order to ensure a smooth and proper sampling process in the field, the following preparations and steps were taken:

- Coordination with the laboratory to ensure adequate number of laboratory cleaned containers were provided, with the necessary preservatives according to the appropriate protocols.

- All instruments to be used in the field were checked to ensure working order. All instruments were calibrated before going to the site.

- Sampling equipment was cleaned in accordance with cleaning procedure outlined in the Page C-4.

During the sampling events the following elements were implemented:

- Chain of custody procedures were followed.
- Accurate sampling log was maintained.
- No sampling containers other than those provided by the laboratory were used.
- A field blank and a trip blank accompanied aqueous samples.
- Prior to sampling, laboratory supplied deionized water was poured over sampling equipment and collected into field blank bottles.
- Well purging was performed. A minimum of three well volumes of water were evacuated.
- Prior to filling the sample bottles, the groundwater was analyzed for temperature, specific conductance and pH.
- Groundwater sample collection occurred right after well development. Samples were collected from the inertial pump except samples for VOA. Dedicated teflon bailer with disposable polypropylene suspension cords were used to collect samples for VOA. Care was taken to minimize the potential for volatilization during the transfer of the sample from the bailer to the bottle. No headspace or air bubbles were allowed in these samples.

- Samples were capped, labeled (well no., site location, type of sample, collection date and time) and placed in ice filled coolers.
- All samples were stored and maintained at less than 4°C and delivered to the laboratory within 48 hours.

Cleaning Procedure

All sampling equipment was thoroughly cleaned before use in accordance with the following procedures:

1. Non-phosphate detergent and tap water wash
2. Tap water rinse
3. Distilled water rinse
4. Acetone (pesticide grade) rinse
5. Hexane rinse
6. Distilled water rinse
7. Air dry

After this procedure has been accomplished, the sampling equipment was wrapped in aluminum foil, placed in a plastic bag and kept in its wrapping until use.

Inertial Pump

The pump is composed of one-piece molded ABS plastic body, foot valve, a flexible polyethylene tubing, and a stainless steel levered handle. A gasoline powered motor drive was used in place of the levered handle where large volumes of water were removed from the wells. The operating principle of the pump is based on the inertia of a column of water contained within a riser tubing. The pump is operated by a continuous up and down movement of the tubing. The water within the tubing will move upward to in pulses and ultimately discharge at the surface.

Air Survey

A PID meter was used to monitor the presence of volatile organic contaminants in the ambient air at the hazardous waste site. The measurements were evaluated to determine the proper health and safety requirements to be implemented during the site reconnaissance, and during sampling activities.

The meter was calibrated daily with a benzene standard. Organic vapor emanating from the surface was determined by holding the probe 6"-12" above the surface for 30 seconds. In all monitoring events, the readings were at the background level.

2. Chemical Analysis

A quality assurance program was developed in the Work Plan to ensure that the precision and accuracy of the groundwater sample analyses were not impacted by sampling, sample handling and equipment decontamination procedures. This program was based on the collection of the field blank samples for laboratory analysis and the maintenance of a trip blank.

A trip blank determines if sample bottles (empty or full) have been exposed to air-borne contaminants in transport or on site. A trip blank (an aliquot of deionized, analyte-free water which was placed in a container and sealed at the laboratory), accompanied the sampler to each sampling site. The trip blanks were handled, transported and analyzed (for VOA) in the same manner as the samples acquired that day, except that the sample containers themselves were not opened in the field.

A field blank was prepared for each sampling episode. The purpose of a field blank is to provide an additional check on possible sources of contamination beyond that which is intended for the trip blank. At the field location, in the most contaminated area, the analyte-free water was passed through a sampling device into an empty set of containers. By being opened in the field, and transferred over a cleaned sampling device, the field blank was also indicative of atmospheric

conditions and/or equipment conditions that might potentially affect the quality of the associated samples. The field blanks were transported, handled and analyzed as routine groundwater samples.

All samples analyses were performed by H2M Laboratory following the procedures outlined in the New York State Contract Laboratory Protocol (CLP). The analyses included are the following:

- TCL (Target Compound List) Inorganics - Preparation and analysis of inorganic compounds using the specified CLP methods. The metal analyses are performed on an unfiltered sample. Results of metal analyses represent total metals.

- TCL Volatiles - Preparation and analysis using the CLP specified GC/MS (Gas Chromatograph/Mass Spectrometer) method for TCL purgeable organics plus a library search for and the quantification of any additional non-TCL compounds (the CLP requires the library search only for the 10 non-TCL compounds of largest apparent concentration).

- TCL Semi-Volatiles - Preparation and analysis using the CLP specified GC/MS method for TCL extractable base/neutral and acid organic compounds plus a library search for and the quantification of any additional non-TCL compounds (the CLP

requires the library search only for the 20 non-TCL compounds of largest apparent concentration).

- TCL Pesticides/PCBs - Preparation and pre-extraction of the organo-chloride pesticides and polychlorinated biphenyls using the CLP specified Gas Chromatograph/Electron Capture Detection (GC/ECD) method.

The CLP used for the analyses specified the quality control measures which were employed, including:

- A duplicate sample obtained from a monitoring well chosen at random. That sample was not identified as a duplicate to the laboratory, but was assigned an identifier similar to other groundwater samples. The Bureau of Hazardous Site Control requires the blind analyses of a duplicate sample for each site by the laboratory to confirm the integrity of all sampling and analytical activities.
- For volatile organic analyses, CLP requires at least one spiked sample analysis and one spike duplicate sample analysis from each group of samples of a similar matrix type for each case of samples or for each 20 samples received, whichever is more frequent.
- A method blank is also used to assess the level of possible laboratory background contamination.

OBG Laboratories, Inc. performed validation of data submitted by H2M Laboratory. For validation of analytical data, the CLP guidelines for validation of laboratory data were followed.

3. Guidelines for Evaluating Chemical Analyses

a. The assessment of a chemical analysis is to determine the existence and magnitude of contamination problems and criteria to determine whether or not a quantitative evidence exists of an observed release. The following criteria based on USEPA, Laboratory Data Validation, February 1, 1988 [D.18] have been applied for evaluation of blanks associated with samples:

- For all pollutants the method blank must contain less than Contract Required Quantitation Limits (CRQL) of any single pollutant. If a method blank exceeds this criterion, the analytical system is considered as "out-of-control".

- Trip and field blank are evaluated as if they are "true" samples. The presence of the analyte in the field/trip blank is an indication of possible field/trip introduced contamination.

- Sample results are considered suitable when concentration of the compound in the sample exceeds 10 times the amount in any blank for common lab contaminants (methylene chloride, acetone, toluene, 2-butanone and common phthalate esters), or 5 times the amount for other compounds.

b. To determine whether or not a quantitative evidence exists of an observed release, the following guidelines have been applied:

- If a contaminant is measured in a sample at the concentration equal to or greater than ten times that of the contaminant in the background sample, then the contaminant is considered to be in a significantly higher level than the background level, and quantitative evidence exists for an observed release.

- If no background concentration is detected (background sample results are below CRQL), then the analytical results for contamination of the sample must be three or more times the CRQL to be considered at significantly higher level than the background level.

c. To determine the magnitude of a water body contamination problem, sample results are compared to the following

federal and New York State water quality standards or guidelines:

- Environmental Protection Agency National Primary Drinking Water Regulations (as of 7/17/89).

  Applied to results of all water sample analyses.

- Chapter 1 of Title 10 of the Official Compilation of Codes, Rules, and Regulations of the State of New York, Part 5, Drinking Water Supplies, Subpart 5-1, Public Water Supplies (as of 11/28/88).

  Applied to results of drinking water sample analyses.

- Chapter 10 of Title 6 of the Official Compilation of Codes, Rules, and Regulations of the State of New York, Division of Water Resources, Article 2, Part 702, Appendix 31, Ambient Water Quality Standards - "The standards adopted herein relate to the condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes" (as of 7/5/85).

  Applied to results of surface water sample analyses for surface water that is not a source of drinking water.

- Chapter 10 of Title 6 of the Official Compilation of Codes, Rules, and Regulations of the State of New York, Division of Water Resources, Article 2, Part 703.5(a)(2) and (3), classes and quality standards for groundwaters - "The purpose of these classes, quality standards, and effluent standards and/or limitations is to prevent pollution of groundwaters and to protect the groundwaters for use as a potable water" (as of 7/5/85).

  Applied to results of all groundwater sample analyses regardless of groundwater use.

d. To determine the magnitude of soil and sediment contamination, soil and sediment samples are compared to the common range of inorganics in uncontaminated soils as listed in the publication USEPA, Review of In-Place Treatment Techniques for Contaminated Surface Soils (EPA-5400/2-84-0036, November 1984, p. 79).

SAMPLING SUMMARY REPORT

Site Name: C&D Power System
Date: 1/18/89
Samplers: A. Kostic and A. Longoria
Weather: Partly cloudy, 5°C

FIELD TEST DATA

Well No.	Temp. °C	Cond., umho/cm	pH	Remarks
MW-6	9	70	5.8	No odor, clear
MW-7	9	200	7.8	No odor, cloudy
MW-8	9	180	6.9	No odor, cloudy
MW-9	8	240	7.3	No odor, reddish
MW-11	9	150	5.5	No odor, clear

Before sampling, four volumes were evacuated from each well by dedicated teflon bailers.

C.2 RESULTS

LABORATORIES, INC.

June 5, 1989

Mr. Lawrence J. Alden
New York State Department
of Environmental Conservation
Division of Solid and Hazardous Waste
50 Wolf Road
Albany, New York 12233-0001

Re: Data Validation
File: 4398-001-517

Dear Larry,

Please find enclosed the report on the validation of data packages submitted by H2M Labs, Inc. The samples validated were collected from the C & D Batteries Site on 1-17-89. The following table itemizes the site identification, laboratory sample number and parameters validated.

SITE ID	LABORATORY SAMPLE NUMBER	PARAMETERS VOA	BNA	PEST	METALS	CN
GW-6	951190/951198	X	X	X	X	X
GW-7	951191/951199	X	X	X	X	X
GW-8	951192/951200	X	X	X	X	X
GW-9	951193/951201	X	X	X	X	X
GW-11	951194/951202	X	X	X	X	X
GW-14	951195/951203	X	X	X	X	X
Field Blank	951196/951204	X	X	X	X	X
Trip Blank	951197	X				
SW-1	951205/951207	X	X	X	X	X
SW-2	951206/951208	X	X	X	X	X
SS-1	951209/951211	X	X	X	X	X
SS-2	951210/951212	X	X	X	X	X

The data packages were received at OBG Laboratories, Inc. on May 11, 1989. Following the review by our chemists a report is typed identifying the excursions from the 1987 NYS DEC CLP requirements. The excursions are minor and should not effect the overall usability of the data. The laboratory should comment on the excursions cited.

OBG Laboratories, Inc.
Box 4942 / 1304 Buckley Road / Syracuse, New York 13221 / (315) 457-1494

Should you have any questions pertaining to the comments please feel free to contact us.

Very truly yours,
OBG Laboratories, Inc.

David R. Hill

David R. Hill
Vice President

enc.
cc:Mr. Norman Hinsey, Gibbs & Hill
Mr. Stanley Isaacson, H2M Labs

H2M LABS, INC.

Environmental and Industrial Analytical Laboratory
575 Broad Hollow Road, Melville, NY 11747-5076

(516) 694-3040

May 9, 1989

Mr. Norman Hinsey
Gibbs & Hill, Inc.
11 Penn Plaza
New York, New York 10001

Dear Mr. Hinsey:

Please find enclosed a copy of the lab reports, case narratives, and invoice for the samples received on January 19, 1989 from the C & D Batteries Site. The CLP data package has been forwarded to OBG Labs for review.

If you have any questions regarding this material, please feel free to contact us.

Very truly yours,

H2M Labs, Inc.

Stanley Isaacson
Laboratory Manager

SI/aks
Enclosure

H2M LABS, INC.

CASE NARRATIVE FOR VOLATILE ORGANICS

All quality control and calibration requirements for this data package were met with the following exceptions.

The % RPD was outside the required limits for toluene and chlorobenzene for SW-2 MS/MSD.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

****
* *
* *
****

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

WATER VOLATILE SURROGATE RECOVERY

Lab Name: H2M LABS, INC. Contract: Gibbs & Hill

Level: LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	VBLK	90	103	97	--	0
02	Trip Blank	100	99	77	--	0
03	Field Blank	96	109	86	--	0
04	GW-6	89	99	86	--	0
05	GW-7	97	99	83	--	0
06	GW-8	95	102	91	--	0
07	GW-9	98	101	80	--	0
08	GW-11	96	95	79	--	0
09	GW-14	97	98	87	--	0
10	GW-14MS	97	96	94	--	0
11	GW-14MSD	95	99	101	--	0
12	SW-1	91	102	91	--	0
13	SW-2	93	103	77	--	0
14	SW-2MS	91	100	100	--	0
15	SW-2MSD	91	101	90	--	0
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		QC LIMITS
S1 (TOL)	= Toluene-d8	(88-110)
S2 (BFB)	= Bromofluorobenzene	(86-115)
S3 (DCE)	= 1.2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits due to matrix interference

D Surrogates diluted out

H2M LABS, INC.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

SOIL VOLATILE SURROGATE RECOVERY

Lab Name: H2M LABS, INC. Contract: Gibbs & Hill

Level: LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	VBLK	104	104	108	--	0
02	SS-1	103	100	110	--	0
03	SS-1MS	101	101	93	--	0
04	SS-1MSD	105	97	101	--	0
05	SS-2	98	107	108	--	0
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	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits due to matrix interference

D Surrogates diluted out

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(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LAB INC. Contract: Gibbs & Hill

Matrix Spike - Sample No.: GW-14

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC #	QC LIMITS REC.
1.1-Dichloroethene	50	0	55.8	112	61-145
Trichloroethene	50	0	59.8	120	71-120
Benzene	50	0	57.5	115	76-127
Toluene	50	3	61.2	116	76-125
Chlorobenzene	50	0	53.7	107	75-130

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENTRATION (ug/l)	MSD % REC #	% REC #	QC LIMITS RPD	QC LIMITS REC.
1.1-Dichloroethene	50	59.6	119	6	14	61-145
Trichloroethene	50	59.0	118	2	14	71-120
Benzene	50	61.7	123	7	11	76-127
Toluene	50	54.3	103	12	13	76-125
Chlorobenzene	50	50.3	101	6	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits due to high level of compound in sample.

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments:

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LAB INC. Contract: Gibbs & Hill

Matrix Spike - Sample No.: SW-7

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC #	QC LIMITS REC.
1.1-Dichloroethene	50	0	50.8	101	61-145
Trichloroethene	50	0	44.6	89	71-120
Benzene	50	0	49.8	100	76-127
Toluene	50	0	39.2	78	76-125
Chlorobenzene	50	0	37.4	75	75-130

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENTRATION (ug/l)	MSD % REC #	% REC #	QC LIMITS RPD	QC LIMITS REC.
1.1-Dichloroethene	50	52.7	107	6	14	61-145
Trichloroethene	50	50.7	101	13	14	71-120
Benzene	50	54.8	110	10	11	76-127
Toluene	50	49.4	99	24*	13	76-125
Chlorobenzene	50	47.7	95	24*	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits due to high level of compound in sample.

RPD: 2 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments:

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Soil VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LAB INC. Contract: Gibbs & Hill

Matrix Spike - Sample No.: SS-1 Level: Low

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	255	0	195	76	59-172
Trichloroethene	255	0	297	116	62-137
Benzene	255	0	305	120	66-142
Toluene	255	15	360	135	59-139
Chlorobenzene	255	0	330	129	60-133

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENTRATION (ug/kg)	MSD % REC #	% REC #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	242	191	79	4	22	59-172
Trichloroethene	242	265	110	5	24	62-137
Benzene	242	292	121	1	21	66-142
Toluene	242	327	130	4	21	59-139
Chlorobenzene	242	314	130	1	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits due to high level of compound in sample.

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments:

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE METHOD BLANK SUMMARY

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Lab Name: H2M LABS, INC.
Lab File ID: PU9623
Date Analyzed: 1/23/89
Matrix: (soil/water) Water
Instrument ID: OWA-1

Gibbs & Hill
Lab Sample ID: VBLK
Time Analyzed: 9:00
Level: (low/med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	Trip Blank	951197	PU9626	9:47
02	Field Blank	951196	PU9627	10:29
03	GW-6	951190	PU9628	11:14
04	GW-7	951191	PU9629	11:58
05	GW-8	951192	PU9630	12:43
06	GW-9	951193	PU9631	13:28
07	GW-11	951194	PU9632	14:13
08	GW-14	951195	PU9633	14:59
09	GW-14MS	951195MS	PU9634	15:44
10	GW-14MSD	951195MSD	PU9635	16:29
11	SW-1	951205	PU9636	17:14
12	SW-2	951206	PU9637	17:50
13	SW-2MS	951206MS	PU9638	18:30
14	SW-2MSD	951206MSD	PU9639	19:11
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COMMENTS:

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE METHOD BLANK SUMMARY

Lab Name: H2M LABS. INC.
Lab File ID: PU9643
Date Analyzed: 1/24/89
Matrix: (soil/water) Soil
Instrument ID: OWA-1

Gibbs & Hill
Lab Sample ID: VBLK
Time Analyzed: 13:46
Level: (low/med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	SS-1	951209	PU9644	19:31
02	SS-1MS	951209MS	PU9645	20:14
03	SS-1MSD	951209MSD	PU9646	20:56
04	SS-2	951210	PU9647	21:41
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COMMENTS:

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951190 Sample No. GW-6
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9628
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration	Unit: ug/l
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	9	B
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	3	JB
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

Date Reported: 2/27/89

John J. Molloy, P.E.
Laboratory Director

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Lab Sample ID: 951190 Sample No. GW-6
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9628 Gibbs & Hill
Sample Vol: 5 ml Date Received: 1/19/89
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 0 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
	No TICs Found			

Date Reported: 2/25/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: 951191 Sample No. GW-7
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9629
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/l	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	8	B
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	3	JB
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

Date Reported: 2/27/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Lab Sample ID: 951191 Sample No. GW-7
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9629 Gibbs & Hill
Sample Vol: 5 ml Date Received: 1/19/89
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 2 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
1066406	TriMethyl silanol	10:18	10	J
	Unknown	14:42	31	J

* May be from the column

Date Reported: 3/1/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: 951192 Sample No. GW-8
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9630
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration	Unit: ug/l
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	12	B
67-64-1	Acetone	9	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	4	JB
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	4	J
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

Date Reported: 2/27/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Lab Sample ID: 951192 Sample No. GW-8
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9630 Gibbs & Hill
Sample Vol: 5 ml Date Received: 1/19/89
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 2 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
1066406	Trimethyl silanol	10:18	26	J
	Unknown	14:42	27	J

* May be from the column

Date Reported: 3/1/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951193 Sample No. GW-9
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9631
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/l	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	14	B
67-64-1	Acetone	8	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	3	J
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	4	JB
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	2	J
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	3	J
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	2	J
71-43-2	Benzene	2	J
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	2	J
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	5	
108-90-7	Chlorobenzene	2	J
100-41-4	Ethylbenzene	1	J
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	2	J

John J. Molloy, P.E.
Laboratory Director

Date Reported: 2/27/89

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc.
Lab Code:--- Case No.------
Matrix: Water
Sample Vol: 5 ml
Level: Low
% Moisture: not dec:
Column: Pack

Lab Sample ID: 951193 Sample No. GW-9
SAS No.:------ SDG No.:-----
Lab File ID: PU9631 Gibbs & Hill
Date Received: 1/19/89
Date Analyzed: 1/23/89
Dilution Factor: 1

Number TICs found: 1 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
	Unknown Alkane	14:43	6	J

Date Reported: 3/1/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951194 Sample No. GW-11
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9632
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration	Unit: ug/l
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	25	B
67-64-1	Acetone	20	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	6	JB
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	2	J
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	9	
108-90-7	Chlorobenzene	3	J
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

John J. Molloy, P.E.
Laboratory Director

Date Reported: 2/27/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Lab Sample ID: 951194 Sample No. GW-11
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9632 Gibbs & Hill
Sample Vol: 5 ml Date Received: 1/19/89
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 2 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
1066406	* Trimethyl silanol	10:21	22	J
	Unknown	14:48	9	J

* May be from the column

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951195 Sample No. GW-14
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9633
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration	Unit: ug/l
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	13	B
67-64-1	Acetone	7	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	4	JB
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	3	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

Date Reported: 2/27/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs, Inc. Lab Sample ID: 951195 Sample No. GW-14
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9633 Gibbs & Hill
Sample Vol: 5 ml Date Received: 1/19/89
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 2 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
1066406	Trimethyl silanol	10:24	12	J
	Unknown	21:24	20	J

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951196 Sample No. Field Blank
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9627
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration	Unit: ug/l
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	9	B
67-64-1	Acetone	6	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	8	JB
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	2	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

Date Reported: 2/27/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Lab Sample ID: 951196 Sample No. Field Blar
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9627 Gibbs & Hill
Sample Vol: 5 ml Date Received: 1/19/89
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 1 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
1066406	*Trimethyl silanol	10:24	22	J

* May be from the column

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951197 Sample No. Trip Blank
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9626
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/l	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	8	B
67-64-1	Acetone	3	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	4	J
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-38-3	Toluene	4	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

Date Reported: 2/27/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Lab Sample ID: 951197 Sample No. Trip Blank
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9626 Gibbs & Hill
Sample Vol: 5 ml Date Received: 1/19/89
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 0 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
	No TICs Found			

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951205 Sample No. SW-1
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9636
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration	Unit: ug/l
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	11	B
67-64-1	Acetone	8	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U,
78-93-3	2-Butanone	4	JB
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

Date Reported: 2/27/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Lab Sample ID: 951205 Sample No. SW-1
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9636 Gibbs & Hill
Sample Vol: 5 ml Date Received: 1/19/89
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 0 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
	No TICs Found			

Date Reported: 3/1/89

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Laboratory Director

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: 951206 Sample No. SW-2
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9637
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/l	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	13	B
67-64-1	Acetone	11	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	3	BJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

Date Reported: 2/27/89

John J. Molloy, P.E.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: 951209 Sample No. SS-1
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Soil Lab File ID: PU9644
Sample Wt: 3.40 g Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/24/89
% Moisture: not dec: 75 Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/kg	
74-87-3	Chloromethane	59	U
74-83-9	Bromomethane	59	U
75-01-4	Vinyl Chloride	59	U
75-00-3	Chloroethane	59	U
75-09-2	Methylene Chloride	310	B
67-64-1	Acetone	170	B
75-15-0	Carbon Disulfide	29	U
75-35-4	1,1-Dichloroethene	29	U
75-34-3	1,1-Dichloroethane	29	U
540-59-0	1,2-Dichloroethene (total)	29	U
67-66-3	Chloroform	20	J
107-02-2	1,2-Dichloroethane	29	U
78-93-3	2-Butanone	21	BJ
71-55-6	1,1,1-Trichloroethane	31	B
56-23-5	Carbon Tetrachloride	29	U
108-05-4	Vinyl Acetate	59	U
75-27-4	Bromodichloromethane	29	U
78-87-5	1,2-Dichloropropane	29	U
10061-02-6	cis-1,3-Dichloropropene	29	U
79-01-6	Trichloroethene	29	U
124-48-1	Dibromochloromethane	29	U
79-00-5	1,1,2-Trichloroethane	29	U
71-43-2	Benzene	29	U
10061-01-5	trans-1,3-Dichloropropene	29	U
75-25-2	Bromoform	29	U
108-10-1	4-Methyl-2-Pentanone	59	U
591-78-6	2-Hexanone	59	U
127-18-4	Tetrachloroethene	29	U
79-34-5	1,1,2,2,Tetrachloroethane	29	U
108-88-3	Toluene	15	JB
108-90-7	Chlorobenzene	29	U
100-41-4	Ethylbenzene	29	U
100-42-5	Styrene	29	U
1330-20-7	Xylene (total)	29	U

John J. Molloy, P.E.
Laboratory Director

Date Reported: 2/27/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Lab Sample ID: 951206 Sample No. SW-2
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9637 Gibbs & Hill
Sample Vol: 5 ml Date Received: 1/19/89
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 0 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
	No TICs Found			

Date Reported: 3/1/89

John J. Molloy. P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: 951209 Sample No. SS-1
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Soil Lab File ID: PU9644
Sample Wt: 3.40 g Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/24/89
% Moisture: not dec: 75 Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration	Unit: ug/kg
74-87-3	Chloromethane	59	U
74-83-9	Bromomethane	59	U
75-01-4	Vinyl Chloride	59	U
75-00-3	Chloroethane	59	U
75-09-2	Methylene Chloride	310	B
67-64-1	Acetone	170	B
75-15-0	Carbon Disulfide	29	U
75-35-4	1,1-Dichloroethene	29	U
75-34-3	1,1-Dichloroethane	29	U
540-59-0	1,2-Dichloroethene (total)	29	U
67-66-3	Chloroform	20	J
107-02-2	1,2-Dichloroethane	29	U
78-93-3	2-Butanone	21	BJ
71-55-6	1,1,1-Trichloroethane	31	B
56-23-5	Carbon Tetrachloride	29	U
108-05-4	Vinyl Acetate	59	U
75-27-4	Bromodichloromethane	29	U
78-87-5	1,2-Dichloropropane	29	U
10061-02-6	cis-1,3-Dichloropropene	29	U
79-01-6	Trichloroethene	29	U
124-48-1	Dibromochloromethane	29	U
79-00-5	1,1,2-Trichloroethane	29	U
71-43-2	Benzene	29	U
10061-01-5	trans-1,3-Dichloropropene	29	U
75-25-2	Bromoform	29	U
108-10-1	4-Methyl-2-Pentanone	59	U
591-78-6	2-Hexanone	59	U
127-18-4	Tetrachloroethene	29	U
79-34-5	1,1,2,2,Tetrachloroethane	29	U
108-88-3	Toluene	15	JB
108-90-7	Chlorobenzene	29	U
100-41-4	Ethylbenzene	29	U
100-42-5	Styrene	29	U
1330-20-7	Xylene (total)	29	U

John J. Molloy, P.E.
Laboratory Director

Date Reported: 2/27/89

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Lab Name: H2M Labs, Inc. Lab Sample ID: 951209 Sample No. SS-1
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Soil Lab File ID: PU9544 Gibbs & Hill
Sample Wt: 3.40 g Date Received: 1/19/89
Level: Low Date Analyzed: 1/24/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 0 ug/kg

CAS Number	Compound Name	RT	Est. Conc.	Q
	No TICs Found			

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951210 Sample No. SS-2
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Soil Lab File ID: PU9647
Sample Wt: 4.81 g Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/24/89
% Moisture: not dec: 21 Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/kg	
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	78	B
67-64-1	Acetone	110	B
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	8	
107-02-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	28	B
71-55-6	1,1,1-Trichloroethane	4	JB
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-02-6	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	3	J
10061-01-5	trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	4	JB
591-78-6	2-Hexanone	3	JB
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2,Tetrachloroethane	7	U
108-88-3	Toluene	40	B
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	4	J
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	14	

John J. Molloy, P.E.
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Date Reported: 2/27/89

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Lab Name: H2M Labs. Inc. Lab Sample ID: 951210 Sample No. SS-2
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Soil Lab File ID: PU9647 Gibbs & Hill
Sample Wt: 4.81 g Date Received: 1/19/89
Level: Med Date Analyzed: 1/24/89
% Moisture: not dec: 21 Dilution Factor: 1
Column: Pack

Number TICs found: 2 ug/kg

CAS Number	Compound Name	RT	Est. Conc.	Q
	Unknown alkane	14:48	9	J
	Unknown alkene	21:24	22	J

Date Reported: 3/1/89

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TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: Sample No. VBLK
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9625
Sample Vol: 5 ml Date Received: Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/l	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	15	
67-64-1	Acetone	16	
75-15-0	Carbon Disulfide	5	U
75-35-4	1.1-Dichloroethene	5	U
75-34-3	1.1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1.2-Dichloroethane	5	U
78-93-3	2-Butanone	4	J
71-55-6	1,1.1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1.2-Dichloropropane	5	U
10061-02-6	cis-1.3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1.1.2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1.3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-13-4	Tetrachloroethene	5	U
79-34-5	1.1.2.2.Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

Date Reported: 3/1/89

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Lab Name: H2M Labs. Inc. Lab Sample ID: Sample No. VBLK
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Water Lab File ID: PU9625 Gibbs & Hill
Sample Vol: 5 ml Date Received:
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 0 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
	No TICs found			

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

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TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: Sample No. VBLK
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9643
Sample Vol: 5 ml Date Received: Gibbs & Hill
Level: Low Date Analyzed: 1/24/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/l	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	15	
67-64-1	Acetone	19	
75-15-0	Carbon Disulfide	5	U
75-35-4	1.1-Dichloroethene	5	U
75-34-3	1.1-Dichloroethane	5	U
540-59-0	1.2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1.2-Dichloroethane	5	U
78-93-3	2-Butanone	7	J
71-55-6	1.1.1-Trichloroethane	4	J
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1.2-Dichloropropane	5	U
10061-02-6	cis-1.3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1.1.2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	trans-1.3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	3	J
591-78-6	2-Hexanone	5	J
127-18-4	Tetrachloroethene	5	U
79-34-5	1.1.2.2.Tetrachloroethane	5	U
108-88-3	Toluene	2	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs, Inc. Lab Sample ID: Sample No. VBLK
Lab Code:--- Case No.------ SAS No.:------ SDG No.:-----
Matrix: Soil Lab File ID: PU9643 Gibbs & Hill
Sample Vol: 5 ml Date Received:
Level: Low Date Analyzed: 1/24/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack

Number TICs found: 0 ug/l

CAS Number	Compound Name	RT	Est. Conc.	Q
	No TICs found			

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: 951195MS Sample No. GW-14MS
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9634
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration	Unit: ug/l
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	24	B
67-64-1	Acetone	9	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1.1-Dichloroethene	*	
75-34-3	1.1-Dichloroethane	5	U
540-59-0	1.2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1.2-Dichloroethane	5	U
78-93-3	2-Butanone	8	BJ
71-55-6	1.1.1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1.2-Dichloropropane	5	U
10061-02-6	cis-1.3-Dichloropropene	5	U
79-01-6	Trichloroethene	*	
124-48-1	Dibromochloromethane	5	U
79-00-5	1.1.2-Trichloroethane	5	U
71-43-2	Benzene	*	
10061-01-5	trans-1.3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1.1.2.2.Tetrachloroethane	5	U
108-88-3	Toluene	*	
108-90-7	Chlorobenzene	*	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

* Analyte is a matrix spike compound

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: 951195MSD Sample No. GW-14MSD
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9635
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/l	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	20	B
67-64-1	Acetone	7	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1.1-Dichloroethene	*	
75-34-3	1.1-Dichloroethane	5	U
540-59-0	1.2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1.2-Dichloroethane	5	U
78-93-3	2-Butanone	8	BJ
71-55-6	1.1.1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1.2-Dichloropropane	5	U
10061-02-6	cis-1.3-Dichloropropene	5	U
79-01-6	Trichloroethene	*	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	*	
10061-01-5	trans-1.3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-13-4	Tetrachloroethene	5	U
79-34-5	1.1.2.2.Tetrachloroethane	5	U
108-88-3	Toluene	*	
108-90-7	Chlorobenzene	*	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

* Analtye is a matrix spike compound

Date Reported: 3/1/89

John J. Molloy, P.E.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951206MS Sample No. SW-2 MS
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9638
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/l	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	7	B
67-64-1	Acetone	6	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1.1-Dichloroethene	*	
75-34-3	1.1-Dichloroethane	5	U
540-59-0	1.2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1.2-Dichloroethane	5	U
78-93-3	2-Butanone	5	BJ
71-55-6	1.1.1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1.2-Dichloropropane	5	U
10061-02-6	cis-1.3-Dichloropropene	5	U
79-01-6	Trichloroethene	*	
124-48-1	Dibromochloromethane	5	U
79-00-5	1.1.2-Trichloroethane	5	U
71-43-2	Benzene	*	
10061-01-5	trans-1.3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1.1.2.2.Tetrachloroethane	5	U
108-88-3	Toluene	*	
108-90-7	Chlorobenzene	*	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

* Analtye is a matrix spike compound

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/1/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs, Inc. Lab Sample ID: 951206MSD Sample No. SW-2 MSD
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Water Lab File ID: PU9639
Sample Vol: 5 ml Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/l	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	B
67-64-1	Acetone	7	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	*	
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-02-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	*	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	*	
10061-01-5	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2,Tetrachloroethane	5	U
108-88-3	Toluene	*	
108-90-7	Chlorobenzene	*	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

* Analtye is a matrix spike compound

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/1/89

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: 951209MS Sample No. SS-1MS
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Soil Lab File ID: PU9645
Sample Wt: 3.93 g Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/23/89
% Moisture: not dec: 75 Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration	Unit: ug/kg
74-87-3	Chloromethane	51	U
74-83-9	Bromomethane	51	U
75-01-4	Vinyl Chloride	51	U
75-00-3	Chloroethane	51	U
75-09-2	Methylene Chloride	300	B
67-64-1	Acetone	590	B
75-15-0	Carbon Disulfide	25	U
75-35-4	1.1-Dichloroethene	*	
75-34-3	1.1-Dichloroethane	25	U
540-59-0	1.2-Dichloroethene (total)	25	U
67-66-3	Chloroform	30	
107-02-2	1.2-Dichloroethane	25	U
78-93-3	2-Butanone	130	B
71-55-6	1.1.1-Trichloroethane	36	B
56-23-5	Carbon Tetrachloride	25	U
108-05-4	Vinyl Acetate	51	U
75-27-4	Bromodichloromethane	25	U
78-87-5	1.2-Dichloropropane	25	U
10061-02-6	cis-1.3-Dichloropropene	25	U
79-01-6	Trichloroethene	*	
124-48-1	Dibromochloromethane	25	U
79-00-5	1.1.2-Trichloroethane	25	U
71-43-2	Benzene	*	
10061-01-5	trans-1.3-Dichloropropene	25	U
75-25-2	Bromoform	25	U
108-10-1	4-Methyl-2-Pentanone	14	JB
591-78-6	2-Hexanone	15	JB
127-18-4	Tetrachloroethene	25	U
79-34-5	1.1.2.2.Tetrachloroethane	25	U
108-88-3	Toluene	*	
108-90-7	Chlorobenzene	*	
100-41-4	Ethylbenzene	25	U
100-42-5	Styrene	25	U
1330-20-7	Xylene (total)	25	U

* Analtye is a matrix spike compound

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/1/89

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

TARGETED COMPOUND LIST - VOLATILE ORGANIC

Lab Name: H2M Labs. Inc. Lab Sample ID: 951209MSD Sample No. SS-1MSD
Lab Code:--- Case No.----- SAS No.: ------- SDG No.:----
Matrix: Soil Lab File ID: PU9646
Sample Wt: 4.14 g Date Received: 1/19/89 Gibbs & Hill
Level: Low Date Analyzed: 1/24/89
% Moisture: not dec: 75 Dilution Factor: 1
Column: Pack C & D Batteries #336001
Groundwater Samples

C.A.S. Number	Compound	Concentration Unit: ug/kg	
74-87-3	Chloromethane	48	U
74-83-9	Bromomethane	48	U
75-01-4	Vinyl Chloride	48	U
75-00-3	Chloroethane	48	U
75-09-2	Methylene Chloride	370	B
67-64-1	Acetone	420	B
75-15-0	Carbon Disulfide	24	U
75-35-4	1.1-Dichloroethene	*	
75-34-3	1.1-Dichloroethane	24	U
540-59-0	1.2-Dichloroethene (total)	24	U
67-66-3	Chloroform	35	
107-02-2	1.2-Dichloroethane	24	U
78-93-3	2-Butanone	85	B
71-55-6	1.1.1-Trichloroethane	21	JB
56-23-5	Carbon Tetrachloride	24	U
108-05-4	Vinyl Acetate	24	
75-27-4	Bromodichloromethane	24	U
78-87-5	1.2-Dichloropropane	24	U
10061-02-6	cis-1.3-Dichloropropene	24	U
79-01-6	Trichloroethene	*	
124-48-1	Dibromochloromethane	24	U
79-00-5	1.1.2-Trichloroethane	24	U
71-43-2	Benzene	*	
10061-01-5	trans-1.3-Dichloropropene	24	U
75-25-2	Bromoform	24	U
108-10-1	4-Methyl-2-Pentanone	48	U
591-78-6	2-Hexanone	48	U
127-18-4	Tetrachloroethene	24	U
79-34-5	1.1.2.2.Tetrachloroethane	24	U
108-88-3	Toluene	*	
108-90-7	Chlorobenzene	*	
100-41-4	Ethylbenzene	24	U
100-42-5	Styrene	24	U
1330-20-7	Xylene (total)	24	U

* Analtye is a matrix spike compound

Date Reported: 3/1/89

John J. Molloy, P.E.
Laboratory Director

F-2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

CASE NARRATIVE FOR SEMI-VOLATILES

C & D Batteries Site

All quality control data and deliverable of this data package meet the requirements of the protocol with the following exceptions:

2,4,6-tribromophenol was just outside the allowable recovery limits (10-123) the recovery was 124%.

Sample SS-2 was re-extracted, the original sample was extracted 1/19/89 and the re-extraction was performed on 2/13/89. A 1:5 dilution of this sample was made due to several analytes exceeding the instruments calibration range. Both the re-extract and the dilution are submitted for review.

Pentachlorophenol for the matrix spike and matrix spike duplicate for GW# 14 were both just outside the allowable range (9-103%); the recoveries were 105% and 110% respectively.

The relative percent difference for SW# 2 were outside of the allowable limit for 1,4 dichlorobenzene, 1,2,4-trichlorbenzene, acenapthene, 2,4-dinitrotoluene, and pyrene. Both the matrix spike and the matrix spike duplicate recoveries were within the allowable ranges but the matrix spike recovery was higher than the matrix spike duplicate recovery.

Pyrene was just outside the allowable percent recovery for the matrix spike and matrix spike duplicate for SS-1. The allowable recoveries are (35-142) and the matrix spike/matrix spike duplicate recoveries was 32% and 30% respectively.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: April 3, 1989

****
* *
* *
****
John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	SBLK 457	83	71	67	32	59	94		0
02	GW #6	68	56	59	33	65	90		0
03	GW #7	81	74	71	29	52	87		0
04	GW #8	77	68	58	35	60	106		0
05	GW #9	63	47	50	39	63	104		0
06	GW #11	82	65	68	34	53	97		0
07	GW #14	63	55	56	26	66	107		0
08	GW #14 MS	81	63	63	31	53	93		0
09	GW #14 MSD	78	68	59	28	50	98		0
10	SBLK 459	95	112	114	72	78	93		0
11	FIELD BLANK	64	62	59	49	82	124 *		1
12	SW #1	71	64	61	27	38	63		0
13	SW #2	66	59	59	26	39	65		0
14	SW #2 MS	101	80	92	28	41	59		0
15	SW #2 MSD	59	58	63	35	48	80		0
16	SBLK 476	57	53	56	36	42	50		0
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		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(35-114)
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)
S3 (TPH)	= Terphenyl-d14	(33-141)
S4 (PHL)	= Phenol-d5	(10-94)
S5 (2FP)	= 2-Fluorophenol	(21-100)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

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FORM II SV-1

1/87 Rev.

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	SS-1	92	76	67	81	77	96		0
02	SS-1 MS	81	63	59	71	69	81		0
03	SS-1 MSD	71	51	51	67	72	68		0
04	SS-2 RE	52	47	106	50	48	84		0
05	SS-2 RE DL	46	61	91	42	33	75		0
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		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl-d14	(18-137)
S4 (PHL)	= Phenol-d5	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

6

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FORM II SV-2

1/87 Rev.

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix Spike - EPA Sample No.: GW #14

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
Phenol	210.00	0.00	82.00	39	112- 89
2-Chlorophenol	220.00	0.00	160.00	73	127-123
1,4-Dichlorobenzene	100.00	0.00	68.00	68	136- 97
N-Nitroso-di-n-prop.(1)	110.00	0.00	80.00	73	141-116
1,2,4-Trichlorobenzene	120.00	0.00	74.00	62	139- 98
4-Chloro-3-methylphenol	200.00	0.00	160.00	80	123- 97
Acenaphthene	110.00	0.00	63.00	57	146-118
4-Nitrophenol	200.00	0.00	80.00	40	110- 80
2,4-Dinitrotoluene	110.00	0.00	82.00	75	124- 96
Pentachlorophenol	210.00	0.00	220.00	105 *	9-103
Pyrene	100.00	0.00	36.00	36	126-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Phenol	210.00	69.00	33	17	42	112- 89
2-Chlorophenol	220.00	170.00	77	5	40	127-123
1,4-Dichlorobenzene	100.00	61.00	61	11	28	136- 97
N-Nitroso-di-n-prop.(1)	110.00	70.00	64	13	38	141-116
1,2,4-Trichlorobenzene	120.00	71.00	59	5	28	139- 98
4-Chloro-3-methylphenol	200.00	150.00	75	6	42	123- 97
Acenaphthene	110.00	58.00	53	7	31	146-118
4-Nitrophenol	200.00	95.00	48	18	50	110- 80
2,4-Dinitrotoluene	110.00	87.00	79	5	38	124- 96
Pentachlorophenol	210.00	230.00	110 *	5	50	9-103
Pyrene	100.00	36.00	36	0	31	126-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of qc limits

RPD: 0 out of 11 outside limits
Spike Recovery: 2 out of 22 outside limits

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COMMENTS:

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H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix Spike - EPA Sample No.: SW #2

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
Phenol	210.00	0.00	54.00	26	12- 89
2-Chlorophenol	220.00	0.00	140.00	64	27-123
1,4-Dichlorobenzene	100.00	0.00	92.00	92	36- 97
N-Nitroso-di-n-prop.(1)	110.00	0.00	120.00	109	41-116
1,2,4-Trichlorobenzene	120.00	0.00	110.00	90	39- 98
4-Chloro-3-methylphenol	200.00	0.00	140.00	70	23- 97
Acenaphthene	110.00	0.00	85.00	77	46-118
4-Nitrophenol	200.00	0.00	49.00	25	10- 80
2,4-Dinitrotoluene	110.00	0.00	99.00	90	24- 96
Pentachlorophenol	210.00	0.00	130.00	62	9-103
Pyrene	100.00	0.00	55.00	55	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Phenol	210.00	82.00	39	40	42	12- 89
2-Chlorophenol	220.00	160.00	73	13	40	27-123
1,4-Dichlorobenzene	100.00	59.00	59	44 *	28	36- 97
N-Nitroso-di-n-prop.(1)	110.00	81.00	74	38	38	41-116
1,2,4-Trichlorobenzene	120.00	66.00	55	48 *	28	39- 98
4-Chloro-3-methylphenol	200.00	140.00	70	0	42	23- 97
Acenaphthene	110.00	58.00	53	37 *	31	46-118
4-Nitrophenol	200.00	68.00	34	31	50	10- 80
2,4-Dinitrotoluene	110.00	63.00	57	51 *	38	24- 96
Pentachlorophenol	210.00	170.00	81	26	50	9-103
Pyrene	100.00	37.00	37	39 *	31	26-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of qc limits

RPD: 5 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

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COMMENTS:

C-65

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix Spike - EPA Sample No.: SS-1 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	56000.00	0.00	34000.00	61	126- 90
2-Chlorophenol	59000.00	0.00	34000.00	58	125-102
1,4-Dichlorobenzene	27000.00	0.00	17000.00	63	128-104
N-Nitroso-di-n-prop.(1)	29000.00	0.00	24000.00	83	141-126
1,2,4-Trichlorobenzene	32000.00	0.00	20000.00	63	138-107
4-Chloro-3-methylphenol	53000.00	0.00	39000.00	74	126-103
Acenaphthene	29000.00	0.00	16000.00	55	131-137
4-Nitrophenol	53000.00	0.00	45000.00	85	111-114
2,4-Dinitrotoluene	29000.00	0.00	20000.00	69	128- 89
Pentachlorophenol	56000.00	0.00	36000.00	64	117-109
Pyrene	27000.00	0.00	8700.00	32 *	135-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	56000.00	30000.00	54	10	35	126- 90
2-Chlorophenol	59000.00	30000.00	51	13	50	125-102
1,4-Dichlorobenzene	27000.00	16000.00	59	7	27	128-104
N-Nitroso-di-n-prop.(1)	29000.00	23000.00	79	5	38	141-126
1,2,4-Trichlorobenzene	32000.00	17000.00	53	17	23	138-107
4-Chloro-3-methylphenol	53000.00	35000.00	66	11	33	126-103
Acenaphthene	29000.00	14000.00	48	14	19	131-137
4-Nitrophenol	53000.00	37000.00	70	19	50	111-114
2,4-Dinitrotoluene	29000.00	17000.00	59	16	47	128- 89
Pentachlorophenol	56000.00	32000.00	57	12	47	117-109
Pyrene	27000.00	8100.00	30 *	6	36	135-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of qc limits

RPD: 0 out of 11 outside limits
Spike Recovery: 2 out of 22 outside limits

COMMENTS: _____

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Lab File ID: >P5506 Lab Sample ID: SBLK 457

Date Extracted 01/20/89 Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 2/03/89 Time Analyzed: 13:56

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: 70 2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	GW #6	951190	>P5507	2/03/89
02	GW #7	951191	>P5508	2/03/89
03	GW #8	951192	>P5509	2/03/89
04	GW #9	951193	>P5510	2/03/89
05	GW #11	951194	>P5511	2/03/89
06	GW #14	951195	>P5512	2/03/89
07	GW #14 MS	951195 MS	>P5513	2/03/89
08	GW #14 MSD	951195 MSD	>P5514	2/03/89
09	FIELD BLANK	951196	>P5517	2/05/89
10	SW #1	951205	>P5518	2/05/89
11	SW #2	951206	>P5519	2/05/89
12	SW #2 MS	951206 MS	>P5520	2/05/89
13	SW #2 MSD	951206 MSD	>P5521	2/05/89
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COMMENTS:

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FORM IV SV

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Lab File ID: >P5516 Lab Sample ID: SBLK 459

Date Extracted 01/24/89 Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 2/05/89 Time Analyzed: 15:56

Matrix: (soil/water) SOIL Level: (low/med) LOW

Instrument ID: 70 2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SS-1	951209	>P5522	2/05/89
02	SS-1 MS	951209 MS	>P5523	2/05/89
03	SS-1 MSD	951209 MSD	>P5524	2/05/89
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COMMENTS:

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

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SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Lab File ID: >E0010 Lab Sample ID: SBLK 476

Date Extracted 02/13/89 Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 2/19/89 Time Analyzed: 15:01

Matrix: (soil/water) SOIL Level: (low/med) LOW

Instrument ID: 70 2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SS-2 RE	951210 RE	>E0011	2/19/89
02	SS-2 RE DL	951210 RE DL	>E0012	2/19/89
03				
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COMMENTS:

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FORM IV SV

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #6

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951190

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5507

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sep/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

FORM I SV-1 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #6

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951190

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5507

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	24.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

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(1) - Cannot be separated from Diphenylamine

Date Reported: 3/10/89

Jon Stan
Jon Jacobsen, P.E.
Laboratory Director

FORM I SV-2 C-71 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW #6

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951190

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5507

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Non-targeted compounds were found.			
2.				
3.				
4.				
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John J. Molloy, P.E.
Laboratory Director

21

Date Reported: 3/10/89

FORM I SV-TIC C-72 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #7

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951191

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5508

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

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FORM I SV-1 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
GW #7

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951191

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5508

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	19.	B
117-84-0	Di-n-octyl_Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

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(1) - Cannot be separated from Diphenylamine

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

FORM I SV-2 C-74 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW #7

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951191

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5508

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec.-- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 1

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	9.66	8.	J
2.				
3.				
4.				
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John J. Mallon P.E.
Laboratory Director

24

Date Reported: 3/10/89

FORM I SV-TIC C-75 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #8

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951192

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5509

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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John J. Molloy P.E.
Laboratory Director

Date Reported: 3/10/89

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #8

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951192

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5509

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	32.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW #8

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #8

Matrix: (soil/water) WATER Lab Sample ID: 951192

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5509

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sep/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	21964498	1,13-Tetradecadiene (8CI,9CI)	29.20	38.	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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27.					
28.					
29.					
30.					

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

H2M LABS., INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #9

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951193

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5510

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Mullaney P.E.
Laboratory Director

Date Reported: 3/10/89

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #9

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951193

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5510

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	34.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

Date Reported: 3/10/89

John J. Malloy, P.E.
Laboratory Director
C-80

FORM I SV-2

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW #9

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951193

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5510

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	21964498	1,13-Tetradecadiene (8CI9CI)	29.20	20.	J
2.					
3.					
4.					
5.					
6.					
7.					
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John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #11

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951194

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5511

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec.-- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

FORM I SV-1 C-82 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #11

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951194

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5511

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	21.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

Date Reported: 3/10/89

J. McAlloy, P.E.
Laboratory Director

C-83

FORM I SV-2 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW #11

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951194

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5511

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	21964-98	1,13-Tetradecadiene (8CI9CI)	29.22	14.	J
2.					
3.					
4.					
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30.					

John J. Molloy, P.E.
Laboratory Director

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Date Reported: 3/10/89

FORM I SV-TIC C-84 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW #14

Lab Name: H2M LABS INC. Contract: ----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951195

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5512

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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John J. Molloy, P.E.
Laboratory Director
C-85

Date Reported: 3/10/89

FORM I SV-1

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #14

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951195

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5512

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	25.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

FORM I SV-2 C-86 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW #14

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951195

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5512

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	14.46	8.	J
2.	1731846	Nonanoic acid, methyl ester	16.47	52.	J
3.		Unknown	21.71	46.	J
4.	7459338	9,12-Octadecadienoyl chlorid	29.65	10.	J
5.					
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John J. Molloy, P.E.
Laboratory Director

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Date Reported: 3/10/89

FORM I SV-TIC C-87 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951196

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5517

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. M[illegible], P.E.
Laboratory Director

Date Reported: 3/10/89

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FORM I SV-1

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951196

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5517

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	31.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

C-89

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIELD BLANK

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951196

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5517

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	17312822	Undecane, 4,6-dimethyl- (8CI	13.97	8.	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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17.					
18.					
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26.					
27.					
28.					
29.					
30.					

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

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FORM I SV-TIC

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW #1

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951205

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5518

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Mollov, P.E.
Laboratory Director

Date Reported: 3/10/89

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

SW #1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951205

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5518

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.	JB
117-84-0	Di-n-octyl_Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

John [illegible] Laboratory Director

Date Reported: 3/10/89

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SW #1

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951205

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5518

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No non-targeted compounds were found.			
2.				
3.				
4.				
5.				
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John J. Molloy, P.E.
Laboratory Director

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Date Reported: 3/10/89

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FORM 1 SV-TIC

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW #2

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951206

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >F5519

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

FORM I SV-1 C-94 1/87 Rev.

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW #2

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951206

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5519

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	13.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

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(1) - Cannot be separated from Diphenylamine

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

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FORM I SV-2

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SW #2

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951206

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5519

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	21964498	1,13-Tetradecadiene (8CI9CI)	29.33	14.	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

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FORM I SV-TIC

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-1

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951209

Sample wt/vol: 30.0691(g/mL) G Lab File ID: >P5522

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.79 dec. -- Date Extracted: 01/24/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	1300.	U
111-44-4	bis(-2-Chloroethyl)Ether	1300.	U
95-57-8	2-Chlorophenol	1300.	U
541-73-1	1,3-Dichlorobenzene	1300.	U
106-46-7	1,4-Dichlorobenzene	1300.	U
100-51-6	Benzyl alcohol	1300.	U
95-50-1	1,2-Dichlorobenzene	1300.	U
95-48-7	2-Methylphenol	1300.	U
39638-32-9	bis(2-chloroisopropyl)ether	1300.	U
106-44-5	4-Methylphenol	1300.	U
621-64-7	N-Nitroso-Di-n-propylamine	1300.	U
67-72-1	Hexachloroethane	1300.	U
98-95-3	Nitrobenzene	1300.	U
78-59-1	Isophorone	1300.	U
88-75-5	2-Nitrophenol	1300.	U
105-67-9	2,4-Dimethylphenol	1300.	U
65-85-0	Benzoic acid	6500.	U
111-91-1	bis(-2-Chloroethoxy)methane	1300.	U
120-83-2	2,4-Dichlorophenol	1300.	U
120-82-1	1,2,4-Trichlorobenzene	1300.	U
91-20-3	Naphthalene	1300.	U
106-47-8	4-Chloroaniline	1300.	U
87-68-3	Hexachlorobutadiene	1300.	U
59-50-7	4-Chloro-3-methylphenol	1300.	U
91-57-6	2-Methylnaphthalene	1300.	U
77-47-4	Hexachlorocyclopentadiene	1300.	U
88-06-2	2,4,6-Trichlorophenol	1300.	U
95-95-4	2,4,5-Trichlorophenol	6500.	U
91-58-7	2-Chloronaphthalene	1300.	U
88-74-4	2-Nitroaniline	6500.	U
131-11-3	Dimethyl Phthalate	1300.	U
208-96-8	Acenaphthylene	1300.	U
606-20-2	2,6-Dinitrotoluene	1300.	U

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

FORM I SV-1 C-97 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-1

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951209

Sample wt/vol: 30.0691(g/mL) G Lab File ID: >P5522

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.75 dec. -- Date Extracted: 01/24/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
99-09-2	3-Nitroaniline	6500.	U
83-32-9	Acenaphthene	1300.	U
51-28-5	2,4-Dinitrophenol	6500.	U
100-02-7	4-Nitrophenol	6500.	U
132-64-9	Dibenzofuran	1300.	U
121-14-2	2,4-Dinitrotoluene	1300.	U
84-66-2	Diethylphthalate	1300.	U
7005-72-3	4-Chlorophenyl-phenylether	1300.	U
86-73-7	Fluorene	1300.	U
100-01-6	4-Nitroaniline	6500.	U
534-52-1	4,6-Dinitro-2-methylphenol	6500.	U
86-30-6	N-Nitrosodiphenylamine (1)	1300.	U
101-55-3	4-Bromophenyl-phenylether	1300.	U
118-74-1	Hexachlorobenzene	1300.	U
87-86-5	Pentachlorophenol	6500.	U
85-01-8	Phenanthrene	1300.	U
120-12-7	Anthracene	1300.	U
84-74-2	Di-n-butylphthalate	1300.	U
206-44-0	Fluoranthene	1300.	U
129-00-0	Pyrene	1300.	U
85-68-7	Butylbenzylphthalate	1300.	U
91-94-1	3,3'-Dichlorobenzidine	2600.	U
56-55-3	Benzo(a)anthracene	1300.	U
218-01-9	Chrysene	1300.	U
117-81-7	bis(2-Ethylhexyl)phthalate	800.	JB
117-84-0	Di-n-octyl Phthalate	1300.	U
205-99-2	Benzo(b)fluoranthene	1300.	U
207-08-9	Benzo(k)fluoranthene	1300.	U
50-32-8	Benzo(a)pyrene	1300.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1300.	U
53-70-3	Dibenzo(a,h)anthracene	1300.	U
191-24-2	Benzo(g,h,i)perylene	1300.	U

(1) - Cannot be separated from Diphenylamine

Date Reported: 3/10/89

John de Molloy, P.E.
Laboratory Director

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SS-1

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951209

Sample wt/vol: 30.0c91(g/mL) G Lab File ID: >P5522

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.75 dec. -- Date Extracted: 01/24/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00000

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.93	530.	J
2.	141797	3-Penten-2-one, 4-methyl- (8	6.29	2500.	JA
3.		Unknown	6.76	670.	J
4.		Unknown	7.62	800.	J
5.	79345	Ethane, 1,1,2,2-tetrachloro-	9.45	2100.	JB
6.	17312822	Undecane, 4,6-dimethyl- (8CI	13.97	1100.	J
7.	56554359	9,17-Octadecadienal, (Z)- (9	29.66	1500.	J
8.					
9.					
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John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

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FORM I SV-TIC 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-2 RE

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951210 RE

Sample wt/vol: 30.0270(g/mL) G Lab File ID: >E0011

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.21 dec. -- Date Extracted: 02/13/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/19/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	420.	U
111-44-4	bis(-2-Chloroethyl)Ether	420.	U
95-57-8	2-Chlorophenol	420.	U
541-73-1	1,3-Dichlorobenzene	420.	U
106-46-7	1,4-Dichlorobenzene	420.	U
100-51-6	Benzyl alcohol	420.	U
95-50-1	1,2-Dichlorobenzene	420.	U
95-48-7	2-Methylphenol	420.	U
39638-32-9	bis(2-chloroisopropyl)ether	420.	U
106-44-5	4-Methylphenol	420.	U
621-64-7	N-Nitroso-Di-n-propylamine	420.	U
67-72-1	Hexachloroethane	420.	U
98-95-3	Nitrobenzene	420.	U
78-59-1	Isophorone	420.	U
88-75-5	2-Nitrophenol	420.	U
105-67-9	2,4-Dimethylphenol	420.	U
65-85-0	Benzoic acid	2100.	U
111-91-1	bis(-2-Chloroethoxy)methane	420.	U
120-83-2	2,4-Dichlorophenol	420.	U
120-82-1	1,2,4-Trichlorobenzene	420.	U
91-20-3	Naphthalene	340.	J
106-47-8	4-Chloroaniline	420.	U
87-68-3	Hexachlorobutadiene	420.	U
59-50-7	4-Chloro-3-methylphenol	420.	U
91-57-6	2-Methylnaphthalene	150.	J
77-47-4	Hexachlorocyclopentadiene	420.	U
88-06-2	2,4,6-Trichlorophenol	420.	U
95-95-4	2,4,5-Trichlorophenol	2100.	U
91-58-7	2-Chloronaphthalene	420.	U
88-74-4	2-Nitroaniline	2100.	U
131-11-3	Dimethyl Phthalate	420.	U
208-96-8	Acenaphthylene	420.	U
606-20-2	2,6-Dinitrotoluene	420.	U

John J. Mooney, P.E.
Laboratory Director

Date Reported: 3/10/89

C100

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1/87 Rev.

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-2 RE

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951210 RE

Sample wt/vol: 30.0270(g/mL) G Lab File ID: >E0011

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.21 dec. -- Date Extracted: 02/13/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/19/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	2100.	U
83-32-9	Acenaphthene	1100.	
51-28-5	2,4-Dinitrophenol	2100.	U
100-02-7	4-Nitrophenol	2100.	U
132-64-9	Dibenzofuran	500.	
121-14-2	2,4-Dinitrotoluene	420.	U
84-66-2	Diethylphthalate	420.	U
7005-72-3	4-Chlorophenyl-phenylether	420.	U
86-73-7	Fluorene	1000.	
100-01-6	4-Nitroaniline	2100.	U
534-52-1	4,6-Dinitro-2-methylphenol	2100.	U
86-30-6	N-Nitrosodiphenylamine (1)	420.	U
101-55-3	4-Bromophenyl-phenylether	420.	U
118-74-1	Hexachlorobenzene	420.	U
87-86-5	Pentachlorophenol	2100.	U
85-01-8	Phenanthrene	5500.	
120-12-7	Anthracene	920.	
84-74-2	Di-n-butylphthalate	420.	U
206-44-0	Fluoranthene	8800.	D
129-00-0	Pyrene	9600.	D
85-68-7	Butylbenzylphthalate	420.	U
91-94-1	3,3'-Dichlorobenzidine	840.	U
56-55-3	Benzo(a)anthracene	4900.	
218-01-9	Chrysene	3800.	
117-81-7	bis(2-Ethylhexyl)phthalate	19000.	BD
117-84-0	Di-n-octyl Phthalate	420.	U
205-99-2	Benzo(b)fluoranthene	3900.	
207-08-9	Benzo(k)fluoranthene	4100.	
50-32-8	Benzo(a)pyrene	3400.	
193-39-5	Indeno(1,2,3-cd)pyrene	1800.	
53-70-3	Dibenzo(a,h)anthracene	760.	
191-24-2	Benzo(g,h,i)perylene	1200.	

(1) - Cannot be separated from Diphenylamine

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SS-2 RE

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-2

Matrix: (soil/water) SOIL Lab Sample ID: 951210 RE

Sample wt/vol: 30.0270(g/mL) G Lab File ID: >E0011

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.21 dec. -- Date Extracted: 02/13/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/19/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00000

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	5.05	1200.	J
2.	86748	9H-Carbazole (9CI)	26.49	420.	J
3.	832713	Phenanthrene, 3-methyl- (8CI	27.27	310.	J
4.	4505480	1H-Indene, 2-phenyl- (9CI)	27.37	260.	J
5.	203645	4H-Cyclopenta[def]phenanthre	27.61	460.	J
6.	612942	Naphthalene, 2-phenyl- (8CI9	28.25	190.	J
7.	238846	11H-Benzo[a]fluorene (8CI9CI	31.33	1100.	J
8.	243174	11H-Benzo[b]fluorene (8CI9CI	31.54	730.	J
9.	3353126	Pyrene, 4-methyl- (8CI9CI)	31.62	330.	J
10.		Unknown	31.70	280.	J
11.	84151	1,1':2',1''-Terphenyl (9CI)	32.65	250.	J
12.	82053	7H-Benz[de]anthracen-7-one (	32.92	400.	J
13.	205436	Benzo[b]naphtho[1,2-d]thioph	33.22	220.	J
14.	203123	Benzo[ghi]fluoranthene (8CI9	33.35	370.	J
15.		Unknown	33.45	280.	J
16.	195197	Benzo[c]phenanthrene (8CI9CI	34.38	290.	J
17.	2381319	Benz[a]anthracene, 8-methyl-	35.43	200.	J
18.	2498773	Benz[a]anthracene, 1-methyl-	35.53	200.	J
19.		Unknown	35.68	250.	J
20.		Unknown	35.99	240.	J
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22.					
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John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

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FORM I SV-TIC

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-2 PE DL

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix (soil/water): SOIL Lab Sample ID: 951210 RE DL

Sample wt/vol: 30.0270(g/mL) G Lab File ID: >E0012

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.21 dec. -- Date Extracted: 02/13/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/19/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 5.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	2100.	U
111-44-4	bis(-2-Chloroethyl)Ether	2100.	U
95-57-8	2-Chlorophenol	2100.	U
541-73-1	1,3-Dichlorobenzene	2100.	U
106-46-7	1,4-Dichlorobenzene	2100.	U
100-51-6	Benzyl alcohol	2100.	U
95-50-1	1,2-Dichlorobenzene	2100.	U
95-48-7	2-Methylphenol	2100.	U
39638-32-9	bis(2-chloroisopropyl)ether	2100.	U
106-44-5	4-Methylphenol	2100.	U
621-64-7	N-Nitroso-Di-n-propylamine	2100.	U
67-72-1	Hexachloroethane	2100.	U
98-95-3	Nitrobenzene	2100.	U
78-59-1	Isophorone	2100.	U
88-75-5	2-Nitrophenol	2100.	U
105-67-9	2,4-Dimethylphenol	2100.	U
65-85-0	Benzoic acid	11000.	U
111-91-1	bis(-2-Chloroethoxy)methane	2100.	U
120-83-2	2,4-Dichlorophenol	2100.	U
120-82-1	1,2,4-Trichlorobenzene	2100.	U
91-20-3	Naphthalene	360.	JD
106-47-8	4-Chloroaniline	2100.	U
87-68-3	Hexachlorobutadiene	2100.	U
59-50-7	4-Chloro-3-methylphenol	2100.	U
91-57-6	2-Methylnaphthalene	2100.	U D
77-47-4	Hexachlorocyclopentadiene	2100.	U
88-06-2	2,4,6-Trichlorophenol	2100.	U
95-95-	2,4,5-Trichlorophenol	11000.	U
91-58-7	2-Chloronaphthalene	2100.	U
88-74-4	2-Nitroaniline	11000.	U
131-11-3	Dimethyl Phthalate	2100.	U
208-96-8	Acenaphthylene	2100.	U
606-20-2	2,6-Dinitrotoluene	2100.	U

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

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FORM I SV-1 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-2 RE DL

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951210 RE DL

Sample wt/vol: 30.0270(g/mL) G Lab File ID: >E0012

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.21 dec. -- Date Extracted: 02/13/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/19/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 5.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	11000.	U
83-32-9	Acenaphthene	1200.	JD
51-28-5	2,4-Dinitrophenol	11000.	U
100-02-7	4-Nitrophenol	11000.	U
132-64-9	Dibenzofuran	500.	JD
121-14-2	2,4-Dinitrotoluene	2100.	U
84-66-2	Diethylphthalate	2100.	U
7005-72-3	4-Chlorophenyl-phenylether	2100.	U
86-73-7	Fluorene	1000.	JD
100-01-6	4-Nitroaniline	11000.	U
534-52-1	4,6-Dinitro-2-methylphenol	11000.	U
86-30-6	N-Nitrosodiphenylamine (1)	2100.	U
101-55-3	4-Bromophenyl-phenylether	2100.	U
118-74-1	Hexachlorobenzene	2100.	U
87-86-5	Pentachlorophenol	11000.	U
85-01-8	Phenanthrene	6800.	
120-12-7	Anthracene	1200.	JD
84-74-2	Di-n-butylphthalate	2100.	U
206-44-0	Fluoranthene	13000.	
129-00-0	Pyrene	9500.	
85-68-7	Butylbenzylphthalate	2100.	U
91-94-1	3,3'-Dichlorobenzidine	4200.	U
56-55-3	Benzo(a)anthracene	5300.	
218-01-9	Chrysene	5500.	
117-81-7	bis(2-Ethylhexyl)phthalate	32000.	B
117-84-0	Di-n-octyl Phthalate	2100.	U
205-99-2	Benzo(b)fluoranthene	6900.	
207-08-9	Benzo(k)fluoranthene	6300.	
50-32-8	Benzo(a)pyrene	5900.	
193-39-5	Indeno(1,2,3-cd)pyrene	3800.	
53-70-3	Dibenzo(a,h)anthracene	*1600.	JD
191-24-2	Benzo(g,h,i)perylene	*3100.	

(1) - Cannot be separated from Diphenylamine

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

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FORM I SV-2 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

SS-2 RE DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951210 RE DL

Sample wt/vol: 30.0270 (g/mL) G Lab File ID: SE0012

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec. 21 dec. -- Date Extracted: 02/13/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/19/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 5.00000

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	867-8	9H-Carbazole (9CI)	26.43	900.	J
2.	203645	4H-Cyclopenta[def]phenanthre	27.55	1300.	J
3.	84651	9,10-Anthracenedione (9CI)	28.23	1200.	J
4.	238846	11H-Benzo[a]fluorene (8CI9CI	31.23	1800.	J
5.	243174	11H-Benzo[b]fluorene (8CI9CI	31.41	950.	J
6.	82053	7H-Benz[de]anthracen-7-one (	32.83	1200.	J
7.	203123	Benzo[ghi]fluoranthene (8CI9	33.26	850.	J
8.		Unknown	35.88	1100.	J
9.	192972	Benzo[e]pyrene (8CI9CI)	37.36	1400.	J
10.	~~50328~~	~~Benzo[a]pyrene (8CI9CI)~~	37.79	4700.	J
11.	205823	Benzo(j) fluoranthene			
12.					
13.					
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John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK 457

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: (soil/water) WATER Lab Sample ID: SBLK 457

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5506

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK 457

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: (soil/water) WATER Lab Sample ID: SBLK 457

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5506

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	27.	
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

C-107

FORM I SV-2 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK 457

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: (soil/water) WATER Lab Sample ID: SBLK 457

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5506

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

Number TICs found: 3

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	1-0034	9-Octadecenoic acid, 12-(ace	27.48	10.	J
2.	7459338	9,12-Octadecadienoyl chlorid	29.68	14.	J
3.		Unkhown	36.83	10.	J
4.					
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John J. Molloy, P.E.
Laboratory Director

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Date Reported: 3/10/89

C-108

FORM I SV-TIC

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK 459

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 459

Sample wt/vol: 250 (g/mL) ML Lab File ID: >P5516

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 01/24/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	330.	U
111-44-4	bis(-2-Chloroethyl)Ether	330.	U
95-57-8	2-Chlorophenol	330.	U
541-73-1	1,3-Dichlorobenzene	330.	U
106-46-7	1,4-Dichlorobenzene	330.	U
100-51-6	Benzyl alcohol	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
39638-32-9	bis(2-chloroisopropyl)ether	330.	U
106-44-5	4-Methylphenol	330.	U
621-64-7	N-Nitroso-Di-n-propylamine	330.	U
67-72-1	Hexachloroethane	330.	U
98-95-3	Nitrobenzene	330.	U
78-59-1	Isophorone	330.	U
88-75-5	2-Nitrophenol	330.	U
105-67-9	2,4-Dimethylphenol	330.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(-2-Chloroethoxy)methane	330.	U
120-83-2	2,4-Dichlorophenol	330.	U
120-82-1	1,2.4-Trichlorobenzene	330.	U
91-20-3	Naphthalene	330.	U
106-47-8	4-Chloroaniline	330.	U
87-68-3	Hexachlorobutadiene	330.	U
59-50-7	4-Chloro-3-methylphenol	330.	U
91-57-6	2-Methylnaphthalene	330.	U
77-47-4	Hexachlorocyclopentadiene	330.	U
88-06-2	2,4,6-Trichlorophenol	330.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethyl Phthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

C-109

FORM I SV-1 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK 459

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 459

Sample wt/vol: 250 (g/mL) ML Lab File ID: >P5516

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 01/24/89

Extraction: (Sep/Cont Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	330.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	330.	U
121-14-2	2,4-Dinitrotoluene	330.	U
84-66-2	Diethylphthalate	330.	U
7005-72-3	4-Chlorophenyl-phenylether	330.	U
86-73-7	Fluorene	330.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	330.	U
101-55-3	4-Bromophenyl-phenylether	330.	U
118-74-1	Hexachlorobenzene	330.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	330.	U
84-74-2	Di-n-butylphthalate	330.	U
206-44-0	Fluoranthene	330.	U
129-00-0	Pyrene	330.	U
85-68-7	Butylbenzylphthalate	330.	U
91-94-1	3,3'-Dichlorobenzidine	670.	U
56-55-3	Benzo(a)anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	790.	
117-84-0	Di-n-octyl Phthalate	330.	U
205-99-2	Benzo(b)fluoranthene	330.	U
207-08-9	Benzo(k)fluoranthene	330.	U
50-32-8	Benzo(a)pyrene	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U
53-70-3	Dibenzo(a,h)anthracene	330.	U
191-24-2	Benzo(g,h,i)perylene	330.	U

(1) - Cannot be separated from Diphenyl

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SBLK 459

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 459

Sample wt/vol: 250 (g/mL) ML Lab File ID: >P5516

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 01/24/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	79345	Ethane, 1,1,2,2-tetrachloro-	9.34	900.	J
2.					
3.					
4.					
5.					
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John J. Molloy, P.E.
Laboratory Director

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Date Reported: 3/10/89

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FORM I SV-TIC

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

1E

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK 476

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: (soil/water) WATER Lab Sample ID: SBLK 476

Sample wt/vol: 250 (g/mL) ML Lab File ID: >E0010

Level: (low/med) LOW Date Received: --------

% Moisture: not dec. -- dec. -- Date Extracted: 02/13/89

Extraction: (Sep/Cont/Sonc) SONC Date Analyzed: 2/19/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	330.	U
111-44-4	bis(-2-Chloroethyl)Ether	330.	U
95-57-8	2-Chlorophenol	330.	U
541-73-1	1,3-Dichlorobenzene	330.	U
106-46-7	1,4-Dichlorobenzene	330.	U
100-51-6	Benzyl alcohol	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
39638-32-9	bis(2-chloroisopropyl)ether	330.	U
106-44-5	4-Methylphenol	330.	U
621-64-7	N-Nitroso-Di-n-propylamine	330.	U
67-72-1	Hexachloroethane	330.	U
98-95-3	Nitrobenzene	330.	U
78-59-1	Isophorone	330.	U
88-75-5	2-Nitrophenol	330.	U
105-67-9	2,4-Dimethylphenol	330.	U
65-85-0	Benzoic acid	1700.	U
111-91-1	bis(-2-Chloroethoxy)methane	330.	U
120-83-2	2,4-Dichlorophenol	330.	U
120-82-1	1,2,4-Trichlorobenzene	330.	U
91-20-3	Naphthalene	220.	U
106-47-8	4-Chloroaniline	330.	U
87-68-3	Hexachlorobutadiene	330.	U
59-50-7	4-Chloro-3-methylphenol	330.	U
91-57-6	2-Methylnaphthalene	330.	U
77-47-4	Hexachlorocyclopentadiene	330.	U
88-06-2	2,4,6-Trichlorophenol	330.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethyl Phthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U

John J. Molloy, P.E.
Laboratory Director
C-112

Date Reported: 3/10/89

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FORM I SV-1

1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK 476

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: (soil/water) WATER Lab Sample ID: SBLK 476

Sample wt/vol: 250 (g/mL) ML Lab File ID: >E0010

Level: (low/med) LOW Date Received: --------

% Moisture: not dec. -- dec. -- Date Extracted: 02/13/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/19/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	330.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	330.	U
121-14-2	2,4-Dinitrotoluene	330.	U
84-66-2	Diethylphthalate	330.	U
7005-72-3	4-Chlorophenyl-phenylether	330.	U
86-73-7	Fluorene	330.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	330.	U
101-55-3	4-Bromophenyl-phenylether	330.	U
118-74-1	Hexachlorobenzene	330.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	330.	U
84-74-2	Di-n-butylphthalate	330.	U
206-44-0	Fluoranthene	330.	U
129-00-0	Pyrene	330.	U
85-68-7	Butylbenzylphthalate	330.	U
91-94-1	3,3'-Dichlorobenzidine	670.	U
56-55-3	Benzo(a) anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	870.	B
117-84-0	Di-n-octyl Phthalate	330.	U
205-99-2	Benzo(b)fluoranthene	330.	U
207-08-9	Benzo(k)fluoranthene	330.	U
50-32-8	Benzo(a)pyrene	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U
53-70-3	Dibenzo(a,h)anthracene	330.	U
191-24-2	Benzo(g,h,i)perylene	330.	U

(1) - Cannot be separated from Diphenylamine

John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

C-113

FORM I SV-2 1/87 Rev.

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SBLK 476

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 476

Sample wt/vol: 250 (g/mL) ML Lab File ID: E0010

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 02/13/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/19/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	79345	Ethane, 1,1,2,2-tetrachloro-	9.41	200.	J
2.					
3.					
4.					
5.					
6.					
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John J. Molloy, P.E.
Laboratory Director

Date Reported: 3/10/89

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FORM I SV-TIC

1/87 Rev.

H2M LABS., INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #14 MS

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951195 MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5513

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

Date Reported: 3/10/89

FORM I SV-1 1/87 Rev.

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

| GW #14 MS |

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951195 MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5513

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
51-28-5	2,4-Dinitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	16.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #14 MSD

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951195 MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5514

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

FORM I SV-1 1/87 Rev.

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

C-117

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW #14 MSD

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951195 MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5514

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/03/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
51-28-5	2,4-Dinitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	160.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

Date Reported: 3/10/89

FORM I SV-2

1/87 Rev.

John J. Molloy, P.E.
Laboratory Director

C-118

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW #2 MS

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951206 MS

Sample wt/vol: 1000 (g/ml) ML Lab File ID: >P5520

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

FORM I SV-1 1/87 Rev.

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

C-119

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW #2 MS

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951206 MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5520

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
51-28-5	2,4-Dinitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	16.	B
117-84-0	Di-n-octyl Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

C-120

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW #2 MSD

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951206 MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5521

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
111-44-4	bis(-2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(-2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethyl Phthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

FORM I SV-1 1/87 Rev.

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

C-121

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW #2 MSD

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: GW #6

Matrix: (soil/water) WATER Lab Sample ID: 951206 MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5521

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.-- dec. -- Date Extracted: 01/20/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: -- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
51-28-5	2,4-Dinitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	24.	B
117-84-0	Di-n-octyl_Phthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

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C-122

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-1 MS

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951209 MS

Sample wt/vol: 30.0-55(g/mL) G Lab File ID: >P5523

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.75 dec. -- Date Extracted: 01/24/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(-2-Chloroethyl)Ether	1300.	U
541-73-1	1,3-Dichlorobenzene	1300.	U
100-51-6	Benzyl alcohol	1300.	U
95-50-1	1,2-Dichlorobenzene	1300.	U
95-48-7	2-Methylphenol	1300.	U
39638-32-9	bis(2-chloroisopropyl)ether	1300.	U
106-44-5	4-Methylphenol	1300.	U
67-72-1	Hexachloroethane	1300.	U
98-95-3	Nitrobenzene	1300.	U
78-59-1	Isophorone	1300.	U
88-75-5	2-Nitrophenol	1300.	U
105-67-9	2,4-Dimethylphenol	1300.	U
65-85-0	Benzoic acid	6500.	U
111-91-1	bis(-2-Chloroethoxy)methane	1300.	U
120-83-2	2,4-Dichlorophenol	1300.	U
91-20-3	Naphthalene	1300.	U
106-47-8	4-Chloroaniline	1300.	U
87-68-3	Hexachlorobutadiene	1300.	U
91-57-6	2-Methylnaphthalene	1300.	U
77-47-4	Hexachlorocyclopentadiene	1300.	U
88-06-2	2,4,6-Trichlorophenol	1300.	U
95-95-4	2,4,5-Trichlorophenol	6500.	U
91-58-7	2-Chloronaphthalene	1300.	U
88-74-4	2-Nitroaniline	6500.	U
131-11-3	Dimethyl Phthalate	1300.	U
208-96-8	Acenaphthylene	1300.	U
606-20-2	2,6-Dinitrotoluene	1300.	U

FORM I SV-1 1/87 Rev.

Date Reported: 3/10/89

John J. Molloy, P.E.
Laboratory Director

C-123

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-1 MS

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951209 MS

Sample wt/vol: 30.0455(g/mL) G Lab File ID: >P5523

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.75 dec. -- Date Extracted: 01/24/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	6500.	U
51-28-5	2,4-Dinitrophenol	6500.	U
132-64-9	Dibenzofuran	1300.	U
84-66-2	Diethylphthalate	1300.	U
7005-72-3	4-Chlorophenyl-phenylether	1300.	U
86-73-7	Fluorene	1300.	U
100-01-6	4-Nitroaniline	6500.	U
534-52-1	4,6-Dinitro-2-methylphenol	6500.	U
86-30-6	N-Nitrosodiphenylamine (1)	1300.	U
101-55-3	4-Bromophenyl-phenylether	1300.	U
118-74-1	Hexachlorobenzene	1300.	U
85-01-8	Phenanthrene	1300.	U
120-12-7	Anthracene	1300.	U
84-74-2	Di-n-butylphthalate	1300.	U
206-44-0	Fluoranthene	1300.	U
85-68-7	Butylbenzylphthalate	1300.	U
91-94-1	3,3'-Dichlorobenzidine	2600.	U
56-55-3	Benzo(a)anthracene	1300.	U
218-01-9	Chrysene	1300.	U
117-81-7	bis(2-Ethylhexyl)phthalate	800.	JB
117-84-0	Di-n-octyl_Phthalate	1300.	U
205-99-2	Benzo(b)fluoranthene	1300.	U
207-08-9	Benzo(k)fluoranthene	1300.	U
50-32-8	Benzo(a)pyrene	1300.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1300.	U
53-70-3	Dibenzo(a,h)anthracene	1300.	U
191-24-2	Benzo(g,h,i)perylene	1300.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

Date Reported: 3/10/89

C-124

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-1 MSD

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951209 MSD

Sample wt/vol: 30.0091(g/mL) G Lab File ID: >P5524

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.75 dec. -- Date Extracted: 01/24/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(-2-Chloroethyl)Ether	1300.	U
541-73-1	1,3-Dichlorobenzene	1300.	U
100-51-6	Benzyl alcohol	1300.	U
95-50-1	1,2-Dichlorobenzene	1300.	U
95-48-7	2-Methylphenol	1300.	U
39638-32-9	bis(2-chloroisopropyl)ether	1300.	U
106-44-5	4-Methylphenol	1300.	U
67-72-1	Hexachloroethane	1300.	U
98-95-3	Nitrobenzene	1300.	U
78-59-1	Isophorone	1300.	U
88-75-5	2-Nitrophenol	1300.	U
105-67-9	2,4-Dimethylphenol	1300.	U
65-85-0	Benzoic acid	6500.	U
111-91-1	bis(-2-Chloroethoxy)methane	1300.	U
120-83-2	2,4-Dichlorophenol	1300.	U
91-20-3	Naphthalene	1300.	U
106-47-8	4-Chloroaniline	1300.	U
87-68-3	Hexachlorobutadiene	1300.	U
91-57-6	2-Methylnaphthalene	1300.	U
77-47-4	Hexachlorocyclopentadiene	1300.	U
88-06-2	2,4,6-Trichlorophenol	1300.	U
95-95-4	2,4,5-Trichlorophenol	6500.	U
91-58-7	2-Chloronaphthalene	1300.	U
88-74-4	2-Nitroaniline	6500.	U
131-11-3	Dimethyl Phthalate	1300.	U
208-96-8	Acenaphthylene	1300.	U
606-20-2	2,6-Dinitrotoluene	1300.	U

FORM I SV-1 1/87 Rev.

Date Reported: 3/10/89

C-125

John J. Molloy, P.E.
Laboratory Director

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H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS-1 MSD

Lab Name: H2M LABS INC. Contract: -----

Lab Code: ----- Case No.: ----- SAS No.: ----- SDG No.: SS-1

Matrix: (soil/water) SOIL Lab Sample ID: 951209 MSD

Sample wt/vol: 30.0091(g/mL) G Lab File ID: >P5524

Level: (low/med) LOW Date Received: 01/19/89

% Moisture: not dec.75 dec. -- Date Extracted: 01/24/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/05/89

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	6500.	U
51-28-5	2,4-Dinitrophenol	6500.	U
132-64-9	Dibenzofuran	1300.	U
84-66-2	Diethylphthalate	1300.	U
7005-72-3	4-Chlorophenyl-phenylether	1300.	U
86-73-7	Fluorene	1300.	U
100-01-6	4-Nitroaniline	6500.	U
534-52-1	4,6-Dinitro-2-methylphenol	6500.	U
86-30-6	N-Nitrosodiphenylamine (1)	1300.	U
101-55-3	4-Bromophenyl-phenylether	1300.	U
118-74-1	Hexachlorobenzene	1300.	U
85-01-8	Phenanthrene	1300.	U
120-12-7	Anthracene	1300.	U
84-74-2	Di-n-butylphthalate	1300.	U
206-44-0	Fluoranthene	1300.	U
85-68-7	Butylbenzylphthalate	1300.	U
91-94-1	3,3'-Dichlorobenzidine	2600.	U
56-55-3	Benzo(a)anthracene	1300.	U
218-01-9	Chrysene	1300.	U
117-81-7	bis(2-Ethylhexyl)phthalate	740.	JB
117-84-0	Di-n-octyl_Phthalate	1300.	U
205-99-2	Benzo(b)fluoranthene	1300.	U
207-08-9	Benzo(k)fluoranthene	1300.	U
50-32-8	Benzo(a)pyrene	1300.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1300.	U
53-70-3	Dibenzo(a,h)anthracene	1300.	U
191-24-2	Benzo(g,h,i)perylene	1300.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

Date Reported: 3/10/89

C-126

P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

CASE NARRATIVE FOR PESTICIDE/PCB's

QC Data

A total of eight water and soil samples and one method blank exceed the advisory limit for the surrogate standard recovery due to matrix interference (coeluting contaminant).

The recoveries for the compounds were very low for the matrix spike analysis of SW-2, whereas the duplicate resulted in acceptable recoveries. Re-extraction of another spiked sample was not possible, because not enough sample bottles were submitted to allow for a spare. The RPD for the duplicates were all outside QC limits.

System Performance Checks

Breakdown for the Evaluation Mix B on both the primary and secondary column exceeded 20% for DDT for the run at 19:01, caused by some samples with high contaminations. Remedial action was taken, and the system was checked with another run of the Evaluation Mix at 20:39. The level of breakdown for this second analysis met QC criteria and the sequence was continued.

Sample Analysis

Aroclor 1260 found in SS-2 and confirmed on secondary column. Not all peaks were summed for quantification but only those that were not superimposed by interferences, i.e. those that gave approximately the same ratios as the standard peaks. Peaks that were left out for the partial sum of areas were also omitted for calibration of the standard.

Raised limits were reported for pesticides coeluting with Ar 1260 isomers.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: April 24, 1989

****
* *
****
John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 1174
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

WATER PESTICIDE SURROGATE RECOVERY

Lab Name: H2M LABS. INC. Contract: GIBBS & HILL

	SAMPLE NO.	S1 (DBC)	#	OTHER
01	GW-6	148		
02	GW-7	121		
03	GW-8	447	*	
04	GW-9	154		
05	GW-11	225	*	
06	GW-14	209	*	
07	FIELD BLANK	182	*	
08	GW-14MS	148		
09	GW-14MSD	184	*	
10	SW-1	131		
11	SW-2	206	*	
12	SW-2MS	177	*	
13	SW-2MSD	152		
14	PBLK	127		
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ADVISORY QC LIMITS (24-154)

S1 (DBC) = Dibutylchlorendate

\# Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

COMMENTS:

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: H2M LABS, INC. Contract: **GIBBS & HILL**

Level: (low/med) low

	SAMPLE NO.	S1 (DBC)	#	OTHER
01	SS-1	118		
02	SS-2	59		
03	SS-1MS	189	*	
04	SS-1MSD	117		
05	PBLK	547	*	
06				
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ADVISORY QC LIMITS (20-150)

S1 (DBC) = Dibutylchlorendate

\# Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

COMMENTS:

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix Spike - Sample No.: SW-2

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	0.2	0	0.01	3 *	56-123
Heptachlor	0.2	0	0.04	18 *	40-131
Aldrin	0.2	0	0.07	32 *	40-120
Dieldrin	0.5	0	0.04	9 *	52-126
Endrin	0.5	0	0	0 *	56-121
4,4' DDT	0.5	0.60	0.41	0 *	38-127

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	0.2	0.13	67	183*	15	56-123
Heptachlor	0.2	0.13	65	113*	20	40-131
Aldrin	0.2	0.15	74	79*	22	40-120
Dieldrin	0.5	0.45	90	164*	18	52-126
Endrin	0.5	0.62	123*	200*	21	56-121
4,4' DDT	0.5	1.1	91	200*	27	38-127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 6 out of 6 outside limits
Spike Recovery: 7 out of 12 outside limits

COMMENTS:

H2M LABS, INC.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LABS, INC. Contract: **GIBBS & HILL**

Matrix Spike - Sample No.: GW-14

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	0.20	0	0.21	103	56-123
Heptachlor	0.20	0.01	0.22	105	40-131
Aldrin	0.20	0	0.21	103	40-120
Dieldrin	0.50	0	0.56	112	52-126
Endrin	0.50	0.06	0.78	144*	56-121
4,4' DDT	0.50	0.42	1.3	176*	38-127

Compound	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	0.20	0.11	55*	61*	15	56-123
Heptachlor	0.20	0.11	50	71*	20	40-131
Aldrin	0.20	0.09	45	78*	22	40-120
Dieldrin	0.50	0.46	92	20*	18	52-126
Endrin	0.50	0.52	92	44*	21	56-121
4,4' DDT	0.50	1.03	122	36*	27	38-127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 6 out of 6 outside limits
Spike Recovery: 3 out of 12 outside limits

COMMENTS:

H2M LABS, INC.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix Spike - Sample No.: SS-1 Level: LOW

Compound	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Lindane	213	0	459	216*	46-127
Heptachlor	213	90	481	184*	35-130
Aldrin	213	0	655	308*	34-132
Dieldrin	533	0	1070	201*	31-134
Endrin	533	0	1081	203*	42-139
4,4' DDT	533	120	1685	294*	23-134

Compound	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Lindane	213	491	231*	7	50	46-127
Heptachlor	213	346	120	42*	31	35-130
Aldrin	213	252	118	89*	43	34-132
Dieldrin	533	660	124	47*	38	31-134
Endrin	533	733	138	38	45	42-139
4,4' DDT	533	886	144*	68*	50	23-134

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 4 out of 6 outside limits
Spike Recovery: 8 out of 12 outside limits

COMMENTS:

H2M LABS, INC.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE METHOD BLANK SUMMARY

Lab Name: H2M LABS, INC. Contract: **GIBBS & HILL**
Lab Sample ID: B-1-22-89 Lab File ID: 482
Matrix: WATER Level: LOW
Date Extracted: 01/22/89 Extraction: SEPF
Date Analyzed (1): 02/16/89 Date Analyzed (2): 02/16/89
Time Analyzed (1): 18:12 Time Analyzed (2): 18:12
Instrument ID : HP-5890 Instrument ID: HP-5890
GC Column ID (1): 1.5% SP-2250/1.95% SP-2401 ON 100/120 SUPELCOPORT GC Column ID (2):3% SP-2100 ON 100/120 SUPELCOPORT

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	GW-6	951190	02/17/89	02/17/89
02	GW-7	951191	"	"
03	GW-8	951192	"	"
04	GW-9	951193	"	"
05	GW-11	951194	"	"
06	GW-14	951195	"	"
07	FIELD BLANK	951196	"	"
08	GW-14MS	951195MS	"	"
09	GW-14MSD	951195MSD	"	"
10	SW-1	951205	"	"
11	SW-2	951206	"	"
12	SW-2MS	951206MS	"	"
13	SW-2MSD	951206MSD	"	"
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Comments:

H2M LABS, INC.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE METHOD BLANK SUMMARY

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL
Lab Sample ID: B-459 Lab File ID: 484
Matrix: SOIL Level: LOW
Date Extracted: 01/24/89 Extraction: SONC
Date Analyzed (1): 02/16/89 Date Analyzed (2): 02/16/89
Time Analyzed (1): 19:27 Time Analyzed (2): 19:27
Instrument ID : HP-5890 Instrument ID: HP-5890
GC Column ID (1): 1.5% SP-2250/1.95% SP-2401 ON 100/120 SUPELCOPORT GC Column ID (2):3% SP-2100 ON 100/120 SUPELCOPORT

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	SS-1	951209	02/17/89	02/17/89
02	SS-2	951210	"	"
03	SS-1MS	951209	"	"
04	SS-1MSD	951209MSD	"	"
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Comments:

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-6
C & D Batteries

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER Lab Sample ID: 951190
Sample wt: vol 1000(mL) Lab File ID: P501/C1042
Level: LOW Date Received: 01/19/89
% Moisture:not dec. dec. Date Extracted: 01/22/89
Extraction: SepF Date Analyzed: 02/17/89
GPC Cleanup: N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.04	BJ
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.39	B
72-43-5	Methoxychlor	0.5	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/08/89

John J. Molloy, P.E.
Laboratory Director

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-7

C & D Batteries

Lab Name: H2M LABS. INC.
Contract: GIBBS & HILL

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture:not dec. dec.
Extraction: SepF
GPC Cleanup: N pH:

Lab Sample ID: 951191
Lab File ID: P502/C1043
Date Received: 01/19/89
Date Extracted: 01/22/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.04	J
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.26	B
72-43-5	Methoxychlor	0.5	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/03/89

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John J. Molloy, P.E.
Laboratory Director

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-8

C & D Batteries

Lab Name: H2M LABS. INC.
Contract: GIBBS & HILL
Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture:not dec. dec.
Extraction: SepF
GPC Cleanup: N pH:

Lab Sample ID: 951192
Lab File ID: P504/C1045
Date Received: 01/19/89
Date Extracted: 01/22/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.26	B
72-43-5	Methoxychlor	0.5	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/08/89

John J. Molloy, P.E.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-9

C & D Batteries

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER Lab Sample ID: 951193
Sample wt: vol 1000(mL) Lab File ID: P505/C1046
Level: LOW Date Received: 01/19/89
% Moisture:not dec. dec. Date Extracted: 01/22/89
Extraction: SepF Date Analyzed: 02/17/89
GPC Cleanup: N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.02	J
72-20-8	Endrin	0.03	J
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.08	B,J
72-43-5	Methoxychlor	0.5	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/08/89

John J. Molloy, P.E.
Laboratory Director

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-11
C & D Batteries

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER Lab Sample ID: 951194
Sample wt: vol 1000(mL) Lab File ID: P506/C1047
Level: LOW Date Received: **01/19/89**
% Moisture:not dec. dec. Date Extracted: **01/22/89**
Extraction: SepF Date Analyzed: P2/17/89/C2/17/89
GPC Cleanup: N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.63	B
72-43-5	Methoxychlor	0.5	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/08/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-14
C & D Batteries

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER Lab Sample ID: 951195
Sample wt: vol 1000(mL) Lab File ID: P507/C1048
Level: LOW Date Received: 01/19/89
% Moisture:not dec. dec. Date Extracted:01/22/89
Extraction: SepF Date Analyzed: P2/17/89/C2/17/89
GPC Cleanup: N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.01	J
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.01	J
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.06	J
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.42	B
72-43-5	Methoxychlor	0.5	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/08/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

FIELD BLANK
C & D Batteries

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture:not dec. dec.
Extraction: SepF
GPC Cleanup: **N** pH:

Lab Sample ID: 951196
Lab File ID: P508/C1049
Date Received: 01/19/89
Date Extracted:01/22/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.34	B
72-43-5	Methoxychlor	0.5	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/08/89

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

SW-1
C & D Batteries

Lab Name: H2M LABS. INC.
Contract: GIBBS & HILL

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture:not dec. dec.
Extraction: SepF
GPC Cleanup: N pH:

Lab Sample ID: 951205
Lab File ID: P510/C1051
Date Received: 01/19/89
Date Extracted:01/22/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.01	J
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.43	B
72-43-5	Methoxychlor	0.5	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/08/89

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

SW-2

C & D Batteries

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture:not dec. dec.
Extraction: Sep
GPC Cleanup: N pH:

Lab Sample ID: 951206
Lab File ID: P511/C1052
Date Received: 01/19/89
Date Extracted:01/22/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4.4'-DDE	0.02	J
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4.4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4.4'-DDT	0.60	B
72-43-5	Methoxychlor	0.5	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/08/89

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

SS-1
C & D Batteries

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: SOIL
Sample wt: 30.069(g)
Level: LOW
% Moisture:not dec.75 dec.
Extraction: Sonc
GPC Cleanup: N pH: 6.9

Lab Sample ID: 951209
Lab File ID: P517/C1058
Date Received: 01/19/89
Date Extracted:01/24/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	32	U
319-85-7	beta-BHC	32	U
319-86-8	delta-BHC	32	U
58-89-9	gamma-BHC (Lindane)	32	U
76-44-8	Heptachlor	90	B
309-00-2	Aldrin	32	U
1024-57-3	Heptachlor epoxide	11	J
959-98-8	Endosulfan I	32	U
60-57-1	Dieldrin	64	U
72-55-9	4,4'-DDE	64	J
72-20-8	Endrin	64	U
33213-65-9	Endosulfan II	64	U
72-54-8	4,4'-DDD	64	U
1031-07-8	Endosulfan sulfate	64	U
50-29-3	4,4'-DDT	120	
72-43-5	Methoxychlor	320	U
53494-70-5	Endrin ketone	64	U
5103-71-9	alpha-Chlordane	320	U
5103-74-2	gamma-Chlordane	320	U
8001-35-2	Toxaphene	640	U
12674-11-2	Aroclor-1016	320	U
11104-28-2	Aroclor-1221	320	U
11141-16-5	Aroclor-1232	320	U
53469-21-9	Aroclor-1242	320	U
12672-29-6	Aroclor-1248	320	U
11097-69-1	Aroclor-1254	640	U
11096-82-5	Aroclor-1260	640	U

Date Reported: 04/08/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SS-2
C & D Batteries

Lab Name: H2M LABS. INC.
Contract: GIBBS & HILL

Matrix: SOIL
Sample wt: 30.0155(g)
Level : LOW
% Moisture:not dec.25 dec.
Extraction: Sonc
GPC Cleanup: Y pH: 7.2

Lab Sample ID: 951210
Lab File ID: P518/C1059
Date Received: 01/19/89
Date Extracted:01/24/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	21	U
319-85-7	beta-BHC	21	U
319-86-8	delta-BHC	21	U
58-89-9	gamma-BHC (Lindane)	21	U
76-44-8	Heptachlor	58	B
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	21	U
959-98-8	Endosulfan I	14	J
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	42	U
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	90	U*
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	280	U*
72-43-5	Methoxychlor	210	U
53494-70-5	Endrin ketone	210	U*
5103-71-9	alpha-Chlordane	210	U
5103-74-2	gamma-Chlordane	210	U
8001-35-2	Toxaphene	420	U
12674-11-2	Aroclor-1016	210	U
11104-28-2	Aroclor-1221	210	U
11141-16-5	Aroclor-1232	210	U
53469-21-9	Aroclor-1242	210	U
12672-29-6	Aroclor-1248	210	U
11097-69-1	Aroclor-1254	420	U
11096-82-5	Aroclor-1260	2000	

*** Raised reporting limit in presence of Ar 1260**

Date Reported: 04/08/89

John J. Molloy, P.E.
Laboratory Director

C-45

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

PBLK

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER Lab Sample ID: B-1-22-89

Sample wt: vol 1000(mL) Lab File ID: P481/C1022

Level: LOW Date Received: --

% Moisture:not dec. dec. Date Extracted:01/22/89

Extraction: SepF Date Analyzed: P2/16/89/C2/16/89

GPC Cleanup: N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.03	J
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.04	J
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.09	J
72-43-5	Methoxychlor	0.05	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Date Reported: 04/08/89

****
* Molloy *
****

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

PBLK

Lab Name: H2M LABS, INC.
Contract: GIBBS & HILL

Matrix: SOIL
Sample wt: 30 (g)
Level: LOW
% Moisture:not dec.100 dec.
Extraction: Sonc
GPC Cleanup: N pH:

Lab Sample ID: B-459
Lab File ID: P484/C1025
Date Received: --
Date Extracted:01/24/89
Date Analyzed: P2/16/89/C2/16/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	8	U
319-85-7	beta-BHC	8	U
319-86-8	delta-BHC	8	U
58-89-9	gamma-BHC (Lindane)	8	U
76-44-8	Heptachlor	2	J
309-00-2	Aldrin	8	U
1024-57-3	Heptachlor epoxide	8	U
959-98-8	Endosulfan I	8	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	80	U
53494-70-5	Endrin ketone	16	U
5103-71-9	alpha-Chlordane	80	U
5103-74-2	gamma-Chlordane	80	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	80	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	80	U
53469-21-9	Aroclor-1242	80	U
12672-29-6	Aroclor-1248	80	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

Date Reported: 04/08/89

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-14MS

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER Lab Sample ID: 951195MS
Sample wt: vol 1000(mL) Lab File ID: P512/C1053
Level: LOW Date Received: 01/19/89
% Moisture:not dec. dec. Date Extracted:01/22/89
Extraction: SepF Date Analyzed: P2/17/89/C2/17/89
GPC Cleanup: N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	*	
76-44-8	Heptachlor	*	
309-00-2	Aldrin	*	
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	*	
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	*	
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.04	J **
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	*	
72-43-5	Methoxychlor	0.05	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

* Analyte is a spike compound.
** Breakdown product of spike.

Date Reported: 04/08/89

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-14MSD

Lab Name: H2M LABS, INC.
Contract: GIBBS & HILL

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture:not dec. dec.
Extraction: SepF
GPC Cleanup: N pH:

Lab Sample ID: 951195MSD
Lab File ID: P513/C1054
Date Received: 01/19/89
Date Extracted:01/22/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	*	
76-44-8	Heptachlor	*	
309-00-2	Aldrin	*	
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	*	
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	*	
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.03	J **
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	*	
72-43-5	Methoxychlor	0.05	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

* Analyte is a spike compound.
** Breakdown product of spike.

Date Reported: 04/08/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SW-2MS

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture:not dec. dec.
Extraction: Sep°
GPC Cleanup: N pH:

Lab Sample ID: 951206MS
Lab File ID: P514/C1055
Date Received: 01/19/89
Date Extracted:01/22/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	*	
76-44-8	Heptachlor	*	
309-00-2	Aldrin	*	
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	*	
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	*	
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	*	
72-43-5	Methoxychlor	0.05	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

* Analyte is a spike compound.

Date Reported: 04/08/89

John J. Molloy, P.E.
Laboratory Director

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SW-2MSD

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture:not dec. dec.
Extraction: SepF
GPC Cleanup: N pH:

Lab Sample ID: 951206MSD
Lab File ID: P516/C1057
Date Received: 01/19/89
Date Extracted:01/22/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	*	
76-44-8	Heptachlor	*	
309-00-2	Aldrin	*	
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	*	
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	*	
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.04	J **
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	*	
72-43-5	Methoxychlor	0.05	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.5	U
5103-74-2	gamma-Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

* Analyte is a spike compound.
** Breakdown product of spike.

Date Reported: 04/08/89

John J. Molloy, P.E.
Laboratory Director

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SS-1MS

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: SOIL Lab Sample ID: 951209MS
Sample wt: 30.0455(g) Lab File ID: P519/C1060
Level: LOW Date Received: 01/19/89
%-Moisture:not dec. 75 dec. Date Extracted:01/24/89
Extraction: Sonc Date Analyzed: P2/17/89/C2/17/89
GPC Cleanup: N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	32	U
319-85-7	beta-BHC	32	U
319-86-8	delta-BHC	32	U
58-89-9	gamma-BHC (Lindane)	*	
76-44-8	Heptachlor	*	
309-00-2	Aldrin	*	
1024-57-3	Heptachlor epoxide	32	U
959-98-8	Endosulfan I	7	J
60-57-1	Dieldrin	*	
72-55-9	4,4'-DDE	64	U
72-20-8	Endrin	*	
33213-65-9	Endosulfan II	64	U
72-54-8	4,4'-DDD	76	**
1031-07-8	Endosulfan sulfate	64	U
50-29-3	4,4'-DDT	*	
72-43-5	Methoxychlor	320	U
53494-70-5	Endrin ketone	64	U
5103-71-9	alpha-Chlordane	320	U
5103-74-2	gamma-Chlordane	320	U
8001-35-2	Toxaphene	640	U
12674-11-2	Aroclor-1016	320	U
11104-28-2	Aroclor-1221	320	U
11141-16-5	Aroclor-1232	320	U
53469-21-9	Aroclor-1242	320	U
12672-29-6	Aroclor-1248	320	U
11097-69-1	Aroclor-1254	640	U
11096-82-5	Aroclor-1260	640	U

* Analyte is a spike compound.
** Breakdown product of spike.

Date Reported: 04/08/89

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* *
****
John J. Molloy, P.E.
Laboratory Director

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H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SS-1MSD

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix: SOIL
Sample wt: 30.009(g)
Level: LOW
% Moisture:not dec. 75 dec.
Extraction: Sonc
GPC Cleanup: N pH:

Lab Sample ID: 951209MSD
Lab File ID: P520/C1061
Date Received: 01/19/89
Date Extracted:01/24/89
Date Analyzed: P2/17/89/C2/17/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	32	U
319-85-7	beta-BHC	32	U
319-86-8	delta-BHC	32	U
58-89-9	gamma-BHC (Lindane)	*	
76-44-8	Heptachlor	*	
309-00-2	Aldrin	*	
1024-57-3	Heptachlor epoxide	15	J
959-98-8	Endosulfan I	32	U
60-57-1	Dieldrin	*	
72-55-9	4,4'-DDE	4	U
72-20-8	Endrin	*	
33213-65-9	Endosulfan II	64	U
72-54-8	4,4'-DDD	58	J**
1031-07-8	Endosulfan sulfate	64	U
50-29-3	4,4'-DDT	*	
72-43-5	Methoxychlor	320	U
53494-70-5	Endrin ketone	64	U
5103-71-9	alpha-Chlordane	320	U
5103-74-2	gamma-Chlordane	320	U
8001-35-2	Toxaphene	640	U
12674-11-2	Aroclor-1016	320	U
11104-28-2	Aroclor-1221	320	U
11141-16-5	Aroclor-1232	320	U
53469-21-9	Aroclor-1242	320	U
12672-29-6	Aroclor-1248	320	U
11097-69-1	Aroclor-1254	640	U
11096-82-5	Aroclor-1260	640	U

* Analyte is a spike compound.
** Breakdown product of spike.

Date Reported: 04/08/89

John J. Molloy, P.E.
Laboratory Director

C-153

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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CASE NARRATIVE FOR INORGANICS

ICP analysis was performed on the ARL 3410. Furnace analysis was performed on the Perkin Elmer Zeeman 5100 and the Varian GTA 96. Mercury was analyzed via the cold vapor method using the Perkin Elmer 2380. The Perkin Elmer 2380 was also used for flame analysis.

The arsenic, chromium, selenium and antimony matrix spike recoveries associated with sample SS-1 were not within 75-125%. The data for these elements respective to the SS-1 matrix group were reported flagged with and "N" on Forms I-IN and V-IN (Part 1). The aluminum matrix spike recovery associated with sample GW-14 was not within 75-125%. The aluminum data respective to the GW-14 matrix group was reported flagged with an "N" on Forms I-IN and V-IN (Part 1).

The selenium post digestion spike recoveries for samples GW-9 and GW-14 were not within 85-115%. The thallium post digestion spike recoveries for samples GW-11, Field Blank, SW-2, and SS-1 were not within 85-115%. The arsenic post digestion spike recovery for sample GW-11 was not within 85-115%. All of the above sample absorbances were less than 50% of the spike absorbances. The results pertaining to the above samples for the aforementioned elements were reported flagged with a "W" on the corresponding data sheets (I-IN).

The difference between sample and duplicate for cadmium analysis of sample SW-2 was greater than the CRDL. Therefore, the data received associated with SW-2 was reported flagged with an "*" on Forms I-IN and VI-IN.

The ICP dilution analysis of sample GW-11 for barium and iron did not agree within 10% of the original determination. The barium and iron data for samples associated with GW-11 were reported flagged with and "E" on Forms I-IN and IX-IN. The ICP dilution analysis of sample SS-2 for beryllium did not agree within 10% of the original determination. The beryllium data for samples associated with SS-2 were reported flagged with an "E".

The method of standard additions was used for lead analysis of sample GW-9. The correlation coefficient for the data is greater than 0.995. The reported value obtained by MSA was flagged on the data sheet (Form I-IN) with "s".

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date Reported: May 2, 1989

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* *
****
John J. Molloy, P.E.
Laboratory Director

C-154

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXGW6

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951198

Level (low/med): LOW Date Received: 01/19/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3250		N	P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	28.0	B	E	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	5.0			P
7440-70-2	Calcium	8270			P
7440-47-3	Chromium				
7440-48-4	Cobalt	14.0	U		P
7440-50-8	Copper	7.0	B		P
7439-89-6	Iron	8240		E	P
7439-92-1	Lead				
7439-95-4	Magnesium	2950	B		P
7439-96-5	Manganese	388			P
7439-97-6	Mercury				
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	6.0	U		P
7440-23-5	Sodium	6350			P
7440-28-0	Thallium				
7440-62-2	Vanadium	11.0	U		P
7440-66-6	Zinc	218			P
	Cyanide				

Color Before: BEIGE Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 10 1989

John J. Molloy, P.E.
Laboratory Director

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FORM I - IN

7/87
Rev. IFB Amendment One

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

GW-6
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951198

Level (low/med): LOW Date Received: 01/19/89

% Solids : _____

Concentration Units (ug/L or mg/kg dry weight) ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5	B		F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	10	U		A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	30.6			F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	3900			A
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		C

Color Before: BEIGE Clarity Before: CLOUDY Texture: --
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXGW7

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 01/19/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6500		N	P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	69.0	B	E	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	7.0			P
7440-70-2	Calcium	21900			P
7440-47-3	Chromium				
7440-48-4	Cobalt	14.0	U		P
7440-50-8	Copper	38.0			P
7439-89-6	Iron	8680		E	P
7439-92-1	Lead				
7439-95-4	Magnesium	5400			P
7439-96-5	Manganese	5240			P
7439-97-6	Mercury				
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	6.0	U		P
7440-23-5	Sodium	13200			P
7440-28-0	Thallium				
7440-62-2	Vanadium	11.0	U		P
7440-66-6	Zinc	41.0			P
	Cyanide				

Color Before: BEIGE Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 10 1989

John J. Molicy, P.E.
Laboratory Director

H2M LABS, INC.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

GW-7
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951199

Level (low/med): LOW Date Received: 01/19/89

% Solids : _____

Concentration Units (ug/L or mg/kg dry weight) ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	7	B		F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	10	U		A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	14.9			F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	250000 g?			A
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		C

Color Before: BEIGE Clarity Before: CLOUDY Texture: --
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

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H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXGW8

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951200

Level (low/med): LOW Date Received: 01/19/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2550		N	P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	33.0	B	E	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	5.0			P
7440-70-2	Calcium	29500			P
7440-47-3	Chromium				
7440-48-4	Cobalt	14.0	U		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	5340		E	P
7439-92-1	Lead				
7439-95-4	Magnesium	4300	B		P
7439-96-5	Manganese	306			P
7439-97-6	Mercury				
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	6.0	U		P
7440-23-5	Sodium	10600			P
7440-28-0	Thallium				
7440-62-2	Vanadium	11.0	U		P
7440-66-6	Zinc	33.0			P
	Cyanide				

Color Before: BEIGE Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 10 1989

John J. Molloy, P.E.
Laboratory Director

FORM I - IN
C-159

7/87
Rev. IFB Amendment One

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

GW-8
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951200

Level (low/med): LOW Date Received: 01/19/89

% Solids : _____

Concentration Units (ug/L or mg/kg dry weight) ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5	U		F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	10	U		A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	10.4			F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	13000			A
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		C

Color Before: BEIGE Clarity Before: CLOUDY Texture: --
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

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H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXGW9

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951201

Level (low/med): LOW Date Received: 01/21/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10100		N	P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	100	B	E	P
7440-41-7	Beryllium	1.0	B		P
7440-43-9	Cadmium	5.0			P
7440-70-2	Calcium	35900			P
7440-47-3	Chromium				
7440-48-4	Cobalt	16.0	B		P
7440-50-8	Copper	40.0			P
7439-89-6	Iron	22900		E	P
7439-92-1	Lead				
7439-95-4	Magnesium	8050			P
7439-96-5	Manganese	1440			P
7439-97-6	Mercury				
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	6.0	U		P
7440-23-5	Sodium	14700			P
7440-28-0	Thallium				
7440-62-2	Vanadium	18.0	B		P
7440-66-6	Zinc	90.0			P
	Cyanide				

Color Before: TAN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 10 1989

John J. Molloy, P.E.
Laboratory Director

C-161

FORM I - IN

7/87
Rev. IFB Amendment One

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

GW-9
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951201

Level (low/med): LOW Date Received: 01/19/89

% Solids : _____

Concentration Units (ug/L or mg/kg dry weight) ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	9	B		F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	30			A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	37.0		S	F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	15000			A
7782-49-2	Selenium	1.0	U	E	F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		C

Color Before: TAN Clarity Before: CLOUDY Texture: --
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

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H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXGW11

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951202

Level (low/med): LOW Date Received: 01/19/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1110		N	P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	23.0	B	E	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	14900			P
7440-47-3	Chromium				
7440-48-4	Cobalt	14.0	U		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	2390		E	P
7439-92-1	Lead				
7439-95-4	Magnesium	4220	B		P
7439-96-5	Manganese	126			P
7439-97-6	Mercury				
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	6.0	U		P
7440-23-5	Sodium	15700			P
7440-28-0	Thallium				
7440-62-2	Vanadium	11.0	U		P
7440-66-6	Zinc	18.0	B		P
	Cyanide				

Color Before: BEIGE Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: [illegible]

John J. Molloy, P.E.
Laboratory Director

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FORM I - IN

7/87
Rev. IFB Amendment One

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

GW-11
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951202

Level (low/med): LOW Date Received: 01/19/89

% Solids : _____

Concentration Units (ug/L or mg/kg dry weight) ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5	U	W	F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	20			A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	7.2			F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	450			A
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	5.0	U	W	F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		C

Color Before: BEIGE Clarity Before: CLOUDY Texture: --
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXGW14

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951203

Level (low/med): LOW Date Received: 01/19/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3400		N	P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	28.0	B	E	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	6.0			P
7440-70-2	Calcium	9060			P
7440-47-3	Chromium				
7440-48-4	Cobalt	14.0	U		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	4240		E	P
7439-92-1	Lead				
7439-95-4	Magnesium	2620	B		P
7439-96-5	Manganese	199			P
7439-97-6	Mercury				
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	6.0	U		P
7440-23-5	Sodium	5030			P
7440-28-0	Thallium				
7440-62-2	Vanadium	13.0	B		P
7440-66-6	Zinc	19.0	B		P
	Cyanide				

Color Before: BEIGE Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 10 1989

John J. Molloy, P.E.
Laboratory Director

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FORM I - IN

C-165

7/87
Rev. IFB Amendment One

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

GW-14
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951203

Level (low/med): LOW Date Received: 01/19/89

% Solids : _____

Concentration Units (ug/L or mg/kg dry weight) ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5	U		F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	30			A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	9.5			F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	3200			A
7782-49-2	Selenium	1.0	U	E	F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		C

Color Before: BEIGE Clarity Before: CLOUDY Texture: --
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

FLDBLK

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 01/19/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	108	U		P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	2.0	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	330	U		P
7440-47-3	Chromium				
7440-48-4	Cobalt	14.0	U		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	19.0	B		P
7439-92-1	Lead				
7439-95-4	Magnesium	219	U		P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury				
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	7.0	B		P
7440-23-5	Sodium	594	U		P
7440-28-0	Thallium				
7440-62-2	Vanadium	11.0	B		P
7440-66-6	Zinc	5.0	U		P
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 10 1989

John J. Molloy, P.E. 69
Laboratory Director

FORM I - IN
C-167

7/87
Rev. IFB Amendment One

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

FIELD BLANK
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951204

Level (low/med): LOW Date Received: 01/19/89

% Solids : ____

Concentration Units (ug/L or mg/kg dry weight) ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5	U		F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	10			A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	2	U		F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	200	U		A
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	5.0	U	W	F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture: --
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXSW1

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): SURFA Lab Sample ID: 951207

Level (low/med): LOW Date Received: 01/19/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4920			P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	110	B		P
7440-41-7	Beryllium	2.0	B		P
7440-43-9	Cadmium	9.0		*	P
7440-70-2	Calcium	17200			P
7440-47-3	Chromium				
7440-48-4	Cobalt	14.0	U		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	44600			P
7439-92-1	Lead				
7439-95-4	Magnesium	4300	B		P
7439-96-5	Manganese	864			P
7439-97-6	Mercury				
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	12.0			P
7440-23-5	Sodium	9110			P
7440-28-0	Thallium				
7440-62-2	Vanadium	21.0	B		P
7440-66-6	Zinc	110			P
	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 10 1989

John J. Molloy, P.E.
Laboratory Director

FORM I - IN
C- 169

7/87
Rev. IFB Amendment One

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

SW-1
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951207

Level (low/med): LOW Date Received: 01/19/89

% Solids : _____

Concentration Units (ug/L or mg/kg dry weight) ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	8	B		F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	30			A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	26.7			F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	670	U		A
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		C

Color Before: BROWN Clarity Before: CLOUDY Texture: --
Color After: YELLOW Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXSW2

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): SURFA Lab Sample ID: 951208

Level (low/med): LOW Date Received: 01/19/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	124	B		P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	11.0	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	6.0		*	P
7440-70-2	Calcium	9520			P
7440-47-3	Chromium				
7440-48-4	Cobalt	14.0	U		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	127			P
7439-92-1	Lead				
7439-95-4	Magnesium	2290	B		P
7439-96-5	Manganese	51.0			P
7439-97-6	Mercury				
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	6.0	B		P
7440-23-5	Sodium	6110			P
7440-28-0	Thallium				
7440-62-2	Vanadium	11.0	U		P
7440-66-6	Zinc	11.0	B		P
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 10 1989

John J. Molloy, P.E.
Laboratory Director

FORM I - IN 7/87
C-171 Rev. IFB Amendment One

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

SW-2
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): WATER Lab Sample ID: 951208

Level (low/med): LOW Date Received: 01/19/89

% Solids : _____

Concentration Units (ug/L or mg/kg dry weight) ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5	U		F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	20			A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	11.0			F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	320			A
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	5.0	U	W	F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture: --
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

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John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXSS1

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): SOIL Lab Sample ID: 951211

Level (low/med): LOW Date Received: 01/19/89

% Solids: 25.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6290			P
7440-36-0	Antimony	36.8	U	N	P
7440-38-2	Arsenic				
7440-39-3	Barium	125	B		P
7440-41-7	Beryllium	2.4	B	E	P
7440-43-9	Cadmium	4.0	U		P
7440-70-2	Calcium	1760	B		P
7440-47-3	Chromium				
7440-48-4	Cobalt	11.2	U		P
7440-50-8	Copper	11.2	B		P
7439-89-6	Iron	37400			P
7439-92-1	Lead				
7439-95-4	Magnesium	1640	B		P
7439-96-5	Manganese	388			P
7439-97-6	Mercury				
7440-02-0	Nickel	31.2	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	6.4	B		P
7440-23-5	Sodium	2770	B		P
7440-28-0	Thallium				
7440-62-2	Vanadium	20.8	B		P
7440-66-6	Zinc	60.8			P
	Cyanide				

Color Before: BROWN Clarity Before: OPAQUE Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 1 0 1989

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

SS-1
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): SOIL Lab Sample ID: 951211

Level (low/med): LOW Date Received: 01/19/89

% Solids : 25

Concentration Units (ug/L or mg/kg dry weight) mg/kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	8.8		N	F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	24		N	A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	29.9			F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	.36	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	208			A
7782-49-2	Selenium	4.0	U	N	F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	4.0	U	W	F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	4.0	U		C

Color Before: BROWN Clarity Before: OPAQUE Texture: MEDIUM
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXSS2

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB021

Matrix (soil/water): SOIL Lab Sample ID: 951212

Level (low/med): LOW Date Received: 01/19/89

% Solids: 79.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2610			P
7440-36-0	Antimony	21.3		N	P
7440-38-2	Arsenic				
7440-39-3	Barium	59.2			P
7440-41-7	Beryllium	0.51	B	E	P
7440-43-9	Cadmium	21.8			P
7440-70-2	Calcium	4000			P
7440-47-3	Chromium				
7440-48-4	Cobalt	5.3	B		P
7440-50-8	Copper	52.9			P
7439-89-6	Iron	9400			P
7439-92-1	Lead				
7439-95-4	Magnesium	1860			P
7439-96-5	Manganese	118			P
7439-97-6	Mercury				
7440-02-0	Nickel	9.9	U		P
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver	2.3	B		P
7440-23-5	Sodium	997	B		P
7440-28-0	Thallium				
7440-62-2	Vanadium	10.4	B		P
7440-66-6	Zinc	185			P
	Cyanide				

Color Before: BROWN Clarity Before: OPAQUE Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: APR 10 1989

John J. Molloy, P.E.
Laboratory Director

77

FORM I - IN

C-175

7/87
Rev. IFB Amendment One

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX: (516) 694-4122
ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

INORGANIC ANALYSIS DATA SHEET

SS-2
C & D BATTERIES

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: GIB021

Matrix (soil/water): SOIL Lab Sample ID: 951212

Level (low/med): LOW Date Received: 01/19/89

% Solids : 79

Concentration Units (ug/L or mg/kg dry weight) mg/kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	2.3		N	F
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	23		N	A
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	1290			F
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	.12	U		CV
7440-02-0	Nickel				
7440-09-7	Potassium	50.6	U		A
7782-49-2	Selenium	1.3	U	N	F
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium	1.3	U		F
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	1.3	U		C

Color Before: BROWN Clarity Before: OPAQUE Texture: MEDIUM
Color After: COLORLESS Clarity After: CLEAR Artifacts: --

Date Reported: 04/15/89

John J. Molloy, P.E.
Laboratory Director

D. HISTORIC LITERATURE

D. HISTORIC LITERATURE

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EUSTANCE AND HOROWITZ
CIVIL ENGINEERS
P. O. BOX 175 CIRCLEVILLE, NEW YORK
TELEPHONE: MIDDLETOWN FO 1-2741

ARTHUR W. EUSTANCE
AARON HOROWITZ

T. SCOTT WOODHULL
RODNEY D. GIBBS
PAUL WEISSHAAR, JR.
WILLIS E. TUTTLE

24 COLUMBUS AVENUE
NEWBURGH, N. Y.
TEL.: JO 1-8672

ELLENVILLE, N. Y.
TEL.: 1050

D.1

RECD
JAN 1
N.Y.

January 17, 1961

Mr. W. A. Bruce, P.E.
Sanitary Engineer
Water Pollution Control Section
New York State Department of Health
84 Holland Avenue
Albany 8, New York

Re: Industrial ~~Water~~ WASTE Treatment Works
Empire Tube Corporation
Deer Park (T), Orange County

Dear Mr. Bruce:

Your letter of January 10, 1961, prompts the following explanations:

1. Item number 1 of our engineering report dated November 18, 1960, refers to a washing operation in which the cleansing agent is a 5-gallon batch of organic paint stripping compound diluted with several hundred gallons of water. The reclamation of 5 gallons per week of this active agent hardly seems worthwhile. The entire batch of waste which we propose dumping to the lagoon weekly will be dirty, but will not be heavily loaded with emulsified and floating paint, since this is not a true paint-stripping operation.

2. Calcium fluoride, the troublesome sludge which we propose to dump near a surface stream, will permit leaching of some fluoride ions, no matter where it is dumped. Fluoride ions themselves are not dangerous in low concentrations. Our problem is to keep these concentrations at a low level, preferably less than 1 milligram per liter. If the calcium fluoride sludge is dumped at a location far from any surface stream, fluoride ions can be expected to accumulate to or beyond permissible limits while the ground water is making its slow trip to the nearest surface stream, and all ground waters along the way will be contaminated. By dumping immediately adjacent to a large surface stream (such as the Neversink or Delaware Rivers) as proposed in the engineer's report, there will be prompt interception of the leachings by the large volume of water in the stream, with the attendant desirable dilution. Leaching will occur faster during periods of heavy precipitation, when the larger volumes of stream water are available for dilution. It is understood, of course, that the dumping site will be fenced to exclude trespassers, and the site will also be ditched to exclude surface drainage which might wash solids to the stream directly. No appreciable quantity of solids could be carried to the stream through the soil.

EUSTANCE AND HOROWITZ
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TEL.: JO 1-8672

ELLENVILLE, N. Y.
TEL.: 1050

3. The effluent of the lagoon can be sampled at will at the outlet end of the lagoon discharge pipe.

4. The drawings have been revised to further exclude sludge from the lagoon effluent by altering the outlet manhole. The 6" asbestos-cement pipe extending into the lagoon from this manhole has been turned upward with a 90° bend extended about 2½ feet, to keep the point of withdrawal well above the lagoon's sludge blanket.

Three revised plans are returned herewith.

Very truly yours,

EUSTANCE AND HOROWITZ, ENGINEERS

Thomas F. Brannan

Thomas F. Brannan, P.E.

TFB/sh
cc: Middletown District
White Plains District

D-2

May 18, 1964

Mr. Harrison, White Plains Regional Office

Mr. Schleifer, Middletown District

Empire Tube Corporation, Town of Deerpark, Orange County

On May 12, 1964 an inspection was made of the above referenced facilities and the following data was obtained.

Empire Tube Corporation is located in the Hamlet of Huguenot, in the Town of Deerpark, on the eastern side of Route 209 between the intersections of Big Pond Road and Huguenot Roads. The site can be located on the Port Jervis North Quadrangle. The plant is situated on a fairly flat area of some ten acres which slopes down steeply on the north toward D-1-7 and more gradually on the east towards the flood plain of the Neversink River.

The waste disposal facilities consist of three cesspools to handle the sanitary wastes and a lagoon to handle industrial wastes. The sanitary system is located approximately 400 ft. to the north of the factory building and approximately 250 ft. from the bank rising above tributary 7 of the Neversink River. The industrial wastes disposal system is located approximately 200 ft. northwest of the plant and extends to within some 150 ft. of the above mentioned bank.

The sanitary sewage disposal system may not have much bearing upon the overall wastes disposal problem except perhaps to introduce some bacterial load to the springs which feed D-1-7.

The industrial wastes disposal system consists of a lagoon receiving rinse waters, floor drainage and various wash waters, but no direct discharges of hydrofluoric acid. Mr. Larry Roberts of the plant staff indicated that the only fluorides reaching the lagoon would be from inadvertent spills. The lagoon itself is surrounded by a fence with an access gate and has two inlets and an overflow type of outlet. The first inlet is as shown on the plans approved October 3, 1961 and apparently carries the industrial wastes. The second inlet is not on the plans and has been constructed since the approval and carries roof drainage. The inlets have a certain amount of riprap at their bases to minimize erosion of the lagoon sides. The outlet structure has not been constructed according to plans. It is simply a pipe near the top of the lagoon and does not have the structure as detailed on the plans. It seems, however, that the outlet has never been used while the lagoon has been in operation. The lagoon is constructed in gravel and the leaching characteristics are such that the wastes consist of no more than a foot or two of liquid on the very bottom of the lagoon. The outlet pipe does not seem to be located according to plans and comes out to the bank above D-1-7 north of the old railroad bridge abutments rather than south of them.

D-5

A 25'x50' lagoon has been constructed alongside the bank to take the sludge which was to have resulted from the treatment process used to neutralize the hydrofluoric acid. Apparently this lagoon is not presently nor has it been in the past used for this purpose. Mr. Roberts indicated that the hydrofluoric acid is kept in two tanks located on the south side of the building and neutralized with lime, with the supernatant as well as the sludge taken by a scavenger and dumped at an unknown location. The service is performed by the M.&S. Sewage Disposal Company, located in Huguenot.

The Delaware River Official Classification Report shows that two streams, D-1-7 and D-1-6-a run through the property of Empire Tube Corporation. However, D-1-6-a in the vicinity of the factory has been filled in with only the headwaters remaining as a dry stream bed. The topography is such that the headwaters would normally flow, during the wet seasons into D-1-7 rather than D-1-6. There is a certain amount of flow in D-1-6-a-1 and in the portion of -a to which -1 is tributary. All the drainage from the area of the lagoon and cesspools, however, would be to D-1 -7 which is classified C(T) as Item No. 38 of the Delaware River Official Classifications. The Neversink River, D-1, is classified B from the mouth to Trib. 10 as Item 3 of the Delaware River Official Classifications. There are no Class A waters directly involved except for that portion of the Delaware River, which the Neversink is tributary.

D-1-7 is a stream which receives most of its flow from springs that rise from the bank on which the Empire Tube Corporation waste disposal systems are located, but there is a small amount of flow from the farm lands above this location. The stream at the bank appears to be a series of pools with a heavy growth of aquatic vegetation. By the time it reaches the old railroad bridge abutments it has assumed definite proportions and has a considerable flow of water. However, the aquatic vegetation does persist for most of the stream's length.

The Empire Tube Corporation has engaged the Pocono Biological Laboratories to sample the surface and ground waters at four points and determine fluoride concentrations. This is done on monthly basis and the results are sent to this office. Review of the results from the last year showed that the water at the spring averaged approximately 100 p.p.m. of fluorides, the water from the river 8 p.p.m., the plant well from 0.0 to 5.5 p.p.m. and the old well consistently indicated 0 p.p.m. of fluorides. The sampling points were located as follows: The spring is a natural spring coming out from the bank on which the wastes disposal lagoon is located. It is a developed spring having a structure at its base from which there is an ample flow of water. It is located along the river bank some 50 ft. upstream from the old railroad bridge abutments. This spring has been used in the past, before the plant was established, as a source of water supply for several people in the vicinity, particularly Mr. Smartwout, who has his house east of the plant along D-1-7. The river sample is collected from D-1-7 just above the spring. This point is more or less below the outlet pipe from the lagoon. The plant sampling point is the well which the Corporation uses for its industrial as well as domestic purposes. This is a gravel packed well about 75 ft. deep located some 50 ft. from the southerly side of the building. The hydrofluoric acid holding tanks are located next to the factory wall, some 50 ft. away from the well. The old well is on the Smartwout property and it is located some 800 ft. away down

slope from the wastes disposal lagoon and approximately 200 ft. from D-1-7. It is a shallow dug well which presently is not used for domestic purposes, since according to Mr. Swartwout, it is polluted. Exactly what type of pollution it was he was unable to say.

The results of the corporation's sampling indicates that, although, according to its representatives, there are no fluorides going directly into the lagoon, they are certainly being discharged into the surface and ground waters. The spring is probably representative of the ground waters in the vicinity of the lagoon. The river sampling point is probably above the discharge point of several other springs and does not represent the actual conditions in the river. A sampling point further downstream would very likely indicate higher fluoride concentrations. The plant well should not show high fluoride concentrations since the ground water does appear to drain to the opposite direction. However, the ground water may be so saturated with fluorides that a certain amount does get into the well and perhaps there is some leaching from inadvertent spills around the hydrofluoric acid holding tanks. The old well on the Swartwout property is apparently located far enough away from the lagoon so it is not affected. Generally, it appears that the springs pick up most of the ground water from the bank and convey it to D-1-7.

There are several locations where the surface waters could be sampled if a sampling program is necessary to gather more information. Along D-1-7 the natural waters reaching the area in question can be sampled at a farm road crossing the headwaters of the stream directly southeast of the Huguenot Hotel. A point at the old railroad bridge abutments would give a good indication of the conditions directly below the discharges of the springs and the farm road crossing directly below the Swartwout house would show to what degree the fluorides in the stream have been diluted. The Neversink River can be sampled at the bridge next to the gaging station at Godeffroy and at the Neversink Drive crossing below Huguenot.

The only wells that may be affected by the fluoride discharges would be the well on the Swartwout property, the plant well, a new well that the corporation has drilled in front of their building next to Route 209 for air conditioning use, and the well in the Deerpark Town Barn located along Rt. 209 and Huguenot Road. It is not likely that many wells on the northwest side of Route 209 would be affected; however, since these houses do have individual systems, it would be easy to obtain samples if necessary.

A discussion was held with Mr. Swartwout regarding his water supply. Presently he is not using the dug well as a source of drinking water. The reason is that the well is polluted to an unknown degree and it would appear that the supply is probably inadequate in terms of quantity. Mr. Swartwout would like to use the spring which flows from the bank on which the lagoon is located as a drinking water source. He has talked to the corporation regarding this and regarding the drilling of a new well on his property, as per agreement reached with Empire Tube if his well becomes polluted. The matter now is before his lawyer. Also Mr. Swartwout has mentioned that his cows will not drink the water from D-1-7 and that there is an apparent decrease in the trout population.

It would appear from the above investigation that the problem of waste disposal has not been completely solved. The one definite polluting material

that we know is reaching the surface and ground waters are fluorides for which we have no standards. There are no Class A surface waters involved directly. The sampling of the well on the Swartwout property within the last year does not show the presence of fluorides, however, the plant well has at times shown fluoride concentrations as high as 5.5 p.p.m. which would be above the drinking water standards. Presently we are only dealing with fluorides, although there may very likely be other chemicals being discharged which may be contravening drinking water or stream standards. Perhaps an industrial survey and a sampling program done at the plant and on the surface and ground waters in the vicinity may be helpful in indicating exactly what is going into the waters of the State.

An extra copy of this memorandum is enclosed for your use.

MJS:MJ:HE
CC: Div. of Envir. Health Services
File

P.S. An investigation made on May 13, 1964 concerning an odor complaint in the vicinity of Huguenot disclosed an area where the local scavengers dump septic tank pumpings including the neutralized hydrofluoric acid from Empire Tube Corporation. The area is located approximately 1000 ft. northwest from the Huguenot Hotel and some 1600 ft. up slope from the headwaters of D-1-7 and some 100 ft. from D-1-6. The disposal is done in a 4 ft. wide and 60 ft. long trench of unknown depth machine dug in a fairly impervious soil. Whether fluorides from the acid or the sludge reach the stream is unknown.

D.3

March 8, 1966

Mr. Harrison, White Plains Regional Office

Mr. Schleifer, Middletown District

Empire Tube Corporation, Town of Deerpark

On February 10, 1966 Messrs. Jatulis and D. Olson inspected and sampled the industrial waste facilities at the above corporation.

Please refer to our memorandum of May 18, 1964 describing the overall conditions at and in the vicinity of the factory. Additional investigations since that time show that the fluoride wastes are produced in the following manner:

Empire Tube remanufactures old television tubes. A 15% solution of hydrofluoric acid is used to remove the carbon deposit from the tube. This is done on a rotating machine where successive acid washes are followed by water washes and followed by sodium hydroxide washes and again followed by water washes. The tube undergoes the following processes:

1. Water rinse
2. Hydrofluoric acid rinse Kem-pickle
3. Water rinse OUT
4. Hydrofluoric acid rinse " "
5. Water rinse OUT
6. Hydrofluoric acid rinse " "
7. Water rinse IN A TANK.
8. Sodium hydroxide rinse
9. Water rinse
10. Sodium hydroxide rinse
11. Water rinse
12., 13. & 14. Deionized water rinses

per ctr of 29 [illegible]

The tube is placed on a holder type device where the acid or water is injected into the tube and then drained. The acid is drained back to its container where it is injected into the next tube. As the acid is injected and returned there is some spillage. Additional acid is released when the tube is picked up and moved to the next stage. All these drippings fall to the floor where they are diluted with the water from the wash rinses. This water then is discharged into the lagoon. The machine can handle about 110 tubes per hour and each washing operation produces about 50 liters of wash water. Since there are nine washing operations, the dilution factor for the acid spilled is rather high. Sodium hydroxide wash is same as acid with some spills also. After use it is dumped into lagoon. Some 20 gallons involved.

The hydrofluoric acid is used primarily to remove carbon and small amounts of potassium silicate. Apparently only very small amounts of aluminum are involved in this process so that the formation of aluminum hydroxide is small. The sodium hydroxide wash is,

according to plant personnel, used to raised the pH of the tube because of the adhering acid and the somewhat acid wash water. The final washings with demineralized water are used to remove all the ions.

The acid is used through one working day which now is 17 hours. After that it is discharged by means of a pump to the holding tanks just outside of the plant building. As the acid becomes slightly diluted additional acid is added to each batch to keep it up to strength. Apparently there are no spills between the acid bath and the acid holding tanks so that all the acid is collected there and regularly neutralized with lime. The M. & S. Sanitary Sewage Disposal Corporation pumps out the tanks and removes the liquid as well as the sludge slurry to a disposal area in Port Orange some six miles away from the Empire Tube. This is far enough, of course, not to add any fluorides to the ground and surface waters around the plant. It was also noted that there are no outlet pipes from these holding tanks and the only way for the acid to be discharged to the lagoon would be to pump it by means of an auxiliary pump.

The summary of sampling results made by the company during 1965 indicates that the spring has a fluoride concentration of 92 ppm, that the river has a fluoride concentration of 3.4 ppm, and that the plant well has a fluoride concentration of less than 0.05 ppm. The present sampling was used to determine where the fluorides are coming from.

Grab samples were picked up at seven points.

Sampling Point 1 - Combined process and wash water from the tube cleaning facility. The discharge consisted of wash water and the drippings from the acid and hydroxide rinses. The fluorides were 2500 ppm.

Sampling Point 2 - Discharge from buffing process and floor drains into the lagoon. This discharge supposedly gets no fluorides at all. Apparently there is some carry-over of water from the tube cleaning facility into the building's floor drains. The fluorides content is 6.4 ppm.

Sampling Point 3 - Main discharge into lagoon from the tube cleaning facility. This discharge receives the drainage from the tube cleaning facility plus additional process water. The fluorides have been diluted to 600 ppm.

Sampling Point 4 - Spring discharge into stream. The spring receives some of its water from the ground waters that are underlying the settling lagoon. The fluorides were 100 ppm.

Sampling Point 5 - Sampling point 0.2 miles above spring discharge into stream. This stream is primarily fed by ground waters and some of the ground water does pass the vicinity of the lagoon. The fluorides content was 0.3 ppm.

Sampling Point 6 - Sampling point 0.2 miles below spring discharge. At this point on the stream most of the ground waters that were contaminated with fluorides should have reached it. The fluorides content was 15 ppm.

Sampling Point 7 - Plant well. This well supplies the plant with process and domestic water. The well is located on the side of the plant opposite from the lagoons and apparently some ground water contaminated with fluorides is reaching it. The fluorides content was 0.4 ppm.

From the examination of the tube washing process and the sampling results, the following can be concluded:

1. The hydrofluoric acid rinsing procedure is operated in a relatively sloppy manner resulting in a discharge of acid in such a concentration that the waste waters have a fluoride content of 2500 ppm.

2. By the time these wastes reach the lagoon they are diluted with other waters, however, the concentration still is 600 ppm.

3. By the time the ground waters in the vicinity of the lagoon reach the surface waters at the spring, the concentration of fluorides is still 100 ppm.

4. The stream then, after reasonable dilution, contains 15 ppm of fluorides.

The facility for neutralizing the acid after a day's operation seemed to be operated adequately. It is not likely that contribution to the fluorides in the ground waters is made by this process.

Plans approved by this Department on October 3, 1961 were for the disposal of wastes from the rinse water from the tube washing facility. No provisions are indicated in the plans for treating this water. The plans do provide for the neutralization of the acid itself.

The above comments describe the operation of the plant and summarize the character of the wastes. We hope that this will provide a basis on which you can take action that seems to be appropriate. If additional information or clarification of any points is necessary, please let us know.

MJS:MJ:HE
CC: Div. of Envir. Health Services
File

D.4

STATE OF NEW YORK
DEPARTMENT OF HEALTH

MEMORANDUM

September 18, 1968

To: File

From: Mr. MacDonald

Subject: Empire Tube Corporation, Town of Deerpark

On September 13, 1968 I inspected the above referenced wastewater disposal facilities. Mr. Roberts of Empire Tube accompanied me on the inspection. The chemical analysis reports from Quality Control Laboratory Division, Southampton, Pa., showed that the separation facilities to isolate the hydrofluoric acid in the separate holding tanks were not working properly. The fluoride content in both the lagoon (spring) and the inlet to the lagoon was consistently over 100 ppm. No one at the plant seemed to know enough about the separation system.

The lagoon itself, although receiving a good flow from its two inlets, contained only one foot of water at its deepest point indicating an enormous seepage rate.

The overflow structure at the far end of the lagoon was still not constructed according to plan and the fence behind this same area had been ~~town~~ torn down.

I called Robert Caddell at White Plains Regional Office regarding this and he indicated his intention to start legal action for contravention of ground water standards.

GM:HE

GM

D.5

POCONO BIOLOGICAL LABORATORIES
703-05 SARAH STREET, STROUDSBURG, PA.
135 BROADWAY, BANGOR, PA.

RECEIVED
AUG 1 1967
N.Y.S. DEPT. OF HEALTH
MIDDLETOWN DISTRICT

LAB. NO. 77835
AUGUST 1, 1967

EMPIRE TUBE CORPORATION
P. O. BOX 915
PORT JERVIS, NEW YORK

SUBJECT: WATER SAMPLES LIFTED JULY 25, 1967 FOR FLOURIDE DETERMINATIONS.

SAMPLE	pH	FLOURIDE PARTS PER MILLION
PLANT WELL	6.7	0.7
SWARTHOUT WELL	7.4	0.4
SPRING	6.8	125.0
RIVER	7.6	0.0

D.6

STATE OF NEW YORK : DEPARTMENT OF HEALTH

- X

In the Matter of Alleged Violations of Article 12 of the Public Health Law by

EMPIRE TUBE CORP.,

Respondent

- X

In the Matter of the Consideration of such Action as should be Taken in Respect to Continuation, Modification or Revocation of any and all Permits issued to

EMPIRE TUBE CORP.

Respondent

for the Discharge of Sewage and/or Industrial Wastes and Other Wastes or the Effluents thereof into the Waters of the State.

- X

RECEIVED
SEP 14 1966
N.Y.S. DEPT. OF HEALTH
MIDDLETOWN DISTRICT

NOTICE OF CONSOLIDATED HEARING

TAKE NOTICE pursuant to the provisions of §§ 1210, 1220, 1223, 1240, 1241 and 1242 of the Public Health Law that you are required to cease and abate all discharges by you of untreated or inadequately treated sewage, industrial wastes or other wastes or effluents thereof into the waters of the State of New York as more specifically alleged in the complaint in the above entitled proceedings which is annexed hereto and is incorporated herein and made a part hereof, or to appear in person or by attorney before a duly designated representative of the Commissioner of Health at 9:30 A.M., October 7, 1966, Room 159 of the New York State Department of Health Building, 84 Holland Avenue, Albany, New York, at a consolidated public hearing in the above entitled proceedings and answer the charges specified in the complaint herein, at which time motion for a date for trial of the issues will be made before the Hearing Officer.

DATED: Albany, New York
Sept. 9, 1966

HOLLIS S. INGRAHAM, M.D.
Commissioner of Health
of the State of New York

By: _____
New York State Department of Health
Commissioner's Designee for
Issuance of Notices of Hearings

TO: President or Vice Pres.
Empire Tube Corp.
Town of Wawarsing
Village of Ellenville
Ulster County

D-14

STATE OF NEW YORK : DEPARTMENT OF HEALTH

- X

In the Matter of Alleged Violations of
Article 12 of the Public Health Law by

EMPIRE TUBE CORP.,

Respondent

- X

In the Matter of the Consideration of Such
Action as should be Taken in Respect to
Continuation, Modification or Revocation of Any
and All Permits issued to

EMPIRE TUBE CORP.,

Respondent

for the Discharge of Sewage and/or Industrial
Wastes and Other Wastes or the Effluents thereof
into the Waters of the State.

- X

COMPLAINT

The Department of Health of the State of New York complaining of the Respondents herein upon investigation duly authorized by the Commissioner of Health of the State of New York alleges:

1. The Water Pollution Control Board was a body duly organized and established pursuant to L.1949, C.666.

2. Said Water Pollution Control Board duly adopted Rules and Classifications and Standards of Quality and Purity for Waters of New York State pursuant to authority of Public Health Law Article 6, Section 108 (now Article 12, Section 1200).

3. Said rules and classifications and standards were duly filed in the Office of the Secretary of State on October 27, 1950.

4. Said classifications and standards include the class(es) and standards "B" & "C" &"C(T)"

5. Pursuant to L.1961, C.490 the responsibilities of the Water Pollution Control Board for establishment of rules, class and standards of Quality and Purity for Waters of the State were transferred to the Water Resources Commission.

6. Pursuant to L.1961, C.490 the rules, classes and standards

formerly adopted by said Water Pollution Control Board were continued in effect under said Water Resources Commission except as modified by said Water Resources Commission.

7. Pursuant to L.1963, C.392 the rules, classes and standards and their assignment to particular waters formerly adopted by said Water Pollution Control Board are deemed adopted by said Water Resources Commission.

8. Effective Feb. 1, 1963 said Water Pollution Control Board duly adopted the class(es) and standards for the receiving waters herein as follows:

WATER	ITEM NO.	CLASS	STANDARDS
Neversink River	3	B	B
Trib. of Neversink	38	C	C(T)
Spring Effluent Trib.	3	C	C(T)

9. The above description(s) include(s) all points of discharge of wastes by the Respondent(s) into the said receiving waters.

10. Pursuant to Public Health Law § 12 and Article 12, especially § 1210, the State Department of Health acting through the Commissioner is duly authorized to convene public hearings to receive proof of contravention of assigned water standards, to order the abatement of contravening discharges, to issue, deny, continue, revoke or modify permits for discharges of sewage, industrial wastes or other wastes into the waters of the State and to assess penalties for violations of the Public Health Law, the Sanitary Code, a notice, regulation or order prescribed by the said Commissioner.

11. On November 15, 1965, in a writing the said Commissioner of Health duly deputized and designated any of the Deputy Commissioners to authorize the convening of public hearings to investigate and determine charges of alleged contravention of standards duly assigned by the Water Resources Commission to the waters of the State.

12. On May 11, 1966 Andrew D. Fleck, Jr., M. D., Deputy Commissioner of the Department of Health, on presentation to him of

D-16

a written case summary, duly authorized in writing the convening of a public hearing against the Respondent(s) named herein.

13. Upon information and belief the Respondent is a corporation which operates a factory in the Town of Deerpark, Orange County, New York.

14. Said Respondent discharges industrial wastes containing fluorides indirectly into a tributary of the Neversink River.

15. Said wastes contain about 2500 parts per million of fluorides and frequently impart fluoride concentrations as high as 15 parts per million to the said receiving waters, even after dilution.

16. Said fluoride concentrations impair the use of said water for stock watering and fishing.

17. Said discharges also contain barium and silicates.

18. Said discharges cause and contribute and since February 1, 1963 have caused and contributed to conditions in contravention of the standards (deemed) adopted, established and assigned respectively for and to said receiving waters and the downstream waters.

WHEREFORE the said Department demands:

a. That the Respondent cease and abate immediately and thereafter keep abated all contravening discharges by it into the said classified waters of the State unless and until the Respondent shall comply with such pollution abatement schedule as the said Commissioner shall direct or approve.

b. That the Respondent discharge only effluents treated in facilities constructed pursuant to plans approved by the New York State Department of Health not earlier than 1966.

c. That the Respondent forfeit such penalties as the Commissioner shall duly assess as a result of contravention by it of said stream standards.

d. Such other and further relief as shall be deemed by the said Commissioner to be just and proper under the circumstances.

Yours, etc.
DONALD A. MacHARG
Counsel, New York State
Dept. of Health
Office and P.O. Address
84 Holland Ave.
Albany, New York

STATE OF NEW YORK)
COUNTY OF ALBANY) ss.
CITY OF ALBANY)

Vincent H. Barlow, being duly sworn, deposes and says:

I am a Senior Attorney in the Office of the Counsel of the New York State Department of Health.

As such I am assigned to the prosecution of violations of the Public Health Law including those alleged in the complaint herein.

I make this verification because the complainant is a State agency and the persons with direct knowledge of the facts are not present within the county in which my office is located.

I have read the foregoing complaint and know the contents thereof. The allegations therein are true of my own knowledge except as to matters alleged upon information and belief and as to such matters I believe them to be true.

The sources of my information and the grounds for my belief as to matters alleged upon information and belief are reports of investigations contained in subject file and examinations of department files.

Vincent H. Barlow

Sworn to and subscribed before me
this 9th day of September, 1966

Rose Hamar

Notary Public
ROSE HAMAR
Notary Public, State of New York
Qualified in Albany County
My Commission Expires March 30, 1967

D.7

Al Reilley, New York State Department of Health, New Rochelle
Rich Gardineer, Solid Waste Program, Region 3, White Plains
C & D BATTERIES, IN-PLACE TOXIC SITE NO. 336001
DEER PARK (T), ORANGE COUNTY
May 17, 1982

C & D Batteries has contacted this Department concerning the proper closure of a discharge lagoon, which is listed as an Inactive Hazardous Waste Disposal Site. They have submitted a Groundwater Investigative Program, which is comprised of two (2) submissions dated February 15, 1982 and March 31, 1982. This program has consisted of drilling of ten (10) borings; the placement of ten (10) groundwater monitoring wells; the sampling of the discharge lagoon, the groundwater monitoring wells, the nearby stream, the water supply well and a a spring; and the preparation of a groundwater contour map.

The results have indicated the presence of Lead, Barium and Fluoride in the groundwater and in some cases, greater than the allowable standards of Part 703.5 of 6 NYCRR. Table 4-2 of the February Report and Table 3-1 of the March Report have been enclosed for your information. A groundwater Contour Map is also enclosed showing the location of the monitoring wells, the water supply well and the lagoon.

C & D Batteries has proposed the closure of the lagoon by capping, through the construction of a building over it. The Department will allow this under the conditions listed in the enclosed letter dated May 4, 1982 addressed to Mr. Richard Rothstein of C & D Batteries. As you will note, C & D will be required to continue monitoring the groundwater and the stream for the above mentioned parameters to determine if their concentrations are decreasing. It is felt that the groundwater leaving the site will discharge into the stream and any metal or Fluorides will be diluted.

However, the groundwater flowing to the southeast may not entirely discharge into the stream. Enclosed is a photocopy of a map made from a U.S.G.S. Quadrangle. This map shows a building between the C & D Batteries property and the stream. This property is noted as "Lands of Swartout" on the Groundwater Contour Map. The Groundwater Contour Map shows a flow directly towards the property.

As you know, the Department of Environmental Conservation does not sample private wells. This information is being sent to your Department, since you may wish to sample the Swartout well or notify the owner of the groundwater problem at C & D Batteries.

If you have any question, please contact me at (914) 761-6660.

RG:jm
Enclosures
cc: Orange County Department of Health
Bureau of Hazardous Site Control

DRILLER'S LOGS

DATE
STARTED 12/21/81
FINISHED 12/22/81
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-CD-1
SURF ELEV
G W DEPTH

PROJECT Environmental Resource Management - C & D Battery

LOCATION Port Jervis, N.Y.

DEPTH FEET	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
	✓	1	15	16	23	39	52	Greyish Brown - fine GRAVEL and coarse-fine SAND, trace Silt, dry 5.0'	Groundwater Observation Installation
	✓	2	17	23	28	51		Brown fine SAND, trace to little Silt, moist	2" diameter PVC screen and riser pipe. Tip at 37' screen from 37' to 27' Bentonite seal from 25' to 20'. PVC stick-up 2' above ground and covered with a threaded capped protective casing.
10	✓	3	8	15	23	38		15.0'	
	✓	4	9	17	22	39		Brown SILT, wet	
20	✓	5	12	19	25	44		Brown SILT, some fine Sand, moist 25.0'	
	✓	6	24	27	28	55		Brown - fine GRAVEL and coarse-fine SAND, trace Silt, moist	
30	✓	7	7	18	20	38		35.0'	
40	✓	8	10	15	20	35		Brown coarse-fine SAND, some medium-fine Gravel, trace Silt, wet	

N = No. blows to drive 2" spoon 12" with 140 lb. pin wt falling 30" per blow

C = No blows to drive ____" casing ____" with ____ lb. weight falling ____" per blow

CLASSIFICATION

D-21

DATE:
STARTED 12/21/81
FINISHED 12/22/81
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-CD-1
SURF ELEV
G W DEPTH

PROJECT Environmental Resource Management- C & D Battery

LOCATION Port Jervis, N Y

DEPTHS	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
								Brown c-f S, S+M-f G, +-S 41.5'	
								End of Boring	

N = No. blows to drive ____" spoon ____" with ____lb. pin wt. falling ____"per blow CLASSIFICATION

DATE
STARTED 12/30/81
FINISHED 12/31/81
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-CD-2
SURF ELEV
G W DEPTH

PROJECT Environmental Resource Management-C & D Battery

LOCATION Port Jervis, N.Y.

DEPTHS	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		1	3	3	5	8		Brown Topsoil, moist 2.0'	Samples 4 through 8 were wash samples.
								Medium Brown SILT and fine SAND	Groundwater Observation Well 2" diameter PVC screen & riser pipe installed to 40.6'. Screen from 40.6'-30.6' Bentonite seal from 25'-22' PVC Stickup 2.5' inside Protective casing.
		2	8	8	8	16			
								10.0'	
10		3	24	19	29	48		Brown coarse-fine SAND, some medium-fine Gravel, trace SILT	
		4						Coarse Sand (Wash sample)	
20		5						Brown coarse-fine GRAVEL, some + coarse-fine Sand, trace- silt	
		6							
30		7							
		8							
40									

DATE
STARTED 12/30/81
FINISHED 12/31/81
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-CD-2
SURF ELEV
G W DEPTH

PROJECT Environmental Resource Management-C & D Battery

LOCATION Port Jervis, N.Y.

DEPTHS	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING	SOIL OR ROCK CLASSIFICATION	NOTES
								Brown c-f G, s+ c-f S, +- 41.5	
								End of Boring	

N = No blows to drive_____" spoon_____" with_____lb. pin wt. falling_____"per blow. CLASSIFICATION

DATE
STARTED 1/6/82
FINISHED 1/6/82
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-CD-3
SURF ELEV
G W DEPTH

PROJECT Environmental Resource Management-C & D Battery

LOCATION Port Jervis, N.Y.

DEPTH FEET	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		1	14	16	9	25		Dark brown coarse-fine GRAVEL and coarse-fine SAND, trace Silt 4.0'	Groundwater observation well 2" diameter PVC screen & riser pipe installed to 40.0' Screen 40'-30' ~~Bentonite~~ ~~Seal~~ 26'- 16.7' PVC stickup 2.5' inside Metal Protective Casing
		2	18	22	21	43		Brown coarse-fine SAND, little + coarse Gravel, trace silt	
10		3	23	29	25	54		Dark Brown Coarse+-fine GRAVEL, some coarse-fine sand, trace Silt	
		4	12	12	12	24			
20		5	24	26	25	51			
		6	29	26	27	53			
30		7	18	25	21	46			
		8	29	18	24	42			
40									

CLASSIFICATION

DATE
STARTED
FINISHED
SHEET ___ OF ___

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-CD-3
SURF ELEV
G W DEPTH

PROJECT Environmental Resource Management-C & D Battery

LOCATION Port Jervis, N.Y.

DEPTHS	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		9	37	27	25	52		C+-fG, s c-f S, + f 41.5'	
								End of Boring	
45									

N = No blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.

C = No blows to drive ___ " casing ___ " with ___ lb. weight falling ___ "per blow

CLASSIFICATION

METHOD OF INVESTIGATION

D-26

DATE
STARTED 12/31/81
FINISHED 1/5/82
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-CD-4
SURF ELEV
G W DEPTH

PROJECT Environmental Resource Management-C & D Battery

LOCATION Port Jervis, N.Y.

DEPTH FEET	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		1	26	18	23	41		Dark brown coarse-fine SAND, some coarse-fine Gravel, little Silt, trace Roots, moist	Tip of 2" dia. PVC Observation well installed at a depth of 41.6'
		2	15	16	16	32		Brown coarse-fine SAND, some fine gravel, trace & silt	Slotted screen from 41.6' to 31.6'.
10								10.0'	
		3	[illegible]	[illegible]	[illegible]	[illegible]		Brown fine SAND, trace to little Silt	Bentonite seal from 26' to 22'
		4	[illegible]	[illegible]	[illegible]	[illegible]			Observation well has a 2.5' stick-up with metal protective casing and cap.
20		5	11	14	21	35			
								25.0'	
		6	11	13	14	27		Brown Fine SAND, little silt and medium fine Gravel, wet	
30		7	18	11	14	25			
		8	11	16	18	34			
40									

N = No blows to drive 2 " spoon 12 " with 140 lb pin wt. falling 30 "per blow

C = No blows to drive _____ " casing _____ " with _____ lb weight falling _____ "per blow

CLASSIFICATION

D-27

DATE
STARTED 12/28/81
FINISHED 12/30/81
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-CD-5
SURF ELEV
G W DEPTH

PROJECT Environmental Resource Management-C & D Battery

LOCATION Port Jervis, N.Y.

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		1	17	30	90	20		Trace Roots Brown moist fine GRAVEL, little to some coarse-fine Sand, trace Silt	Groundwater Observation Well 2" diameter PVC screen and riser pipe installed to 45' Screen 42'-32' Bentonite seal from 24.4'-22.6' PVC Stick up 3.9' inside Metal Protective casing
		2	10	15	15	30			
10									
		3	12	20	17	37			
		4	17	27	19	46			
20									
		5	13	20	20	40			
								25.0'	
		6	21	19	23	42		Brown medium + fine GRAVEL, trace coarse-fine Sand and Silt	
30									
		7	19	23	9	32			
								33.0'	
		8	28	42	21	63		Dark Brown coarse + fine SAND, little coarse Gravel and medium Brown Silt, trace of petroleum odor.	
40									

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow

C = No. blows to drive _____ " casing _____ " with _____ lb. weight falling _____ per blow

CLASSIFICATION

D-28

DATE
STARTED 12/29/81
FINISHED 12/30/81
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-CD-5
SURF ELEV
G W DEPTH

PROJECT Environmental Resource Management - C & D Battery

LOCATION Port Jervis, N.Y.

DEPTHS	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		9	29	23	24	47		Brown medium-fine GRAVEL, little-coarse-fine Sand, trace Silt	
		10	12	9	8	17		45.5'	
								End of Boring	

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt falling 30 "per blow

C = No blows to drive ____ " casing ____ " with ____ lb weight falling ____ "per blow

CLASSIFICATION

D-29

DATE
STARTED 3-1-82
FINISHED 3-1-82
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS INC

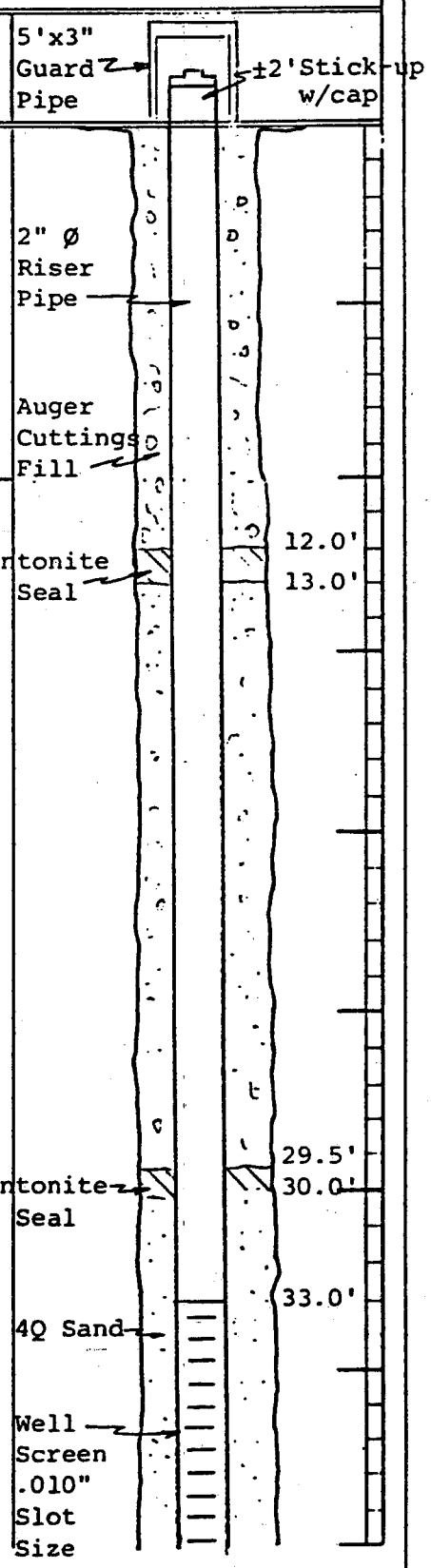
SUBSURFACE LOG

HOLE NO. CD-6
SURF. ELEV.
G. W. DEPTH See Note

PROJECT Observation Well Installations
C & D Battery, Inc.

LOCATION Huguenot, New York

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION
0		1	20	42				Brown, medium-coarse SAND & GRAVEL, Some Silt, roots (Damp-Very Compact)
			34	15		76		
5		2	15	12				grades similar (Moist-Firm)
			12	12		24		
								10.0'
10		3	10	5				Brown, medium-fine SAND, Some fine Gravel, trace silt (Moist-Firm)
			6	5		11		
15		4	7	4				grades similar with trace coarse gravel, grading to Some coarse Gravel (moist-Loose)
			5	10		9		
20		5	3	4				Brown, coarse-medium GRAVEL (Moist-Firm)
			20	20		24		
25		6	12	16				grades similar with Some Silt (Damp-Compact)
			23	36		39		
30		7	12	17				Brown, medium-fine SAND, Some coarse Gravel (Wet-Firm)
			11	4		28		
35		8	7	9				Brown, medium-fine SAND & GRAVEL, Some coarse Gravel (Wet-Firm)
			11	7		20		
40								



N = No. blows to drive 2 " spoon 12 " with 140 lb pin wt falling 30 "per blow

C = No. blows to drive ____ casing ____ " with ____ lb weight falling ____ "per blow

CLASSIFICATION Visual by Driller

D-30

DATE
STARTED 3-1-82
FINISHED 3-1-82
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO CD-6 cont'd
SURF. ELEV
G. W. DEPTH See Note

PROJECT Observation Well Installations
C & D Battery, Inc.

LOCATION Huguenot, New York

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40		9	13	16	30	46		Brown coarse-medium SAND & GRAVEL (Running Sand up 1.5' into casing.) (Wet-Compact)	Plug 43.0'
								Boring Terminated @ 43.0'	
45								Note: Groundwater first encountered @ 29.8'. At completion of boring, water level @ 30.9'	

N = No. blows to drive 2 spoon 12 with 140 lb pin wt falling 30 "per blow

C = No. blows to drive ___ casing ___ with ___ lb weight falling ___ "per blow

CLASSIFICATION Visual by Driller

D-31

DATE
STARTED 3-3-82
FINISHED 3-3-82
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO. CD-7
SURF. ELEV.
G. W. DEPTH See Note

PROJECT Observation Well Installations
C & D Battery, Inc.

LOCATION Huguenot, New York

DEPTHS	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING
0		1	6	4			
			4	3		8	
5		2	4	5			
			4	4		9	
10		3	4	15			
			18	15		33	
15		4	3	5			
			6	7		11	
20		5	7	12			
			14	15		26	
		6	6	13			
			9	10		22	
25		7	4	5			
			7	9		12	
30							
35							

SOIL OR ROCK CLASSIFICATION

SILT, ROOTS & fine GRAVEL 0.5'

Brown, SILT & fine SAND
(Damp-Loose)

grades similar

COBBLES from 7.0'-8.0'

10.5'

Brown, coarse GRAVEL
(Moist-Compact) 13.0'

Brown, medium-fine SAND w/CLAY seam @ 15.0'-15.2'
(Moist-Firm)

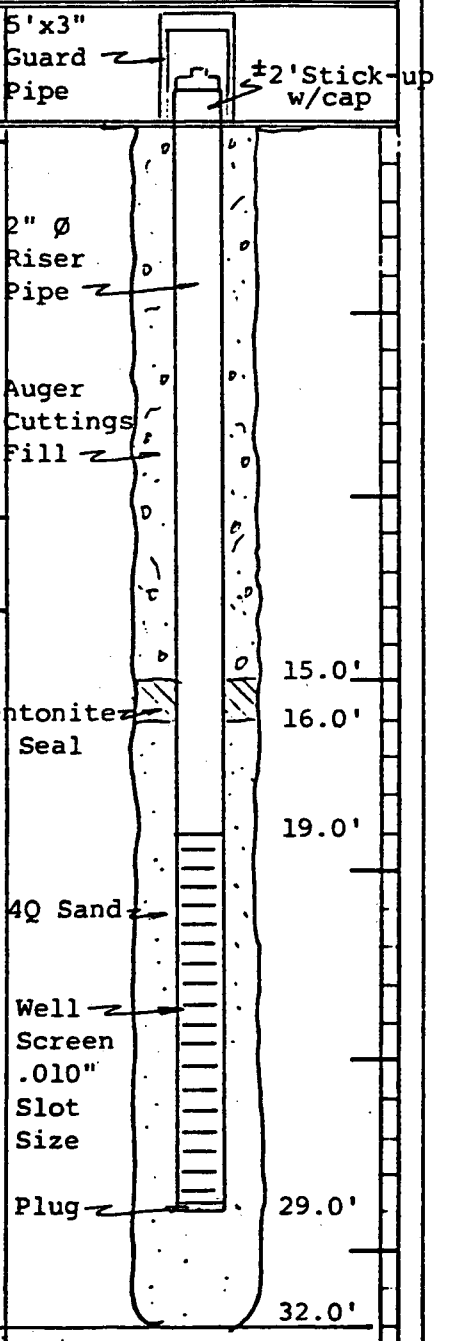
Brown SILT & fine SAND
COBBLE in tip of spoon
(Wet-Firm)

Brown, medium-fine SAND, Some fine Gravel-little recovery
(Wet-Firm)

Brown, medium-fine SAND
(Wet-Firm)

Boring Terminated @ 32.0'

Note: Water level @ 19.5' inside 20' of casing. At completion of boring water level @ 18.0'.



= No. blows to drive 2 spoon 12 with 140 lb pin wt falling 30 "per blow

= No. blows to drive casing with lb weight falling "per blow

CLASSIFICATION Visual by Driller

3¼" I.D. Hollow Stem Auger Casing

D-32

DATE
STARTED 3-4-82
FINISHED 3-4-82
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC

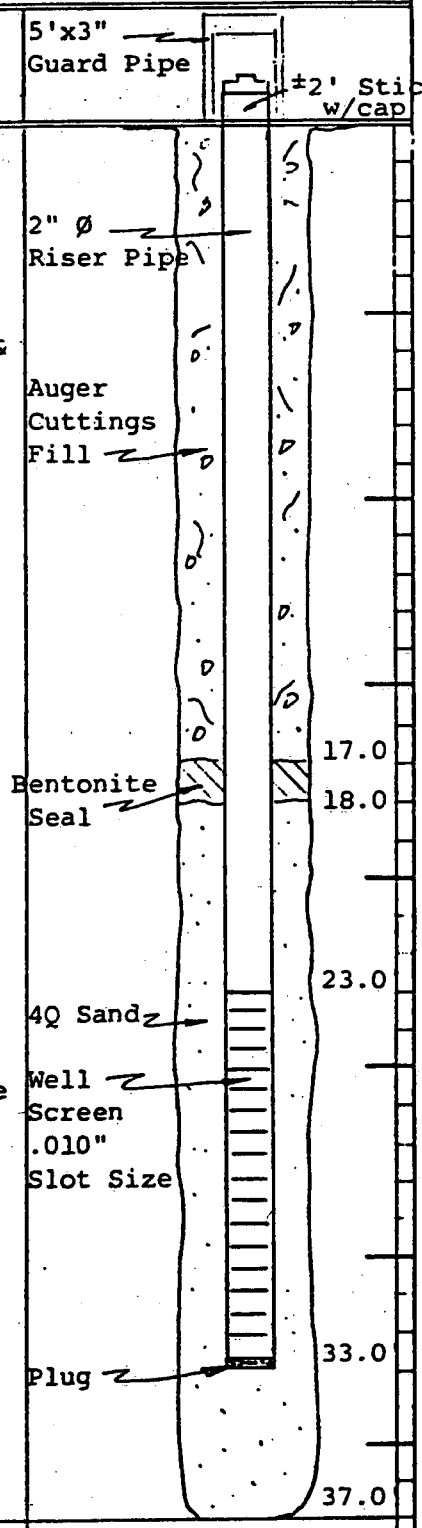
SUBSURFACE LOG

HOLE NO. CD-8
SURF. ELEV.
G.W. DEPTH See Note

PROJECT Observation Well Installations
C & D Battery, Inc.

LOCATION Huguenot, New York

DEPTH	SAMPLE	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING	SOIL OR ROCK CLASSIFICATION
0		1	4	4				Brown, coarse-medium GRAVEL & SILT ROOTS
			6	7		10		(Damp-Firm)
5		2	6	6				Brown, coarse-medium SAND, GRAVEL & SILT (Possible Fill)
			7	21		13		(Damp-Firm)
								Note: Auger Refusal @ 6.5', Moved borehole and proceeded sampling at 10.0'
10		3	5	5				Brown, SILT & fine SAND
			4	5		9		(Damp-Loose)
15		4	3	4				grades similar with Some Clay
			5	5		9		(Wet-Loose)
20		5	2	4				Brown, SILT & fine SAND w/medium-fine SAND seams and CLAY seams
			6	7		10		(Wet-Firm)
25		6	2	4				Brown, SILT & fine SAND, trace fine gravel
			4	5		8		(Wet-Loose)
30		7	4	3				grades similar-no gravel
			5	6		8		(Wet-Loose)
35		8	3	4				grades, damp
			5	5		9		
40								Boring Terminated @ 37.0'
								Note: Water level @ 23.5' inside 30' of casing.



N = No. blows to drive 2 spoon 12 with 140 lb pin wt falling 30 " per blow

No. blows to drive casing with lb weight falling " per blow

CLASSIFICATION Visual by Driller

D-33

DATE
STARTED 3-2-82
FINISHED 3-3-82
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC. SUBSURFACE LOG

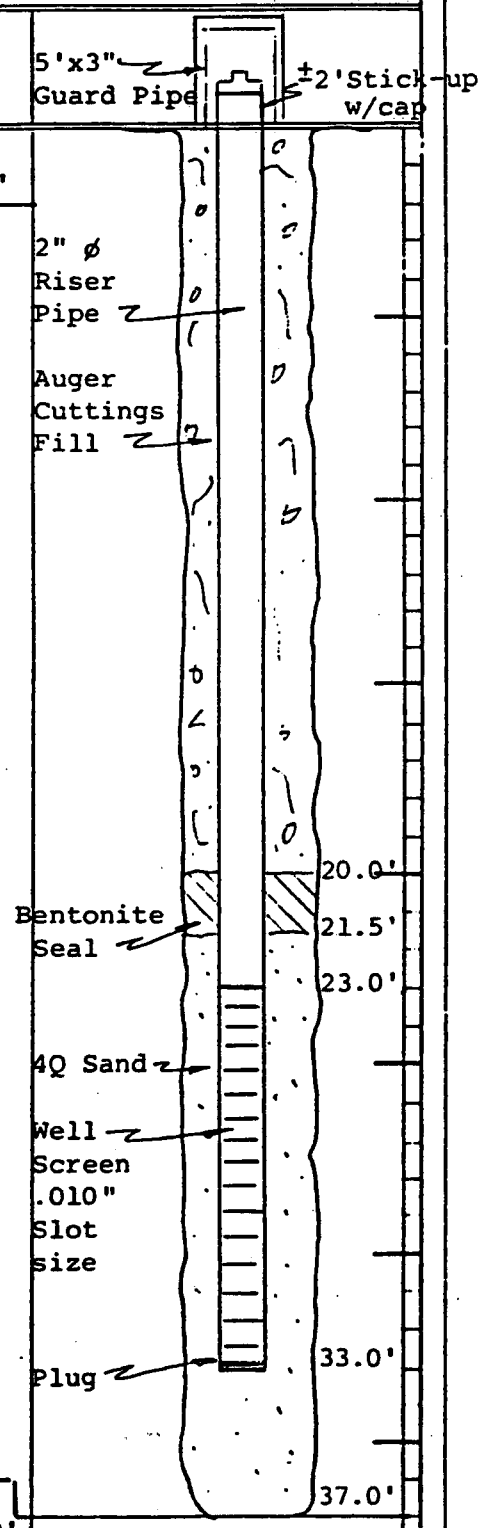
HOLE NO. CD-9
SURF. ELEV.
G. W. DEPTH See Note

PROJECT Observation Well Installations
C & D Battery, Inc.

LOCATION Huguenot, New York

DEPTH FEET	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING	SOIL OR ROCK CLASSIFICATION
0	/	1	10	6				Brown, medium-fine SAND & GRAVEL, Some Silt, roots (Damp-Firm) 2.0'
			16	18		22		
								Brown, SILT & fine SAND (Damp-Firm)
5	/	2	5	6				
			5	5		11		
10	/	3	8	5				grades similar
			6	7		11		
15	/	4	4	5				grades similar w/CLAY seam @ 16.5' (Wet-Loose)
			4	5		9		
20	/	5	3	6				grades similar with medium-fine SAND seam @ 21.0'-21.2' (Wet-Firm)
			7	6		13		
25	/	6	1	1				Brown, medium-fine SAND (Wet-Loose)
			3	3		4		
30	/	7	3	2				grades similar w/trace silt & fine gravel
			3	5		5		Brown, medium-fine SAND & SILT w/ medium-fine SAND seam @ 36.5'-36.7' (Wet-Loose)
35	/	8	2	2				
			4	3		6		Boring Terminated @ 37.0'
40								

Note: Water level @ 28.0' inside 30' of casing. At completion of boring water level @ 24.2' inside 30' of casing



= No. blows to drive 2 spoon 12 with 140 lb pin wt falling 30 per blow

= No. blows to drive casing with lb weight falling per blow

3½" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Driller

D-34

DATE
STARTED 3-2-82
FINISHED 3-2-82
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC.

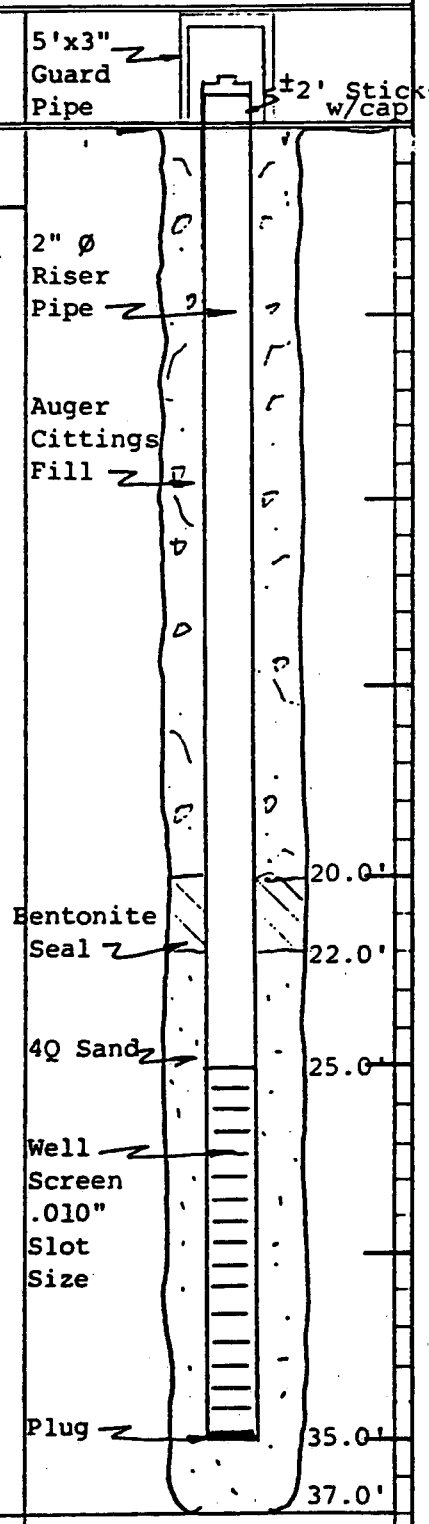
SUBSURFACE LOG

HOLE NO. CD-10
SURF. ELEV.
G. W. DEPTH See Note

PROJECT Observation Well Installations
C & D Battery, Inc.

LOCATION Huguenot, New York

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING	SOIL OR ROCK CLASSIFICATION
0		1	25	19				Brown, medium-fine SAND & GRAVEL,
			12	12		31		Some Silt (Damp-Compact) 2.0'
								Brown, SILT & fine SAND (Damp-Firm)
5		2	4	6				
			7	7		13		
10		3	6	6				grades similar
			7	6		13		
15		4	3	4				grades, saturated w/CLAY Seam @
			8	8		12		16.0'
								grades, dry
20		5	3	7				Brown, fine SAND, trace silt
			8	8		15		(Wet-Firm)
25		6	2	2				grades with Some Silt
			4	3		6		(Wet-Loose)
30		7	2	2				grades, trace silt
			3	3		5		
35		8	4	4				Brown, SILT, Some fine Sand
			5	8		9		(Wet-Loose)
40								Boring Terminated @ 37.0'
								Note: Inside 30' of casing, water level @ 23.5'



N = No. blows to drive 2 spoon 12 with 140 lb pin wt falling 30 "per blow

C = No. blows to drive ___ casing ___ " with ___ lb weight falling ___ "per blow

CLASSIFICATION Visual by Driller

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Environmental Resources Management

Drilling Log

Project C & D Power Systems Owner

Location Huguenot, NY W.O. Number

Well Number MW-12 Total Depth 50 ft Diameter 4 in.

Surface Elevation Water Level: Initial 24-hrs

Screen: Dia. 4 in. Length 5 ft Slot Size 0.01

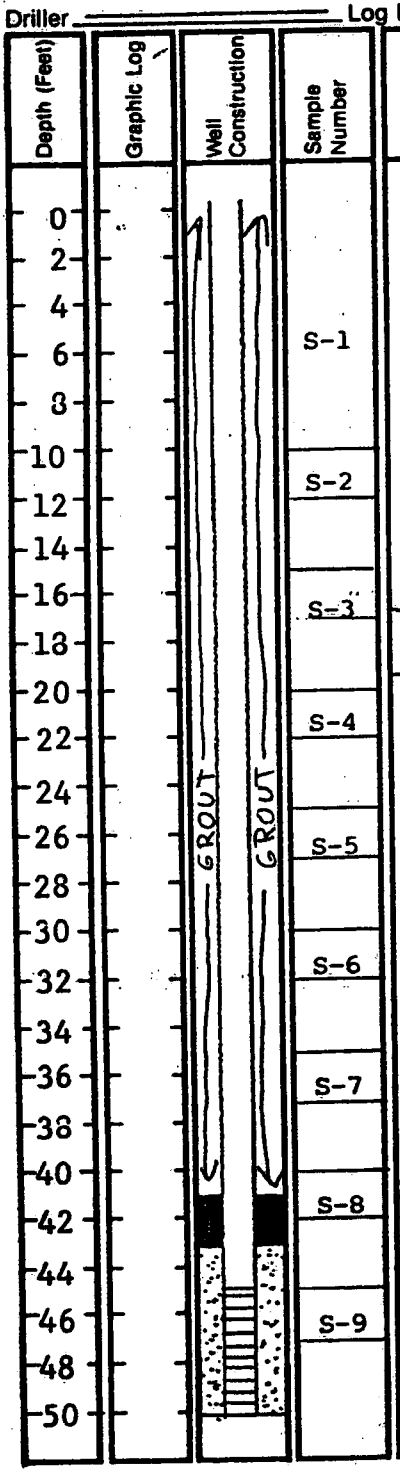
Casing: Dia. 4 in. Length 47 ft Type Stls. Steel

Drilling Company Rochester Drl. Drilling Method Augers/mud rtry

Driller Log By Glenn Wygant Date Drilled 6/13/88

Sketch Map

Notes



Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)	
0, 2, 4, 6, 8			S-1	Brown mf SAND, moist/dry, 16 in. recovery 9/24/9/9	
10, 12, 14			S-2	Same, 14 in. recovery, 4/5/7/8	
16			S-3	SAME, moist, 6/12/15/16	16.7
18				Brown Clayey SILT, little (+) f Sand, wet	19.0
20, 22			S-4	Greyish Brown mf SAND, little (+) silt, moist, 18 in. rec. 8/12/14/20	
24, 26, 28			S-5	Greyish Brown cmf SAND, wet, 19 in. recovery, 9/12/18/23	
30, 32, 34			S-6	No Recovery, 17/16/12/12. Cobbles encountered during augering	
36, 38			S-7	Brownish Grey cmf SAND, with 1" to 2.5" laminae of f gravel and of Clayey Silt	
40				Brown f Sand, little (+) silt	41.0
42, 44			S-8	Grey cmf SAND, with cobbles	
46, 48			S-9	Cobbles, 16/54/32/33	
50				Bottom of Hole 50 feet	

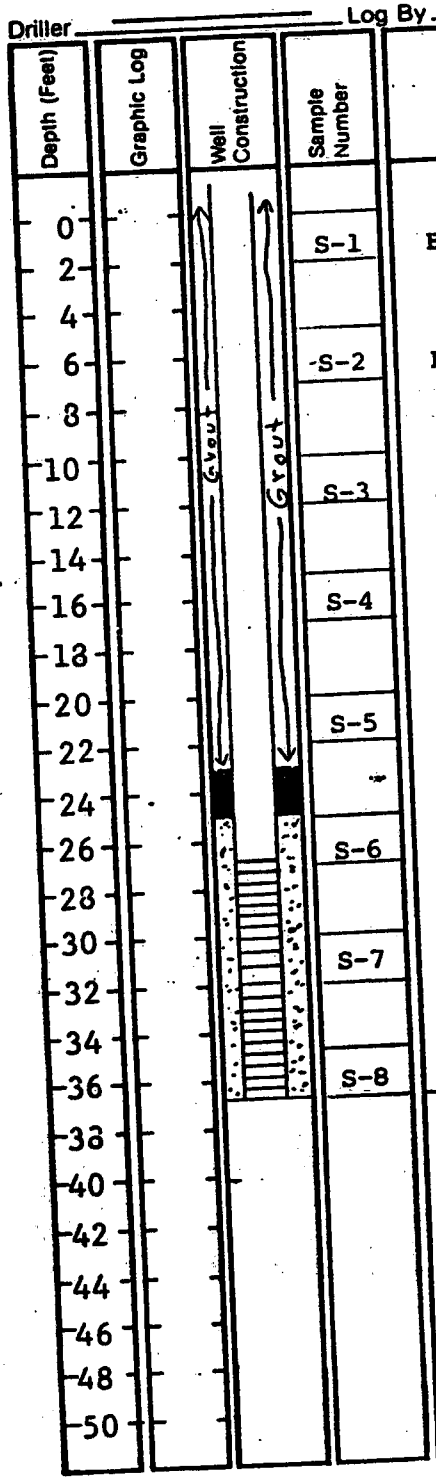
Drilling Log

Environmental Resources Management

Project: C & D Power Systems Owner: ____
Location: Huguenot, NY W.O. Number: ____
Well Number: MW-13 Total Depth: 37 ft Diameter: 4 in.
Surface Elevation: ____ Water Level: Initial: ____ 24-hrs: ____
Screen: Dia. 4 in. Length: 10 ft Slot Size: 0.01
Casing: Dia. 4 in. Length: 27 ft Type: Stls. Steel
Drilling Company: Rochester Drl. Drilling Method: Augers/mud rtry
Driller: ____ Log By: Glenn Wygant Date Drilled: 6/11/88

Sketch Map

Notes



Description/Soil Classification (Color, Texture, Structures)
Brown, cmf SAND and F GRAVEL, dry
Brown, mf SAND, slightly moist
SAME
SAME
Brown cmf SAND, and Cobbles
SAME
SAME
No recovery, boulder. Subsequent drilling very slow
Bottom of Hole 37.0

D-37

Environmental Resources Management, Inc.

TABLE 3-1

WATER LEVEL MEASUREMENTS

Well No.	Casing Elevation	Ground Elevation	Depth to Water (ft)	Water Table Elevation
CD-1	474.37	472.62	30.86	443.51
CD-2	474.27	471.71	31.09	443.18
CD-3	476.47	474.84	33.26	443.21
CD-4	474.73	473.31	31.97	442.76
CD-5	472.98	470.21	29.77	443.21

Surface of water in lagoon = Elevation 458.83

SECTION 4

SAMPLING PROCEDURES AND ANALYTICAL RESULTS

4.1 Soil Sampling

To determine the chemical character and hazardous or non-hazardous nature of the residual wastes in the disposal lagoon, soil samples were collected on 10 December 1981. The procedure outlined below was followed to insure that all material in the lagoon was adequately characterized:

- The lagoon was divided into quadrants as shown in Figure 2-1.
- Several samples were collected in each quadrant from depths of 6, 18, and 30 inches.
- Samples from the same depth and quadrant were composited.
- Leachate generated from each sample, according to EPA protocols, was analyzed for selected metals and compared to EP Toxicity standards.

The results of the soil leachate analyses are shown in Table 4-1. All soil samples were found to be non-hazardous according to U.S. EPA standards.

4.2 Ground Water Sampling

Ground water samples were collected on 5 January 1982 from CD-1, CD-2, CD-3, CD-4, CD-5, and from the plant production well on 7 January 1982. Individual PVC bailers were used to thoroughly evacuate each well, removing at least three volumes of water. The bailers were then used to collect a ground water sample from each well. A representative from the New York DEC was present during the ground water sampling on 5 and 7 January 1982, and each sample collected was split with the DEC for separate analysis. ERM and DEC metal samples were filtered using Whatman No. 5 filters (rated at 2.5 microns) to prevent the inclusion of natural suspended particulate matter in the analyses before they were acidified.

TABLE 4-1

SOIL LEACHATE RESULTS
(5 JANUARY 1982)

Sample Location and Depth	Fluoride (mg/kg)	Barium (mg/l)	Cadmium (mg/l)	Lead (mg/l)	Zinc (mg/l)
Quadrant 1					
6"	28	0.73	0.02	< .05	0.09
18"	28	< 0.5	< .01	< .05	0.11
30"	80	0.79	.01	< .05	0.07
Quadrant 2					
6"	28	0.63	< .01	< .05	0.07
18"	50	< .05	< .01	< .05	0.07
30"	359	0.52	0.01	< .05	0.09
Quadrant 3					
6"	310	2.9	0.02	< .05	0.11
18"	77	1.4	< .01	< .05	0.09
30"	67	2.4	< .01	< .05	0.08
Quadrant 4					
6"	58	1.4	0.05	< .05	0.10
18"	28	0.76	0.15	< .05	0.20
30"	55	0.69	0.09	< .05	0.12
EP Toxicity Limit		100.0	1.0	5.0	-

D-40

The analytical results obtained for the C&D Batteries ground water samples from Sanitary Science and Laboratories, Inc. of Newburgh, New York are shown in Table 4-2.

An unsuccessful attempt was made to obtain samples from the area of the spring at the tributary stream. Because of seasonally dry conditions, the spring was not flowing.

4.3 Discussion of Results

The laboratory soil leachate results indicate that metals are not leached in appreciable quantities, if at all, from soils on the floor of the lagoon. Lead concentrations in the leachate were uniformly below the detection limits, and only very small amounts of zinc and cadmium were found to be present. Based on the frequency with which barium was found in the soils and in the leachate, it appears to have been part of the previous plant owner's waste stream. Fluoride was shown to be the parameter present in the greatest concentrations. It, too, is thought to have been an important constituent of that waste stream.

The analyses of samples from the ground water monitoring wells show that water in the vicinity of the lagoon is generally of acceptable quality except for the presence of elevated fluoride concentrations, as compared to background levels in the upgradient wells. The values for conductivity and potassium were slightly elevated in the wells near the lagoon, especially in CD-2, CD-3 and CD-5, in contrast to the apparent background values detected in the upgradient well and the production well. These indicators of general ground water quality point to some alteration of natural ground water conditions in the vicinity of the lagoon. The samples taken from Wells CD-2, CD-3, CD-4, and CD-5 near the lagoon all contained fluoride at concentrations significantly above the State limitations (Table 4-3). The contrast between the fluoride levels in the four downgradient wells and the low concentrations found in the upgradient well, CD-1, and in the production well point to the lagoon as the probable fluoride source. The laboratory soil leachate results also tend to support this suspicion. It is to be expected that natural attenuation and dilution of the fluoride occurs as the ground water moves further downgradient from the lagoon. The locations of the monitoring wells in close proximity to the lagoon does not allow for prediction

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TABLE 4-2

GROUND WATER SAMPLE TEST RESULTS
(29 JANUARY 1982)

Parameter (mg/l)	Upgradient Wells		Downgradient Wells			
	Production Well	CD-1	CD-2	CD-3	CD-4	CD-5
Arsenic	<.005	<.005	<.005	<.005	<.005	<.005
Barium	<.5	0.50	0.50	0.70	<.50	1.3
Cadmium	<.01	<.01	<0.01	<.01	<.01	<.01
Chromium (Hex.)	<.01	<.01	<.01	<.01	<.01	<.01
Copper	1.5	0.05	0.05	<.05	<.05	<.05
Mercury	<.0002	<.0002	<0.0005	<.0002	<.0002	<.0002
Lead	.15	0.03	0.06	0.01	0.02	0.02
Selenium	<.005	<.005	<.005	<.005	<.005	<.005
Silver	<0.01	<.01	<.01	<.01	<0.01	<.01
Zinc	0.78	<.05	0.07	<.05	<.05	<.05
Sodium	6.5	6	15	13	5.5	13
Calcium	12	6.9	18	23	13	16
Magnesium	2.3	2.0	3.7	3.8	2.0	3.3
Potassium	1.4	2.3	20	20	4.8	20
Sulfate	25	16	34	18	28	31
Chloride	0.66	0.67	0.77	0.81	0.80	0.74
Fluoride	0.10	<.07	36	38	13	38
pH	6.7	6.8	7.1	7.6	6.9	6.9
Conductivity	120	82	243	250	129	216
Total Dissolved Solids	98	164	162	169	103	165
Alkalinity (as $CaCO_3$)	19	19	43	59	26	31

D-42

TABLE 4-3

NEW YORK STATE LIMITATIONS
ON WATER QUALITY IMPACTS
FOR SELECTED PARAMETERS
FOR GLASS GA GROUND WATER

	Maximum Level (mg/l)
Arsenic	0.025
Barium	1.0
Cadmium	0.01
Chloride	250
~~Chromium (hex.)~~	~~0.05~~
Copper	1.0
Fluoride	1.5
Lead	0.025
Mercury	0.002
Selenium	0.02
Silver	0.05
Zinc	5
Sulfate	250

D-43

of rates of downgradient attenuation of fluoride concentrations, however. Downgradient attenuation of chemical parameters could be investigated by installing additional monitoring wells farther away from the lagoon in the downgradient direction.

The evidence obtained from the five ground water monitoring wells strongly suggests that the ground water in the vicinity of the lagoon has been impacted by water infiltrating through the lagoon bottom where it picks up the more mobile elements from the soils and moves downward to the ground water table. It is likely, therefore, that cessation of disposal of non-contact cooling water in the lagoon will cut off the primary source of chemical contaminants reaching the ground water table. Stoppage of water flow through the soils at the bottom of the lagoon should effectively remove the lagoon as a source of ground water contamination. The location of the lagoon bottom approximately 13 to 14 feet above the ground water table would then leave a relatively thick unsaturated zone between the lagoon bottom soils and the ground water table. If the lagoon were then backfilled and the planned building constructed over it, vertical infiltration through the lagoon bottom soils would be effectively eliminated. The elevation difference between the lagoon bottom and the ground water table should be sufficient to preclude the possibility of the water table rising to the level of the lagoon bottom. Water table fluctuation in the wells near the lagoon has been less than 0.2 feet in the two months since the wells were installed.

In order to confirm the effectiveness of the remedial action, monitoring wells could be sampled periodically and the samples analyzed to demonstrate improvement in water quality.

SECTION 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The following conclusions can be drawn from the data presented in the report:

1. The C&D Batteries facility is underlain by glacial deposits that are generally coarse-grained, ranging from coarse sand to coarse gravel and containing variable, but generally minor amounts of interstitial silt. As a result, the permeabilities of the sediments beneath the plant site are quite high and relatively rapid movement of the ground water is to be expected.

2. The water table at the plant is within the range of 27 to 32 feet below land surface and about 13 to 18 feet below the floor of the disposal lagoon.

3. Ground water flow is apparently radial outward in the vicinity of the lagoon due to the presence of a ground water mound that has apparently formed in response to infiltration from the lagoon.

4. Soil samples systematically collected from the lagoon floor and analyzed according to EP Toxicity test protocols show that the soil material currently in the bottom of the lagoon is not classified as a hazardous waste.

5. Ground water samples collected from the monitoring wells and the production well indicate that fluoride is probably being leached from the lagoon and carried downward to the ground water table. It occurs in all of the wells near the lagoon in concentrations significantly above the New York State limitations.

D-45

6. The total areal extent of the elevated fluoride concentrations in ground water cannot be determined at the present time.

7. The occurrence of lead and copper in the production well is probably attributable to contamination during sampling.

8. Lead in Well CD-2 and barium in Well CD-5 slightly above New York State limits, probably came from the lagoon.

5.2 Recommendations

The following recommendations are made based on the findings of ERM's investigation. The recommended actions are aimed at (1) stopping the outflow of contaminants from the lagoon to the ground water, (2) monitoring the effects of this stoppage in reducing the concentrations of the various chemical parameters in the ground water beneath the plant property, and (3) determining whether any further mitigative action will be required. The recommended remedial actions are presented in the chronological order in which they should be performed. The results obtained from some of the earlier steps may modify later actions or preclude the need for performing some of them.

1. Disposal of non-contact cooling water in the lagoon should be discontinued as soon as possible to stop the flow of water through the contaminated soils in the bottom of the lagoon to the ground water table.

2. A series of surface water samples should be collected to determine whether fluoride or other contaminants are currently impacting nearby surface water. The samples should be collected from:

   a. The tributary stream, upstream from the spring.

   b. The spring.

   c. The tributary, downstream from the spring.

   d. From the lagoon.

These samples should be analyzed for fluoride, barium, and lead, at a minimum.

3. Resample and analyze water from the plant production well, taking care to prevent any contamination from laboratory plumbing or equipment.

4. Install additional monitoring wells farther from the lagoon in order to better define the regional ground water flow direction and gradient, and to determine the fluoride attenuation in the soils.

5. Sample and analyze the ground water in all of the wells around the lagoon after the disposal of non-contact cooling water in the lagoon has been stopped for a period of time. The ground water samples should be analyzed for those parameters that were found to occur at concentrations significantly above the background values in the upgradient wells. The waiting period between cessation of wastewater flow to the lagoon and sampling of ground water can be estimated. Sampling should begin at some time after the water in the bottom of the lagoon has drained to monitor improvement in ground water quality downgradient.

6. If ground water monitoring confirms that the lagoon was the primary source of contaminants to the ground water, then backfill the lagoon and construct the planned building expansion to cut off vertical infiltration through the buried lagoon soils.

REFERENCES

Frimpter, Michael. 1972. Ground Water Resources of Orange and Ulster Counties, New York. USGS Water Supply Paper 1985.

U.S. EPA. 1978. Sludge Treatment and Disposal, EPA Technology Transfer, EPA 625/4-78-012, Vol. 2, p. 71.

TEST RESULTS

NON-CONTACT COOLING WATER

CHEMICAL ANALYSIS OF PROCESS WATER
C&D BATTERIES (1981)
(ppm)

	Outfall B (002)			Outfall C (003)		
Date	9/21	9/22	9/23	9/21	9/22	9/23
TSS	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2
Oil and Grease	2	5	2	1	1	2
TOC	3	2	2	2	1	2
SO_4	22	21	21	25	22	23
NH_3-N	0.08	0.08	0.08	0.08	0.08	0.08
Sb	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
As	0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001
Ba	< 0.013	< 0.013	< 0.013	< 0.013	< 0.013	< 0.013
Be	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Cd	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
Cu	< 0.010	0.021	< 0.010	< 0.010	< 0.010	< 0.010
Fe	0.10	< 0.020	< 0.020	0.040	< 0.020	0.060
Pb	< 0.045	< 0.045	< 0.045	< 0.045	< 0.045	< 0.045
Ni	< 0.026	< 0.026	< 0.026	< 0.026	< 0.026	< 0.026
Zn	0.013	0.074	0.052	0.043	0.070	0.048

Environmental Resources Management, Inc.

SOIL AND GROUND WATER
CHEMICAL TEST RESULTS

SANITARY SCIENCE
&
LABORATORIES, INC.

555 ROUTE 94, NEW WINDSOR · NEWBURGH, NEW YORK 12550 · PHONE (914) 562-4392

EXAMINATION OF SOIL

Sample No.: 81-2912
~~Work Order~~ No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 1 at 6"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 79.3 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 28 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium.....	0.73	mg/l
Cadmium.....	0.02	mg/l
Lead.....	<0.05	mg/l
Zinc.....	0.09	mg/l

By: Ila G. Fulton
Ila G. Fulton, Ph.D.
Laboratory Director

SANITARY SCIENCE
&
LABORATORIES, INC.

555 ROUTE 94, NEW WINDSOR · NEWBURGH, NEW YORK 12550 · PHONE (914) 562-4392

EXAMINATION OF SOIL

Sample No.: 81-2913
~~Work Order No.~~: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 1 at 18"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 95.4 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 28 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium.....	<0.5	mg/l
Cadmium.....	<0.01	mg/l
Lead.....	<0.05	mg/l
Zinc.....	0.11	mg/l

By: Ila G. Fulton
Ila G. Fulton, Ph.D.
Laboratory Director

SANITARY SCIENCE
&
LABORATORIES, INC.

555 ROUTE 94, NEW WINDSOR · NEWBURGH, NEW YORK 12550 · PHONE (914) 562-4392

EXAMINATION OF SOIL

Sample No.: 81-2914
Work Order No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 1 at 30"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 96 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 80 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium.....	0.79 mg/l
Cadmium.....	<0.01 mg/l
Lead.....	<0.05 mg/l
Zinc.....	0.07 mg/l

By: Ila G. Fulton
Ila G. Fulton, Ph.D.
Laboratory Director

SANITARY SCIENCE
&
LABORATORIES, INC.

555 ROUTE 94, NEW WINDSOR · NEWBURGH, NEW YORK 12550 · PHONE (914) 562-4392

EXAMINATION OF SOIL

Sample No.: 81-2915
Work Order No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 2 at 6"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 84.5 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 28 mg/kg

A portion of the soil was leached as described in the Federal Register Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium.....	0.63	mg/l
Cadmium.....	<0.01	mg/l
Lead.....	<0.05	mg/l
Zinc.....	0.07	mg/l

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EXAMINATION OF SOIL

Sample No.: 81-2916
Work Order No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12745
Sampling Point: Quadrant 2 at 18"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 88.1 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 50 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium..... <0.5 mg/l

Cadmium..... <0.01 mg/l

Lead..... <0.05 mg/l

Zinc..... 0.07 mg/l

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EXAMINATION OF SOIL

Sample No.: 81-2917
Work Order No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 2 at 30"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 93.8 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 358 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium..... 0.52 mg/l

Cadmium..... 0.01 mg/l

Lead..... <0.05 mg/l

Zinc..... 0.09 mg/l

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EXAMINATION OF SOIL

Sample No.: 81-2918
~~Work Order~~ No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 3 at 6"
~~Collected~~ by: Mr. Rothstein

Date Reported: 5 January 1982
~~Date~~ Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 90.8 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 310 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium.....	2.9	mg/l
Cadmium.....	0.02	mg/l
Lead.....	<0.05	mg/l
Zinc.....	0.11	mg/l

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EXAMINATION OF SOIL

Sample No.: 81-2919
Work Order No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 3 at 18"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 93.1 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 77 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium.....	1.4 mg/l
Cadmium.....	<0.01 mg/l
Lead.....	<0.05 mg/l
Zinc.....	0.09 mg/l

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EXAMINATION OF SOIL

Sample No.: R1-2920
Work Order No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 3 at 30"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 92.9 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 67 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium..... 2.4 mg/l

Cadmium..... <0.01 mg/l

Lead..... <0.05 mg/l

Zinc..... 0.08 mg/l

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EXAMINATION OF SOIL

Sample No.: 81-2921
Work Order No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 4 at 6"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 68 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 58 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium.....	1.4 mg/l
Cadmium.....	0.05 mg/l
Lead.....	<0.05 mg/l
Zinc.....	0.10 mg/l

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EXAMINATION OF SOIL

Sample No.: 81-2922
Work Order No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 4 at 18"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 92.6 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 28 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium.....	0.76	mg/l
Cadmium.....	0.15	mg/l
Lead.....	<0.05	mg/l
Zinc.....	0.20	mg/l

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EXAMINATION OF SOIL

Sample No.: 81-2923
Work Order No.: T81-300
Client Work Order No.: 9550
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Sampling Point: Quadrant 4 at 30"
Collected by: Mr. Rothstein

Date Reported: 5 January 1982
Date Collected: 10 December 1981
Date Received: 15 December 1981
Time Sampled: ---

RESULTS

Dry Weight..... 93.0 %

Fluoride was determined on a slurry of the soil in deionized water according to Method 340.1 in Methods for Chemical Analysis of Waters and Wastewaters, USEPA, March 1979.

Fluoride (as received)..... 55 mg/kg

A portion of the soil was leached as described in the Federal Register, Vol. 45, p. 33127, May 19, 1980. The leachate was then analyzed for metals.

Barium.....	0.69	mg/l
Cadmium.....	0.09	mg/l
Lead.....	<0.05	mg/l
Zinc.....	0.12	mg/l

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EXAMINATION OF WATER

Sample No.: 82-7
Work Order No.: T82-7
Purchase Order No.: ---
Client Sample No.: ---

Date Reported: 29 January 1982
Date Collected: 5 January 1982
Date Received: 7 January 1982
Time Sampled: ---

Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Owner of Water Supply: C & D Battery
Location of Water Supply: above address
Sampling Point: Well CD-1
Collected By: Craig Werle of ERM Northeast

RESULTS

pH	6.8
Conductivity (in Mhos)	82
Chemical Tests	**mg/l**
Total Dissolved Solids	164
Alkalinity (as $CaCO_3$)*	19
Arsenic	less than 0.005
Barium	0.50
Cadmium	less than 0.01
Hexavalent Chromium	less than 0.01
Copper	0.05
Mercury	less than 0.0002
Lead	0.03
Selenium	less than 0.005
Zinc	less than 0.05
Sulfate	16
Silver	less than 0.01
Sodium	6
Calcium	6.9
Magnesium	2.0
Potassium	2.3
Chloride	0.67
Fluoride	less than 0.07

*To inflection point at pH 5.1

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EXAMINATION OF WATER

Sample No.: 82-8
Work Order No.: T82-7
Purchase Order No.: ---
Client Sample No.: ---

Date Reported: 29 January 1982
Date Collected: 5 January 1982
Date Received: 7 January 1982
Time Sampled: ---

Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Owner of Water Supply: C & D Battery
Location of Water Supply: above address
Sampling Point: Well CD-2
Collected By: Craig Werle of ERM Northeast

RESULTS

pH	7.1
Conductivity (in Mhos)	243

Chemical Tests	mg/l
Total Dissolved Solids	162
Alkalinity (as $CaCO_3$)*	43
Arsenic	less than 0.005
Barium	0.50
Cadmium	less than 0.01
Hexavalent Chromium	less than 0.01
Copper	0.05
Mercury	0.0005
Lead	0.06
Selenium	less than 0.005
Zinc	0.07
Sulfate	34
Silver	less than 0.01
Sodium	15
Calcium	18
Magnesium	3.7
Potassium	20
Chloride	0.77
Fluoride	36

*To inflection point at pH 5.1

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EXAMINATION OF WATER

Sample No.: 82-10
Work Order No.: T82-7
Purchase Order No.: ---
Client Sample No.: ---
Date Reported: 29 January 1982
Date Collected: 7 January 1982
Date Received: 7 January 1982
Time Sampled: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Owner of Water Supply: C & D Battery
Location of Water Supply: above address
Sampling Point: Well CD-3
Collected By: Craig Wenle of ERM Northeast

RESULTS

pH	7.6
Conductivity (in Mhos)	250

Chemical Tests	mg/l
Total Dissolved Solids	169
Alkalinity (as $CaCO_3$)*	59
Arsenic	less than 0.005
Barium	0.70
Cadmium	0.01
Hexavalent Chromium	less than 0.01
Copper	less than 0.05
Mercury	less than 0.0002
Lead	0.01
Selenium	less than 0.005
Zinc	less than 0.05
Sulfate	18
Silver	less than 0.01
Sodium	13
Calcium	23
Magnesium	3.8
Potassium	20
Chloride	0.81
Fluoride	38

*To inflection point at pH 5.1

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EXAMINATION OF WATER

Sample No.: 82-11
Work Order No.: T82-7
Purchase Order No.: ---
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Owner of Water Supply: C & D Battery
Location of Water Supply: above address
Sampling Point: Well CD-4
Collected By: Craig Warle of EPM Northeast

Date Reported: 29 January 1982
Date Collected: 7 January 1982
Date Received: 7 January 1982
Time Sampled: ---

RESULTS

pH	6.9
Conductivity (in Mhos)	129

Chemical Tests	mg/l
Total Dissolved Solids	103
Alkalinity (as $CaCO_3$)*	26
Arsenic	less than 0.005
Barium	less than 0.5
Cadmium	less than 0.01
Hexavalent Chromium	less than 0.01
Copper	less than 0.05
Mercury	less than 0.0002
Lead	0.02
Selenium	less than 0.005
Zinc	less than 0.05
Sulfate	28
Silver	0.01
Sodium	5.5
Calcium	13
Magnesium	2.0
Potassium	4.8
Chloride	0.80
Fluoride	13

*To inflection point at pH 5.1

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EXAMINATION OF WATER

Sample No.: 82-9
Work Order No.: T82-7
Purchase Order No.: —
Client Sample No.: —
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Ellenville, New York 12746
Owner of Water Supply: C & D Battery
Location of Water Supply: above address
Sampling Point: Well CD-5
Collected By: Craig Werle of ERM Northeast

Date Reported: 29 January 1982
Date Collected: 5 January 1982
Date Received: 7 January 1982
Time Sampled: ---

RESULTS

pH	6.9
Conductivity (in Mhos)	216

Chemical Tests	mg/l
Total Dissolved Solids	165
Alkalinity (as $CaCO_3$)*	31
Arsenic	less than 0.005
Barium	1.3
Cadmium	less than 0.01
Hexavalent Chromium	less than 0.01
Copper	less than 0.05
Mercury	less than 0.0002
Lead	0.02
Selenium	less than 0.005
Zinc	less than 0.05
Sulfate	31
Silver	less than 0.01
Sodium	13
Calcium	16
Magnesium	3.3
Potassium	20
Chloride	0.74
Fluoride	38

*To inflection point at pH 5.1

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EXAMINATION OF WATER

Sample No.: 82-12
Work Order No.: T82-7
Purchase Order No.: ---
Client Sample No.: ---
Date Reported: 29 January 1982
Date Collected: 7 January 1982
Date Received: 7 January 1982
Time Sampled: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Owner of Water Supply: C & D Battery
Location of Water Supply: above address
Sampling Point: Production Well
Collected By: Craig Werle of ERM Northeast

RESULTS

pH	6.7
Conductivity (in Mhos)	120

Chemical Tests	mg/l
Total Dissolved Solids	98
Alkalinity (as $CaCO_3$)*	19
Arsenic	less than 0.005
Barium	less than 0.5
Cadmium	less than 0.01
Hexavalent Chromium	less than 0.01
Copper	1.5
Mercury	less than 0.0002
Lead	0.15
Selenium	less than 0.005
Zinc	0.78
Sulfate	25
Silver	less than 0.01
Sodium	6.5
Calcium	12
Magnesium	2.3
Potassium	1.4
Chloride	0.66
Fluoride	0.10

*To inflection point at pH 5.1

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EXAMINATION OF SOIL

Sample No.: 81-2652
Work Order No.: 781-300
Purchase Order No.:
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Huguenot, New York 12746
Owner of Soil Supply: C & D Battery
Location of Soil Supply: above address
Sampling Point: not known
Collected By: Company Employee

Date Reported: 28 October 1981
Date Collected: 15 October 1981
Date Received: 16 October 1981
Time Sampled: ---

RESULTS

Dry Weight	76.0%
pH	5.6
Oil & Grease	7,185 mg/kg
Fluoride	2.8 mg/kg
Arsenic	4.39 mg/kg
Barium	1,278 mg/kg
Cadmium	1,060 mg/kg
Chromium	21.9 mg/kg
Lead	2,119 mg/kg
Mercury	0.15 mg/kg
Selenium	0.15 mg/kg
Silver	less than 0.33 mg/kg
Zinc	3,191 mg/kg

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EXAMINATION OF SOIL

Sample No.: S1-2651
Work Order No.: T81-300
Purchase Order No.: ---
Client Sample No.: ---
Client: C & D Battery, Attn: Richard Rothstein
Address: Route 209, Hurleyville, New York 12746
Owner of Soil Supply: C & D Battery
Location of Soil Supply: above address
Sampling Point: not known
Collected By: Company employee

Date Reported: 28 October 1981
Date Collected: 15 October 1981
Date Received: 16 October 1981
Time Sampled: ---

RESULTS

Dry Weight..... 73.9%

The sample as received was leached according to the procedure for EP toxicity tests and the leachate was analysed for metals.

ANALYSIS OF LEACHATE

Metal	mg/l
Arsenic	0.177
Barium	3.13
Cadmium	0.893
Chromium	less than 0.020
Lead	4.167
Mercury	less than 0.006
Selenium	0.001
Silver	less than 0.011
Zinc	1.319

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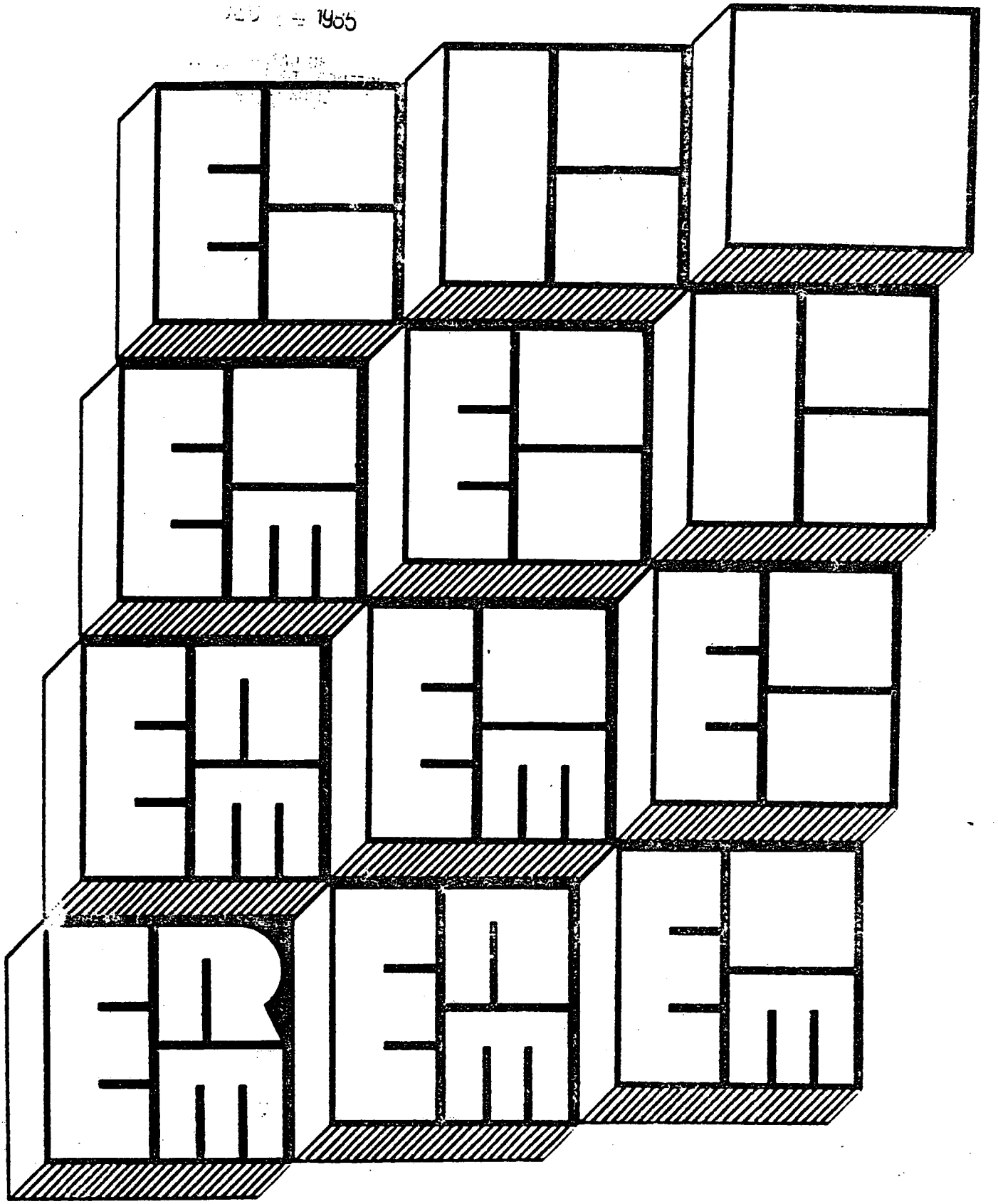

Environmental Resources Management, Inc.

Environmental Resources Management, inc.
999 West Chester Pike, P.O. Box 357, West Chester, PA 19380 • (215) 696-9110

31 March 1982

Mr. Louis Krause
C & D Batteries Division
3043 Walton Road
Plymouth Meeting, PA 19462

Dear Mr. Krause:

Environmental Resources Management, Inc. (ERM) is pleased to submit the enclosed draft copy of our report, "Supplementary Hydrogeologic Assessment Program for the C & D Batteries Division Plant, Huguenot, New York." The report will be finalized after any comments or necessary revisions have been incorporated. I will be waiting to hear from you after you have reviewed the text.

Two copies of the report have been sent to Richard Rothstein and one copy to Edward Giebel.

Should you have any questions regarding the report, please do not hesitate to contact us.

Yours very truly,

Charles A. Bandoian

Charles A. Bandoian, Ph.D., P.G.

Craig Werle

Craig Werle

/ejs

Enclosure

SUPPLEMENTARY HYDROGEOLOGIC ASSESSMENT PROGRAM FOR THE C&D BATTERIES DIVISION PLANT HUGUENOT, NEW YORK

30 March 1982

Environmental Resources Management, Inc.
999 West Chester Pike
P. O. Box 357
West Chester, Pennsylvania 19380

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SECTION 1

SUMMARY

Five additional ground water monitoring wells were installed downgradient from the lagoon near the C&D Batteries property boundaries. Ground water and surface water samples were obtained and were tested for selected chemical parameters. Ground water level measurements were taken in all monitoring wells at the C&D plant. The results of the sampling and testing program confirmed earlier hypotheses about ground water flow directions in the vicinity of the lagoon adjacent to the plant and provided valuable information regarding attenuation of chemical parameters in the soils, attenuation gradients, and impacts of effluent ground water on surface water flowing in the tributary stream to the northeast of the C&D plant property.

Fluoride attenuation in the soil was found to be considerable over a relatively short distance. Levels in four of the five new wells were above State-mandated limits for fluoride, however. The degree of fluoride attenuation was found to be strongly influenced by grain size of the soils under the plant site. Barium was found to be uniformly below detection limits in all five of the new wells. A single anomalous value for lead was detected in one of the new wells northeast of the lagoon. Impacts of ground water emanating from seeps along the tributary stream were found to be negligible for the parameters tested.

Ground water flow downgradient from the lagoon is toward the northeast, east and southeast, with the most prominent flow direction being toward the east-southeast where coarser sediments are found in the subsurface. Ground water flow toward the southeast is impeded and attenuation is aided somewhat by the presence of finer grained sediments in this direction.

Some of the recommendations from ERM's previous report are reiterated, namely that non-contact cooling water disposal in the lagoon be stopped, that the effects of this stoppage on ground water flow patterns and chemical migration from the lagoon be monitored, and that the lagoon be filled and the building expansion be built to prevent vertical infiltration of water through the buried lagoon bottom soils.

SECTION 2

BACKGROUND AND OBJECTIVES

2.1 Introduction

C&D Batteries Division retained Environmental Resources Management, Inc. (ERM) to continue the hydrogeologic assessment at the C&D Huguenot, New York battery plant. The results of the initial phase of data collection and interpretation were presented in the 15 February 1982 ERM report, "Implementation of a Hydrogeologic Assessment Plan for the C&D Batteries Division Plant, Huguenot, New York".

The initial phase of the investigation consisted of sampling and chemical analyses of lagoon bottom soils, installation of five ground water monitoring wells (one located upgradient from an inactive disposal lagoon on the C&D property and four wells located around the lagoon), and sampling and chemical analyses of ground water samples taken from the wells. Soil samples from the lagoon bottom were found to contain high concentrations of a number of chemical parameters relative to average concentrations expected for natural soils. The monitoring wells and a plant production well were sampled and the water samples were tested for the chemical parameters listed in Table 2-1. Chemical testing failed to detect most of the soil contaminants in ground water in concentrations above background levels. The test results indicated only that fluoride concentrations in the wells near the lagoons were elevated as compared to concentrations in upgradient wells. Barium and lead levels were found to be above background, each in a single well near the lagoon.

A water table contour map was prepared using water level measurements taken in the five observation wells installed during the first phase of work. The interpretive contours indicated a possible predominant ground water flow direction toward the southeast, with a secondary component of flow toward the northeast. However, the small number of wells, and their location within the zone of influence of an apparent ground water mound related to water infiltration from the lagoon, necessitated the collection of additional ground water information. It was suggested in the earlier ERM report that installation of additional monitoring wells farther from the lagoon would provide more definitive evidence of ground water flow gradients and patterns and the attenuative capacity of the soils beneath the C&D Batteries plant.

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TABLE 2-1

CHEMICAL TEST PARAMETERS

pH
Conductivity
Alkalinity (as $CaCO_3$)
Total Dissolved Solids
Arsenic
Barium
Cadmium
Chromium (hexavalent)
Copper
Mercury
Lead
Selenium
Silver
Zinc
Sodium
Caldium
Magnesium
Potassium
Sulfate
Chloride
Fluoride

C&D Batteries Division, after informing the New York Department of Environmental Conservation (DEC) of its intentions, instituted a second phase work program designed to further document the nature of ground water conditions at the Huguenot site.

The program consisted of the installation of five additional ground water monitoring wells near the C&D property boundaries in the apparent downgradient directions from the lagoon. The wells were to be sampled, and the ground water samples tested for lead, barium and fluoride, and for those ground water quality indicators that were detected at levels above background in some of the wells installed during the earlier investigation conducted at the site. In addition, a number of surface water samples were to be obtained in order to determine the concentrations of the same parameters in surface water near springs or seeps located downgradient from the lagoon.

2.2 Objectives

The specific goals of this second phase of the ground water assessment include:

- Define more accurately the configuration of the water table beneath the C&D Batteries facility.
- Further define the areal distribution of fluoride concentrations downgradient from the lagoon.
- Obtain data regarding natural attenuation rates and fluoride concentration gradients beneath the C&D property.
- Determine the impact, if any, of fluoride on local surface water.

2.3 Monitoring Well Installation

Five additional monitoring wells, designated as Wells CD-6 through CD-10, were installed at the C&D Batteries plant from 1 March to 5 March 1982. The well locations were selected to permit sampling of ground water and measurement of

ground water levels farther downgradient from the lagoon than the previously installed monitoring wells (Figure 2-1, in pocket). The newer wells were distributed broadly in order to obtain samples from all potential downgradient directions and from locations near the C&D property boundaries.

The five new monitoring wells were installed using hollow stem augers. Each borehole was drilled to a depth sufficient to permit installation of a ten-foot long well screen several feet below the water table. Construction details of the wells were the same as those described in ERM's earlier report. Details are shown graphically in the logs presented in the appendix to the present report.

All equipment was routinely washed between holes to prevent cross-contamination. All wells were developed by air-lift pumping for a minimum of two hours. Pumping was continued until the discharge ran clear and the well had been adequately evacuated prior to sampling.

2.4 Site Geology

The regional geologic setting in the Huguenot area was described in ERM's previous report. Subsurface conditions underlying the C&D Batteries facility (Figure 2-2) were defined in more detail during the second phase of drilling through the collection of split-spoon samples at five-foot intervals from the new borings (in the appendix). During the drilling of Well CD-6, coarse deposits of sand, gravel, and small cobbles were encountered that were similar to the material found in Wells CD-2 to CD-5 near the lagoon. The other four wells, CD-7 through CD-10, were located on a flat-topped bench that is about ten feet below the terrace on which the other wells, the C&D plant, and the lagoon are located. The material underlying the bench becomes finer grained in a southwesterly direction as can be seen by comparing the logs of CD-7 through CD-10. The sands and gravels that constitute the stratigraphic column at CD-7 change horizontally into well-sorted, fine sand and silt containing thin clay horizons.

It is known that a railroad line occupied the bench at some time in the past. Locally, the rail line was placed on top of a man-made embankment, and the upper five to ten feet of material penetrated may be fill. However, the fine sand and

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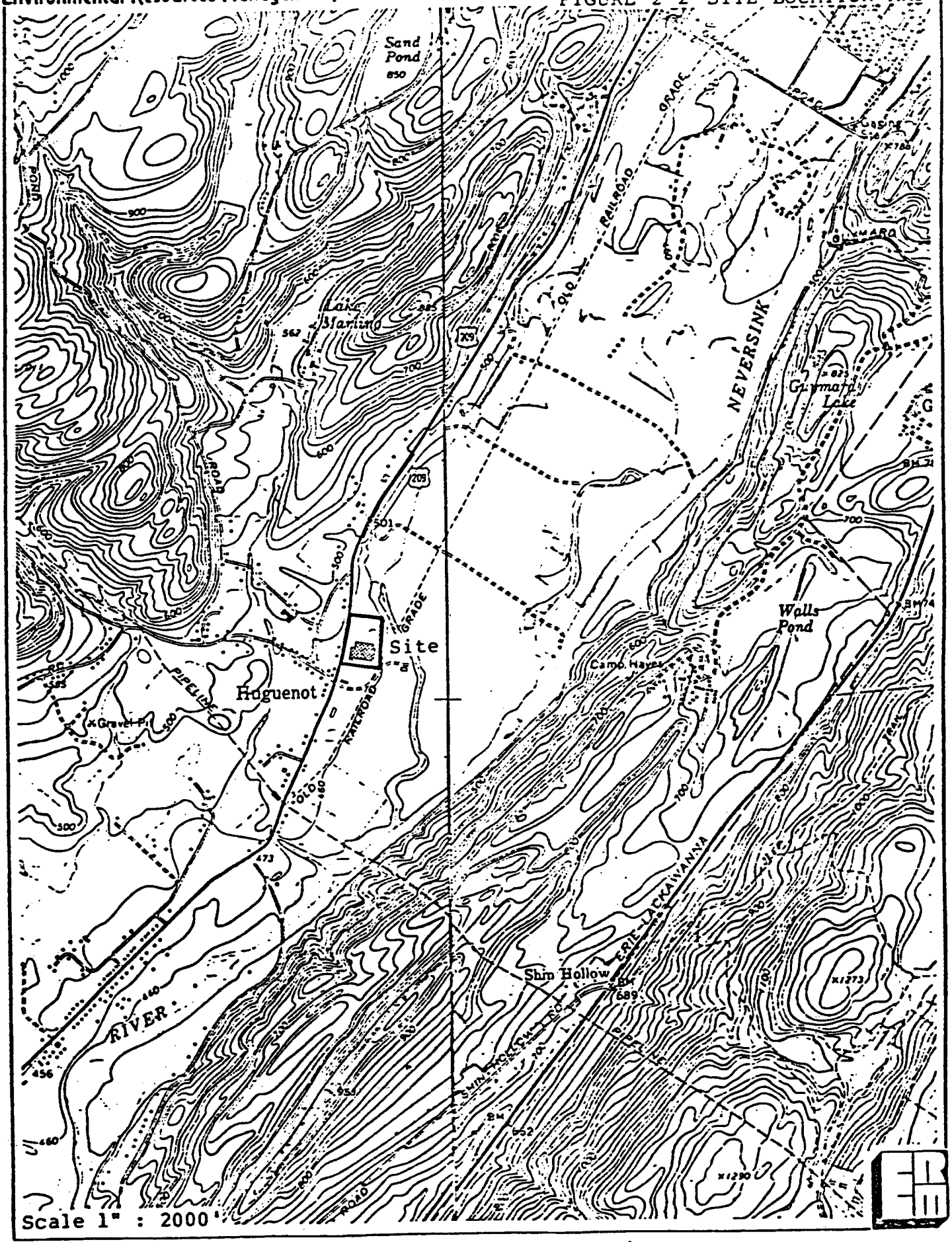
Environmental Resources Management, Inc.

FIGURE 2-2 SITE LOCATION MAP



silt found at depth beneath the bench is thought to represent natural deposits based on the presence of horizontal bedding and other primary sedimentary structures that reflect natural deposition.

2.5 Hydrogeology

The installation of five additional monitoring wells during this phase of work made it possible to more accurately define the configuration of the water table. An updated contour map is shown on Figure 2-1. This map is based on water level measurements taken in all ten observation wells on 5 March 1982. The measurements are summarized in Table 2-2.

A comparison of the updated map with the map presented in ERM's earlier report shows a slight uniform decline in water table elevation in the vicinity of the lagoon. In contrast, Well CD-1, the upgradient well, showed an increase of 0.53 feet in its water level. The basic water table configuration and associated flow directions shown on the earlier map were generally confirmed by the additional data. The hydraulic influence of the tributary stream northeast of the plant site is more clearly seen on the updated map. The water table in the vicinity of the stream is shown to uniformly slope toward the stream, with the gradient increasing as the stream is approached.

In ERM's previous report, the existence of two basic ground water flow paths away from the lagoon was discussed. These two flow directions were thought to be in response to the influences of the stream and the regional ground water gradient. The contour map shown on Figure 2-1 and the water quality information presented in the following section both tend to confirm and strengthen the earlier hypothesis. In addition, the effect of the lagoon water in modifying the natural gradients and flow directions is also more apparent.

The new contours indicate that ground water flow from Well CD-2 to CD-7 is enhanced by the presence of coarse-grained sand and gravel deposits, while flow toward Wells CD-8, CD-9, and CD-10 is impeded by the presence of finer grained sand and silt deposits in that direction. The results of testing for fluoride indicate that attenuation in the soil is greater in the area where the finer grained materials are found.

TABLE 2-2

SUMMARY OF WATER LEVEL MEASUREMENTS

Well No.	Elevation of Measuring Point	Surface Elevation	Depth to Water	Water Table Elevation
CD-1	474.37	474.62	30.33	444.04
CD-2	474.27	471.71	31.15	443.12
CD-3	476.47	474.84	33.32	443.15
CD-4	474.73	473.31	32.04	442.69
CD-5	472.98	470.21	29.84	443.14
CD-6	472.42	470.62	30.39	442.03
CD-7	461.24	459.07	18.78	442.46
CD-8	463.47	460.82	21.50	441.97
CD-9	464.28	462.41	22.85	441.43
CD-10	464.86	462.42	23.02	441.84

NOTES: Water levels collected 5 March 1982.
All elevations are in feet above mean sea level.

SECTION 3

SAMPLING PROCEDURES AND ANALYTICAL RESULTS

3.1 Ground Water Sampling

Ground water samples were obtained from Wells CD-6 through CD-10 and analyzed at Sanitary Science and Laboratories, Inc. of Newburgh, New York. The well sampling procedures were the same as those described in ERM's previous report. The samples were analyzed for those chemical parameters listed in Table 3-1. The results of the chemical testing are preliminary, having been received verbally in telephone communication, and are presented in Table 3-1.

3.2 Surface Water Sampling

Samples of surface water were taken at four locations shown on Figure 2-1. The samples were obtained from standing water at the bottom of the lagoon, from a spring or seep near the small tributary stream northeast of the lagoon, and from points upstream (at the marsh) and downstream (near the railroad embankment) from the spring. The stream and spring samples were obtained to determine the concentrations of the selected chemical parameters that reach the surface through seepage from the ground water table and to determine the impact of the effluent ground water on the tributary stream and the marsh upstream. The sampling was done in accordance with the procedures previously established for obtaining and handling the ground water samples.

3.3 Analytical Results

The results of testing for selected chemical parameters in the surface water and ground water samples are presented in Table 3-1. The analyses indicate that significant attenuation of some chemical parameters occurs between the inner wells adjacent to the lagoon and the outer wells approximately 125 to 250 feet farther away from the lagoon. When compared to the results obtained for ground water samples taken from the wells adjacent to the lagoon, it is apparent

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TABLE 3-1

GROUND WATER SAMPLE TEST RESULTS
(PRELIMINARY)

5 March 1982

Parameter*	CD-6	CD-7	CD-8	CD-9	CD-10
pH (Field)	6.5	6.85	9.3	8.3	10.1
pH (Laboratory)	7.7	8.2	9.7	8.9	10.9
Conductivity	155	373	336	320	375
Alkalinity (as $CaCO_3$)	35	62	91	76	80
Total Dissolved Solids	83	254	249	202	225
Chloride	8.6	9.6	11.0	8.8	12.9
Fluoride	1.6	21	3.5	3.5	5.8
Barium	<0.2	<0.2	<0.2	<0.2	<0.2
Calcium	20	13	31	24	39
Lead	0.12	<0.05	<0.05	<0.05	<0.05
Magnesium	2.5	1.0	2.5	3.3	3.7
Potassium	4.2	57	22	43	37
Sodium	6.5	19	11	9.5	16

	Upstream	Downstream	Spring	Lagoon
pH (Field)	6.2	5.9	5.9	7.4
pH (Laboratory)	6.7	6.8	6.6	7.2
Conductivity	179	126	105	151
Alkalinity (as $CaCO_3$)	22	16	13.3	18.5
Total Dissolved Solids	96	69	45	29
Chloride	19.5	11.0	8.1	9.9
Fluoride	<0.2	0.38	0.83	<0.2
Barium	<0.2	<0.2	<0.2	<0.2
Calcium	17	11	12	14
Lead	<0.05	<0.05	<0.05	<0.05
Magnesium	3.0	2.2	1.8	2.4
Potassium	2.2	1.6	2.5	1.2
Sodium	9.5	5.5	4.4	7.5

* All values, except pH and conductivity, given in mg/l.

that the levels of barium and fluoride are significantly lower in the wells farther from the lagoon. Barium levels were below the detection limit in all five of the outer wells.

In Wells CD-6, CD-8, CD-9 and CD-10, fluoride exceeds New York State limits by a markedly smaller margin than in Wells CD-2 through CD-5 near the lagoon (Table 3-2). The fluoride value obtained for the water sample from Well CD-7 is significantly higher than in the other four newly installed observation wells. This is thought to be an indication of a lesser attenuation capacity for the soil in this downgradient direction. This is in agreement with the information on the coarser grain size of the soils and the ground water contours which indicate enhanced ground water flow toward Well CD-7. Lead was found to exceed State standards only in Well CD-6.

When the parameters that are indicative of overall ground water quality are examined, it becomes apparent that the ground water has been impacted somewhat in Wells CD-7 through CD-10, and, to a lesser degree, in CD-6. In comparison to values in wells upgradient from the lagoon, Wells CD-7 through CD-10 showed significantly higher values for pH, total dissolved solids, conductivity, alkalinity, potassium, sodium, and calcium, in addition to fluoride. In Well CD-6, the higher value obtained for lead is not readily explained and is at odds with the relatively low values obtained for the ground water quality parameters in this well. The generally higher quality of the water taken from CD-6 is thought to indicate that this well is not located directly downgradient from the lagoon.

The quality of the surface water sampled in the vicinity of the plant was found to be generally quite good. Any minor impacts that may occur are probably related to ground water seepage to the tributary stream northeast of the plant. Chemical analysis of water from the bottom of the lagoon showed that there is apparently little or no interaction between the standing water in the lagoon and the contaminated lagoon bottom soils that would act to degrade the quality of the non-contact cooling water being introduced into the lagoon. This is thought to be the result of a short residence time for water in the lagoon. The quality of the lagoon water meets all applicable federal and State requirements for those parameters tested. The values for fluoride, lead, and barium, in particular, were below detection limits. It appears, therefore, that any uptake of contaminants by water seeping from the lagoon downward to the ground water table occurs as the water moves through the lagoon bottom sediments.

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TABLE 3-2

NEW YORK STATE LIMITATIONS
ON WATER QUALITY IMPACTS
FOR SELECTED PARAMETERS
FOR GLASS GA GROUND WATER

Parameter	Maximum Level (mg/l)
Arsenic	0.025
Barium	1.00
Cadmium	0.01
Chloride	250
Chromium (hexavalent)	0.05
Copper	1.00
Fluoride	1.50
Lead	0.025
Mercury	0.002
Selenium	0.02
Silver	0.05
Zinc	5.00

Chemical analysis of water from the spring and from the tributary creek at a point downstream from the spring show fluoride values considerably below New York State standards, but elevated slightly above the extremely low fluoride background levels in the wells upgradient from the lagoon. The fluoride value of 0.83 ppm at the spring shows the effects of rapid dilution a short distance downstream, where the fluoride value was found to be 0.38 ppm. Upstream from the seep, fluoride, lead, and barium values are all below the limits of detection of the analyses.

SECTION 4

CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The work performed in the second phase of the investigation has provided a clearer understanding of the movement of ground water in the vicinity of the lagoon. A number of inferences can now be made regarding subsurface migration or the lack of migration of certain chemical constituents from the lagoon bottom soils. The following conclusions can be drawn from the data presented in this report:

1. The regional flow pattern in the area of the C&D Batteries plant is toward the east and east-southeast. The pattern has been modified somewhat in the vicinity of the lagoon adjacent to the plant. In this area, a ground water mound has formed, resulting in steepened ground water gradients in the downgradient directions from the lagoon, toward the northeast, east, and southeast. Ground water movement in the vicinity of the lagoon is controlled by the topography and the location of the tributary stream east and northeast of the lagoon and by grain size variations in the unconsolidated sediments downgradient from the lagoon.

2. Ground water quality has been impacted somewhat in the downgradient directions from the lagoon, as indicated by the increases in the levels of the ground water indicator parameters tested, as compared to levels in upgradient wells. Drinking water standards were found to be exceeded for fluoride in the five new monitoring wells although to a lesser degree than in wells located nearer the lagoon, and lead was found to exceed the standards in one well.

3. Significant attenuation of fluoride and barium occurs in the soil over the relatively short distance from the inner ring of monitoring wells to the outer ring. Attenuation is greatest in those directions in which finer grained sediments were encountered, i.e., in the direction of Wells CD-8, CD-9, and CD-10.

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4. Water in the lagoon does not pick up contaminants from contact with the lagoon bottom soils, probably because of its short residence time in the lagoon.

5. Impacts on surface water in the tributary stream northeast of the lagoon are negligible as a result of attenuation in the soil and dilution of the spring water that reaches the stream. No impacts on the water in the marsh resulting from the existence of the lagoon were discernible.

4.2 Recommendations

The following recommendations are made based on the findings of ERM's investigation. The recommended actions are aimed at (1) stopping the outflow of contaminants from the lagoon to the ground water, (2) monitoring the effects of this stoppage in reducing the concentrations of the various chemical parameters in the ground water beneath the plant property, and (3) determining whether any further mitigative action will be required.

1. Disposal of non-contact cooling water in the lagoon should be discontinued to stop the flow of water through the contaminated soils in the bottom of the lagoon to the ground water table.

2. Changes in ground water conditions and quality should be monitored after cooling water disposal in the lagoon ceases. The ground water in all of the wells around the lagoon should be sampled and chemically analyzed for those parameters that were found to occur at concentrations significantly above the background values in the upgradient wells.

3. The lagoon can be backfilled with material of low permeability and the planned building expansion constructed to cut off vertical infiltration through the buried lagoon soils.

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APPENDIX

DRILLING LOGS AND
WELL INSTALLATION

Environmental Resources Management

Drilling Log

Project C&D Batteries Owner

Location Huguenot, NY W.O. Number

Well Number CD-6 Total Depth 42.5' Diameter 6"

Surface Elevation 470.62 Water Level: Initial 29.8' 24-hrs. 28.66'

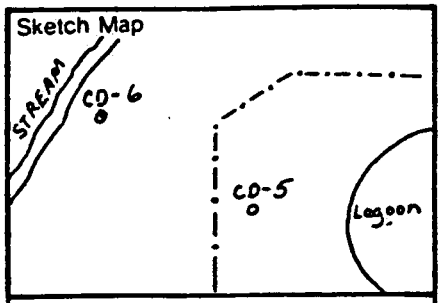
Screen: Dia. 2" Length 10' Slot Size .010

Casing: Dia. 2" Length 35' Type PVC

Drilling Company Empire Soils Drilling Method Holl. Stem Auger

Driller Mike Warner Log By C. Werle Date Drilled 3/1/82

Sketch Map



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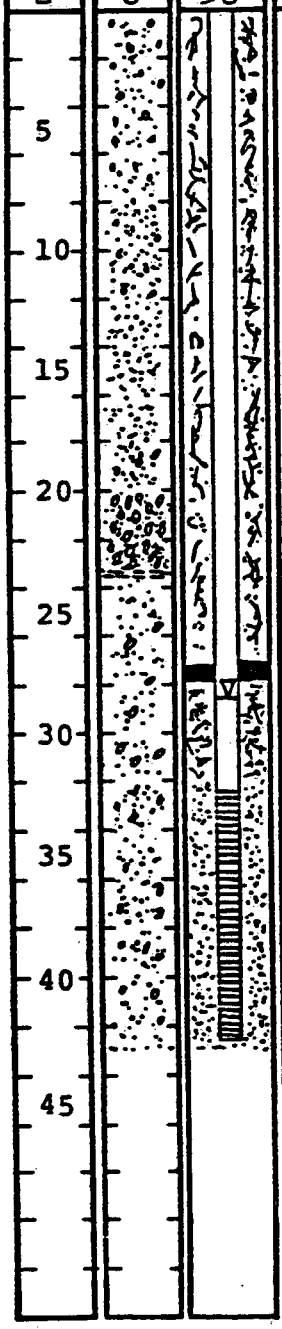

Sample Number	Description/Soil Classification (Color, Texture, Structures)
1	Grayish brown medium to coarse sand, gravel and small cobbles to 2"-minor fine sand and silt.
2	Coarse sand, gravel, cobbles with reddish silty clay coating.
3	Well sorted tannish brown medium to coarse sand, some pebbles - reddish silty coating.
4	Same as above.
5	Gravel and cobbles with minor medium and coarse sand - red silty clay stringer interbedded with coarse material.
6	Medium to coarse sand and gravel, some small stones, approximately 2%-3% fine sand and silt.
7	Coarse sand and gravel, some small cobbles, brown silty coating on all material; sample wet.
8	Dark tannish brown medium to coarse sand and gravel, some larger stones.
9	Same as above.

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Environmental Resources Management

Drilling Log

Project C&D Batteries Owner

Location Huguenot, NY W.O. Number

Well Number CD-7 Total Depth 29' Diameter 6"

Surface Elevation 459.07 Water Level: Initial 17.0 24-hrs. 16.39

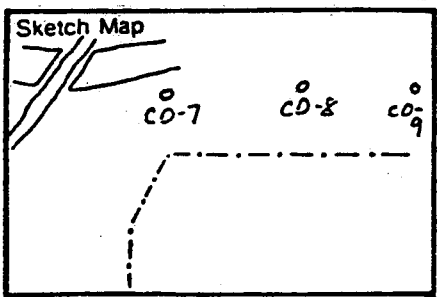
Screen: Dia. 2" Length 10' Slot Size .010

Casing: Dia. 2" Length 21' Type PVC

Drilling Company Empire Soils Drilling Method Holl. Stem Auger

Driller Mike Warner Log By C. Werle Date Drilled 3/3/82

Sketch Map



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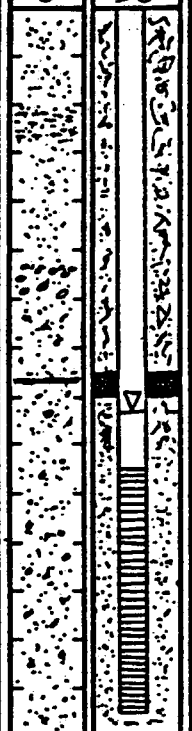

Depth (Feet)	Sample Number	Description/Soil Classification (Color, Texture, Structures)
	1	Well-sorted tannish brown very fine sand, small number of small (¼"-½") pebbles.
5	2	Tan brown very fine sand to coarse silt, totally homogeneous.
10	3	Tan very fine sand, sharp contact with coarse-horizon consisting of medium to coarse sand and gravel, some interstitial silt.
15	4	Coarse sand and gravel above 1" thick reddish tan clay - cohesive and plastic, below clay is brown well-sorted medium sand.
20	5	Medium and coarse sand, gravel, pebbles - silty coating on all material.
25	6	Medium to coarse sand with some gravel, grading into medium sand with minor interstitial silt.
30	7	Same as above.

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Environmental Resources Management

Drilling Log

Project C&D Batteries Owner

Location Huguenot, NY W.O. Number

Well Number CD-8 Total Depth 33.0' Diameter 6"

Surface Elevation 460.82 Water Level: Initial 23.5' 24-hrs.

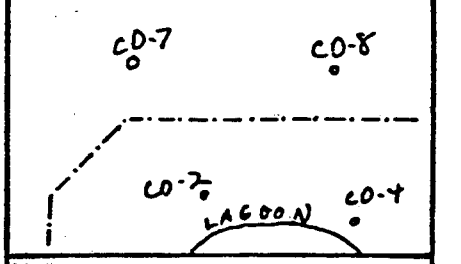
Screen: Dia. 2" Length 10' Slot Size .010

Casing: Dia. 2" Length 25' Type PVC

Drilling Company Empire Soils Drilling Method Holl.Stem Auger

Driller Mike Warner Log By C. Werle Date Drilled 3/4/82

Sketch Map



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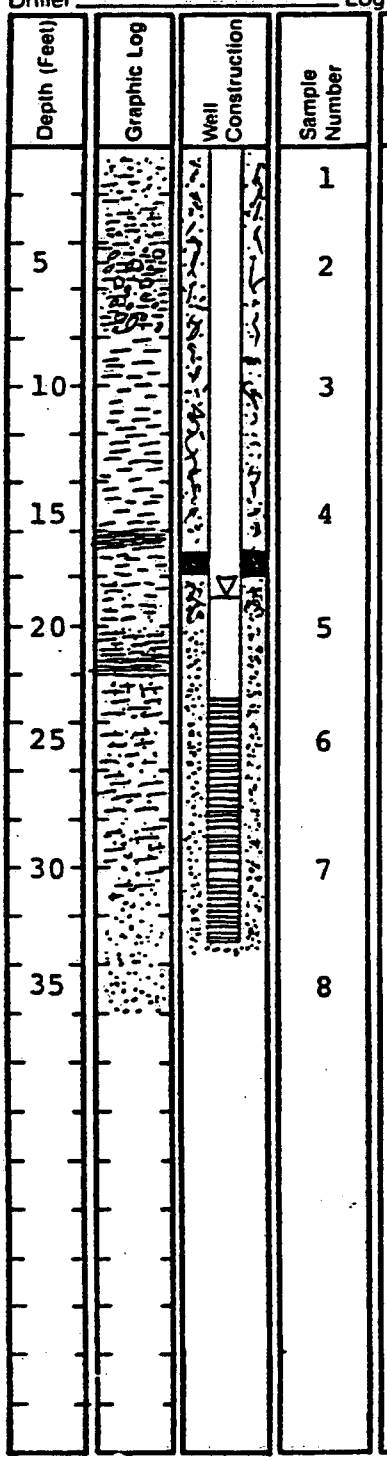

Sample Number	Description/Soil Classification (Color, Texture, Structures)
1	Brown, organic-rich fine sand and silt, some pebbles, minor interstitial plastic brown clay.
2	Dark brown silty,clayey matrix with gravel and pebbles-material cohesive and moderately plastic.
3	Tan, very well sorted coarse silt.
4	Tan well sorted silt,as above, grading into tan silty clay - sample damp.
5	Brownish tan medium and fine sand with interstitial silt, grading into reddish tan, plastic, cohesive silty clay.
6	Well sorted brown fine sand and silt, occasional pebbles.
7	Same as above, no pebbles.
8	Brown fine sand and silt with slight grain size variation over length of sample.

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Environmental Resources Management

Drilling Log

Project C&D Batteries Owner

Location Huguenot, NY W.O. Number

Well Number CD-9 Total Depth 33.0' Diameter

Surface Elevation 462.41 Water Level: Initial 24.35' 24-hrs. 20.56'

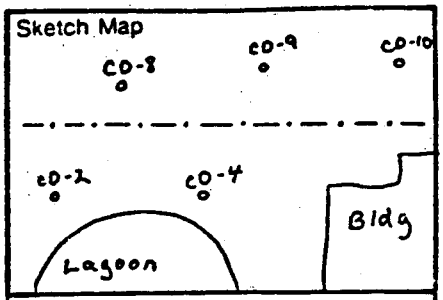
Screen: Dia. 2" Length 10' Slot Size .010

Casing: Dia. 2" Length 25' Type PVC

Drilling Company Empire Soils Drilling Method Holl Stem Auger

Driller Mike Warner Log By C. Werle Date Drilled 3/3/82

Sketch Map



Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
			1	Tannish brown fine sand and silt, some pebbles.
5			2	Dark tan, very well sorted silt, sample totally homogeneous.
10			3	Same as above.
15			4	Tan silt, as above, with interbedded laminae of lavender silty clay, sample wet.
20			5	Brown silty clay, sample cohesive and plastic interbedded horizons of brownish black medium sand with interstitial silt.
25			6	Brown fine and medium sand with interstitial silt sample somewhat cohesive.
30			7	Brown fine sand, percent silt in sample varies vertically.
35			8	Dark brown medium and fine sand with some interstitial silt.

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Environmental Resources Management

Drilling Log

Project C&D Batteries Owner

Location Huguenot, NY W.O. Number

Well Number CD-10 Total Depth 35' Diameter 6"

Surface Elevation 462.42 Water Level: Initial 23' 24-hrs. 20.6'

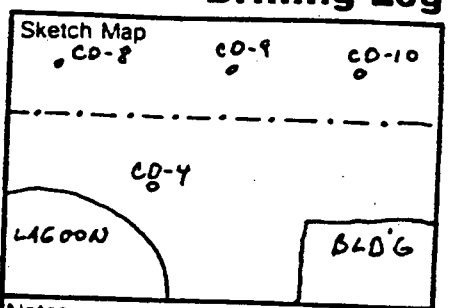
Screen: Dia. 2" Length 10' Slot Size .010

Casing: Dia. 2" Length 25' Type PVC

Drilling Company Empire Soils Drilling Method Holl. Stem Auger

Driller Mike Warner Log By C. Werle Date Drilled 3/2/82

Sketch Map



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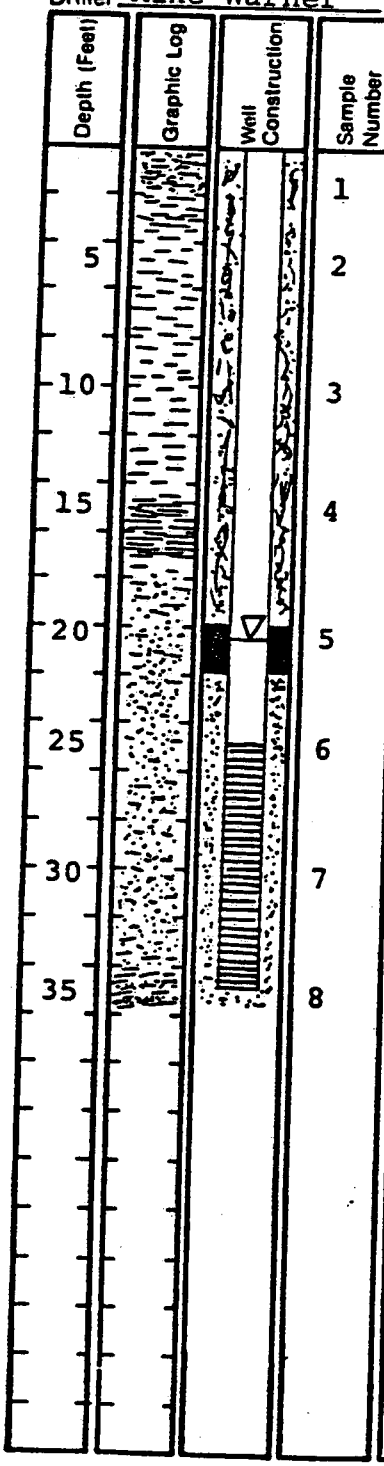

Sample Number	Description/Soil Classification (Color, Texture, Structures)
1	Brown fine sand and silt with pebbles.
2	Very well sorted, tannish brown coarse silt.
3	Tan well sorted silt.
4	Tan clayey silt, well sorted, cohesive, plastic, sample wet.
5	Brown fine sand with minor amount of silt, sample well sorted.
6	Same as above.
7	Brown fine and medium sand, silt present as coating on grains.
8	Brown clayey silt, sample fairly cohesive and plastic, some fine sandy horizons ½" to 1" thick.

D.13

New York State Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561-1696
(914) 255-5453

Thomas C. Jorling
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 076 048 173

November 10, 1987

C & D Power Systems, Inc.
P.O. Box 209, Route 209
Huguenot, New York 12746

ATTN: Mr. Michael Langan
Plant Engineer

RE: SPDES Compliance Sampling Results
C & D Battery
SPDES Permit No. NY-0096938
Deer Park(T), Orange County, Industrial

Dear Mr. Langan:

On October 21, 1987 you were forwarded a copy of the results of sampling which was performed by this Department with respect to the State Pollutant Discharge Elimination System (SPDES) Permit at the referenced facility.

The results indicate the presence of the following substances at the time of sampling:

Location/Parameter	Value	Comments
001-Septic Tank Effluent		
• Methylene Chloride	950 ug/l	Not Authorized for Discharge
• 1,4-Dichlorobenzene	95 ug/l	Violation of Water Quality Standard
Phenol	18 ug/l	Violation of Water Quality Standard
Calcium	12825 ug/l	No Action Required
• Chromium	13 ug/l	Not Authorized for Discharge

Copper	97 ug/l	Not Authorized for Discharge
Iron	735 ug/l	Violation of Water Quality Standard
Lead	480 ug/l	Permit Limit Compliance
Magnesium	2944 ug/l	No Action Required
Manganese	39 ug/l	No Action Required
Nickel	13 ug/l	Not Authorized for Discharge
Potassium	9989 ug/l	No Action Required
Sodium	22187 ug/l	No Action Required
Zinc	132 ug/l	Not Authorized for Discharge

Monitoring Wel

Aluminum	11079 ug/l	Violation of Water Quality Standard
Arsenic	4.2 ug/l	No Action Required
Barium	81 ug/l	No Action Required
Berylliom No	0.9 ug/l	No Action Required
Cadmium	7 ug/l	No Action Required
NP Calcium	14968 ug/l	No Action Required
Chromium	36 ug/l	No Action Required
Cobalt No	29 ug/l	No Action Required
Copper	103 ug/l	No Action Required
Iron	22078 ug/l	Violation of Water Quality Standard
Lead	77 ug/l	Violation of Water Quality Standard
Cyanide	35.2 ug/l	No Action Required

NP Magnesium	7231 ug/l	No Action Required
Manganese	746 ug/l	Violation of Water Quality Standard
Nickel	39 ug/l	No Action Required
Potassium	3231 ug/l	No Action Required
Sodium	15151 ug/l	No Action Required
Vanadium 50 Normal	25 ug/l	No Action Required
Zinc	164 ug/l	No Action Required
<u>002-Cooling Water</u> To Zinc -		
Aluminum	163 ug/l	Not Authorized for Discharge
Beryllium	0.9 ug/l	Not Authorized for Discharge
Cadmium	11 ug/l	Not Authorized for Discharge
Calcium	10805 ug/l	No Action Required
Chromium	16 ug/l	Not Authorized for Discharge
Cobalt	13 ug/l	Not Authorized for Discharge
Copper	93 ug/l	Not Authorized for Discharge
Iron	455 ug/l	Not Authorized for Discharge
Lead	36 ug/l	Permit Limit Compliance
Magnesium	2679 ug/l	No Action Required
Manganese	36 ug/l	Not Authorized for Discharge
Nickel	13 ug/l	Not Authorized for Discharge

Potassium	1175 ug/l	No Action Required
Sodium	8674 ug/l	No Action Required
Vanadium	8 ug/l	Not Authorized for Discharge
Zinc	67 ug/l	Not Authorized for Discharge

Please be advised that the discharge of substances not authorized by the SPDES Permit constitutes a violation of said permit and Article 17 of the Environmental Conservation Law. It is requested that you perform a short-term high-intensity monitoring program for the parameters which have been identified above as present but not authorized for discharge or that are in violation of Water Quality Standards. This program will consist of grab samples and flow measurements collected on each of three(3) consecutive operating days or discharge events. The samples must be analyzed according to the procedures specified in 40 CFR Part 136 using a limit of detection of at least the level utilized by this Department. Please submit the results of this sampling and the associated flow measurements within 60 days of the date of this letter. Upon receipt, this Department will evaluate the results and notify you regarding the need for a Permit modification and/or additional action to be taken, if necessary. Failure to comply with this request could result in this Department's taking more stringent measures to effect compliance with the SPDES Pemrit.

A review of the sample results indicates the potential for both surface and groundwater contamination exists. The results also indicate numerous violations of Article 17 of the Environmental Conservation Law. I have tentatively scheduled a compliance conference for December 1, 1987 at 10 a.m. to resolve this matter. Your attendance is required. I will be contacting you by telephone to confirm this date and to discuss topics of the conference.

Be advised that compliance with all terms and conditions of the SPDES Permit is the responsibility of the Permittee. Failure to comply could be punishable by fines of up to $10,000 per day and/or one year imprisonment for each violation.

Your cooperation in complying with your SPDES Permit and the protection of New York's water will be appreciated. I can be reached at (914) 255-5453 if you should have any questions or need assistance.

Very truly yours,

Shayne A. Mitchell

Shayne A. Mitchell
Assistant Sanitary Engineer
Region 3, Division of Water

SAM/ar

cc: Orange County Health Department

D.14

EnviroTest Laboratories Inc.

315 Fullerton Avenue
Newburgh, NY 12550
(914) 562-0890

MONITORING WELL
SANITARY

RECEIVED
[redacted] - 8 1988

January 6, 1988

C&D Power Systems
Box 209, Route 209
Huguenot, New York 12746

Attention: Mike Langan

SUBJECT: RESULTS OF WATER ANLAYSES, SAMPLES RECEIVED 12/17/87 AND 12/18/87, LAB #60528 AND #60586.

Dear Mr. Langan:

Enclosed please find the subject data for your review. All analyses were performed according to EPA accepted methodologies.

If there are any questions regarding this data, please do not hesitate to contact my office.

Very truly yours,

ENVIROTEST LABORATORIES, INC.

Ronald A. Bayer
President

RAB/pkd

D-104

EnviroTest Laboratories Inc.
315 Fullerton Ave
Newburgh, NY
(914) 562-0890

Sam, tray

LAB#: 60528-001 DATE REC'D: 87/12/17 DATE COLL'D: 87/12/16 STATUS: cl
LNAME: C & D FNAME:
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-007A sanitary

REPORT TO: same
BILL TO: same

T COLI:		Cr+6 :		COD :	
F COLI:		Phenol:	0.17	HARD-T :	
SPC :		CN :	0.02	Ca Hard:	
F :		B :		SO3 :	
NO3 :		Br :		Cl :	
NO2 :		Color :		Alk :	
T-PO4 :		Odor :		SOD-Inf:	
O-PO4 :		Turb :		BOD-Eff:	
SO4 :		pH :		BOD-S :	
MBAS :		LI :		TSS-Inf:	
SiO2 :		Cond :		TSS-Eff:	
H2S :		NH3-T :		MLSS :	
NH3-C :		TKN :		MLVSS :	
VSS :		Ca :	13	K :	13
TS :		Cr :	<0.05	Se :	
VS :		Co :	0.01	Ag :	
TDS :		Cu :	0.04	Na :	31
SS :		Au :		Tl :	
% SOL :		Fe :	0.28	Sn :	
G & O :		Pb :	0.75	Ti :	
Al :	0.32	Mg :	3.0	V :	<0.05
Sb :		Mn :	0.03	Zn :	0.27
As :	<5.0 ug/l	Hg :		THM :	
Ba :	<0.05	Mo :		TOC :	
Be :	<0.005	Ni :	<0.04		
Cd :	<0.01	Pd :			

Remarks: All results in mg/l unless otherwise indicated.

Ronald A. Bayer
Laboratory Director 12/30/8

D-405

EnviroTest Laboratories Inc.

315 Fullerton Avenu
Newburgh, NY 125
(914) 562-0890

Sanitary

LAB#: 60528-001 DATE REC'D: 87/12/18 DATE COLL'D: 87/12/16 STATUS: clos
NAME: C & D
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-007A COLL'D BY:

REPORT TO: same
BILL TO: same

VOLATILE ORGANICS ANALYSIS

Bromodichloromethane	:	Tetrachloroethylene	:
Bromoform	:	Trans-1,3-dichloropropene	:
Bromomethane	:	Trans-1,2-dichloroethylene	:
Carbon tetrachloride	:	1,1,1-trichloroethane	:
Chlorobenzene	:	1,1,2-trichloroethane	:
Chloroethane	:	Trichloroethylene	:
2-chloroethylvinyl ether	:	Trichlorofluoromethane	:
Chloroform	:	1,1,2-trichloro-1,2,2-	:
Chloromethane	:	trifluoroethane	:
Cis-1,3-dichloropropene	:	Vinyl chloride	:
Dibromochloromethane	:		
1,1-dichloroethane	:	Benzene	:
1,2-dichloroethane	:	1,2-dichlorobenzene	:
1,1-dichloroethylene	:	1,3-dichlorobenzene	:
1,2-dichloropropane	:	1,4-dichlorobenzene	:
Methylene chloride	: <5.0	Ethylbenzene	: 140
1,1,2,2-tetrachloroethane	:	Toluene	:
		Total Xylenes	:

All results in ug/l.

Remarks: All other EPA 601 <1.0 ug/l.

Ronald A. Bayer
Laboratory Director 1/5/88

D-106

EnviroTest Laboratories Inc.
315 Fullerton Avenue
Newburgh, NY 1255
(914) 562-0890

Cooling Water 002

LAB#: 60528-003 DATE REC'D: 87/12/18 DATE COLL'D: 87/12/16 STATUS: close
NAME: C & D
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-017A COLL'D BY:

REPORT TO: same
BILL TO: same

VOLATILE ORGANICS ANALYSIS

Bromodichloromethane	:	Tetrachloroethylene	:
Bromoform	:	Trans-1,3-dichloropropene	:
Bromomethane	:	Trans-1,2-dichloroethylene	:
Carbon tetrachloride	:	1,1,1-trichloroethane	:
Chlorobenzene	:	1,1,2-trichloroethane	:
Chloroethane	:	Trichloroethylene	:
2-chloroethylvinyl ether	:	Trichlorofluoromethane	:
Chloroform	:	1,1,2-trichloro-1,2,2-	:
Chloromethane	:	trifluoroethane	:
Cis-1,3-dichloropropene	:	Vinyl chloride	:
Dibromochloromethane	:		
1,1-dichloroethane	:	Benzene	:
1,2-dichloroethane	:	1,2-dichlorobenzene	:
1,1-dichloroethylene	:	1,3-dichlorobenzene	:
1,2-dichloropropane	:	1,4-dichlorobenzene	:
Methylene chloride	:	Ethylbenzene	:
1,1,2,2-tetrachloroethane	:	Toluene	:
		Total Xylenes	:

All results in ug/l.

Remarks: All EPA 601 <1.0 ug/l.

Ronald A. Bayer
Laboratory Director 1/5/88

D-107

EnviroTest Laboratories Inc.

Cooling water 002

315 Fullerton Aven
Newburgh, NY 12
(914) 562-0890

LAB#: 60528-003 DATE REC'D: 87/12/17 DATE COLL'D: 87/12/16 STATUS: close
LNAME: C & D FNAME:
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-017A cooling water

REPORT TO: same
BILL TO: same

T COLI:		Cr+6 :		COD :	
F COLI:		Phenol:	<0.01	HARD-T :	
SPC :		CN :	<0.005	Ca Hard:	
F :		B :		SO3 :	
NO3 :		Br :		Cl :	
NO2 :		Color :		Alk :	
T-PO4 :		Odor :		BOD-Inf:	
O-PO4 :		Turb :		BOD-Eff:	
SO4 :		pH :		BOD-S :	
MBAS :		LI :		TSS-Inf:	
SiO2 :		Cond :		TSS-Eff:	
H2S :		NH3-T :		MLSS :	
NH3-C :		TKN :		MLVSS :	
VSS :		Ca :	9.0	K :	0.73
TS :		Cr :	<0.05	Se :	
VS :		Co :	<0.03	Ag :	
TDS :		Cu :	0.01	Na :	7.0
SS :		Au :		Tl :	
% SOL :		Fe :	0.07	Sn :	
G & O :		Pb :	<0.05	Ti :	
Al :	0.16	Mg :	2.0	V :	<0.05
Sb :		Mn :	0.02	Zn :	0.02
As :	<5.0 ug/l	Hg :		THM :	
Ba :	<0.05	Mo :		TOC :	
Be :	<0.005	Ni :	<0.04		
Cd :	<0.01	Pd :			

Remarks: All results in mg/l unless otherwise indicated.

Ronald A. Bayer
Laboratory Director 12/30/87

D-108

EnviroTest Laboratories Inc.
315 Fullerton A
Newburgh, NY
(914) 562-08

Monitoring

LAB#: 60528-002 DATE REC'D: 87/12/17 DATE COLL'D: 87/12/16 STATUS: cl
LNAME: C & D FNAME:
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-013A Monitoring

REPORT TO: same
BILL TO: same

T COLI:		Cr+6 :		COD :	
F COLI:		Phenol:	<0.01	HARD-T :	
SPC :		CN :	<0.005	Ca Hard:	
F :		B :		SO3 :	
NO3 :		Br :		Cl :	
NO2 :		Color :		Alk :	
T-PO4 :		Odor :		BOD-Inf:	
O-PO4 :		Turb :		BOD-Eff:	
SO4 :		pH :		BOD-S :	
MBAS :		LI :		TSS-Inf:	
SiO2 :		Cond :		TSS-Eff:	
H2S :		NH3-T :		MLSS :	
NH3-C :		TKN :		MLVSS :	
VSS :		Ca :	9.9	K :	0.74
TS :		Cr :	<0.05	Se :	
VS :		Co :	0.02	Ag :	
TDS :		Cu :	0.02	Na :	18
SS :		Au :		Tl :	
% SOL :		Fe :	3.1	Sn :	
G & O :		Pb :	0.06	Ti :	
Al :	0.96	Mg :	2.7	V :	<0.05
Sb :		Mn :	0.27	Zn :	0.04
As :	<5.0 ug/l	Hg :		THM :	
Ba :	<0.05	Mo :		TOC :	
Be :	<0.005	Ni :	<0.04		
Cd :	<0.01	Pd :			

Remarks: All results in mg/l unless otherwise indicated.

Ronald A. Bayer
Laboratory Director 12/3

D-109

EnviroTest Laboratories Inc.
315 Fullerton Avenu
Newburgh, NY 125
(914) 562-0890

LAB#: 60528-002 DATE REC'D: 87/12/18 DATE COLL'D: 87/12/16 STATUS: clos
NAME: C & D
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-013A COLL'D BY:

REPORT TO: same
BILL TO: same

VOLATILE ORGANICS ANALYSIS

Bromodichloromethane	:	Tetrachloroethylene	:
Bromoform	:	Trans-1,3-dichloropropene	:
Bromomethane	:	Trans-1,2-dichloroethylene	:
Carbon tetrachloride	:	1,1,1-trichloroethane	:
Chlorobenzene	:	1,1,2-trichloroethane	:
Chloroethane	:	Trichloroethylene	:
2-chloroethylvinyl ether	:	Trichlorofluoromethane	:
Chloroform	:	1,1,2-trichloro-1,2,2-	:
Chloromethane	:	trifluoroethane	:
Cis-1,3-dichloropropene	:	Vinyl chloride	:
Dibromochloromethane	:		
1,1-dichloroethane	:	Benzene	:
1,2-dichloroethane	:	1,2-dichlorobenzene	:
1,1-dichloroethylene	:	1,3-dichlorobenzene	:
1,2-dichloropropane	:	1,4-dichlorobenzene	:
Methylene chloride	: <1.0	Ethylbenzene	:
1,1,2,2-tetrachloroethane	:	Toluene	:
		Total Xylenes	:

All results in ug/l.

Remarks: All EPA 601 <1.0 ug/l.

Ronald A. Bayer
Laboratory Director 1/5/88

D-110

EnviroTest Laboratories Inc.

315 Fullerton Av
Newburgh, NY 1
(914) 562-0890

Monitoring Well
pH 6.18

LAB#: 50586-002 DATE REC'D: 87/12/18 DATE COLL'D: 87/12/18 STATUS: clo
LNAME: C & D FNAME:
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-031

REPORT TO: same
BILL TO: same

T COLI:		Cr+6 :		COD :	
F COLI:		Phenol:	<0.01	HARD-T :	
SPC :		CN :	<0.005	Ca Hard:	
F :		B :		SO3 :	
NO3 :		Br :		Cl :	
NO2 :		Color :		Alk :	
T-PO4 :		Odor :		BOD-Inf:	
O-PO4 :		Turb :		BOD-Eff:	
SO4 :		pH :		BOD-S :	
MBAS :		LI :		TSS-Inf:	
SIO2 :		Cond :		TSS-Eff:	
H2S :		NH3-T :		MLSS :	
NH3-C :		TKN :		MLVSS :	
VSS :		Ca :	7.8	K :	0.61
TS :		Cr :	0.05	Se :	
VS :		Co :	0.02	Ag :	
TDS :		Cu :	<0.01	Na :	17
SS :		Au :		Tl :	
% SCL :		Fe :	1.1	Sn :	
G & O :		Pb :	<0.05	Ti :	
Al :	0.39	Mg :	2.5	V :	<0.05
Sb :		Mn :	0.09	Zn :	<0.01
As :	<5.0 ug/l	Hg :		THM :	
Ba :	<0.05	Mo :		TOC :	
Be :	<0.005	Ni :	<0.04		
Cd :	<0.01	Pd :			

Remarks: All results in mg/l unless otherwise indicated.

Ronald A. Bayer
Laboratory Director 12/30/87

EnviroTest Laboratories Inc.
315 Fullerton Aver
Newburgh, NY 12
(914) 562-0890

Monitoring Well
pH 6.18

LAB#: 60586-002 DATE REC'D: 87/12/18 DATE COLL'D: 87/12/18 STATUS: clo
NAME: C & D
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-031 COLL'D BY:

REPORT TO: same
BILL TO: same

VOLATILE ORGANICS ANALYSIS

Bromodichloromethane	:	Tetrachloroethylene	:
Bromoform	:	Trans-1,3-dichloropropene	:
Bromomethane	:	Trans-1,2-dichloroethylene	:
Carbon tetrachloride	:	1,1,1-trichloroethane	:
Chlorobenzene	:	1,1,2-trichloroethane	:
Chloroethane	:	Trichloroethylene	:
2-chloroethylvinyl ether	:	Trichlorofluoromethane	:
Chloroform	:	1,1,2-trichloro-1,2,2-	:
Chloromethane	:	trifluoroethane	:
Cis-1,3-dichloropropene	:	Vinyl chloride	:
Dibromochloromethane	:		
1,1-dichloroethane	:	Benzene	:
1,2-dichloroethane	:	1,2-dichlorobenzene	:
1,1-dichloroethylene	:	1,3-dichlorobenzene	:
1,2-dichloropropane	:	1,4-dichlorobenzene	:
Methylene chloride	: 31	Ethylbenzene	:
1,1,2,2-tetrachloroethane	:	Toluene	:
		Total Xylenes	:

All results in ug/l.

Remarks: All other EPA 601 <1.0 ug/l.

Ronald A. Bayer
Laboratory Director 1/5/88

EnviroTest Laboratories Inc.

Cooling Water 002

PH 7.18

315 Fulle
Newburg
(914) 562

LAB#: 60586-003 DATE REC'D: 87/12/18 DATE COLL'D: 87/12/18 STATUS:
LNAME: C & D FNAME:
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-032

REPORT TO: same
BILL TO: same

T COLI:		Cr+6 :		COD :	
F COLI:		Phenol:	<0.01	HARD-T :	
SPC :		CN :	<0.005	Ca Hard:	
F :		B :		SO3 :	
NO3 :		Br :		Cl :	
NO2 :		Color :		Alk :	
T-PO4 :		Odor :		BOD-Inf:	
O-PO4 :		Turb :		BOD-Eff:	
SO4 :		pH :		BOD-S :	
MBAS :		LI :		TSS-Inf:	
SiO2 :		Cond :		TSS-Eff:	
H2S :		NH3-T :		MLSS :	
NH3-C :		TKN :		MLVSS :	
VSS :		Ca :	7.3	K :	0.36
TS :		Cr :	<0.02	Se :	
VS :		Co :	<0.01	Ag :	
TDS :		Cu :	0.02	Na :	5.8
SS :		Au :		Tl :	
% SOL :		Fe :	<0.03	Sn :	
G & O :		Pb :	<0.05	Ti :	
Al :	0.12	Mg :	2.0	V :	<0.05
Sb :		Mn :	0.02	Zn :	0.02
As :	<5.0 ug/l	Hg :		THM :	
Ba :	<0.05	Mo :		TOC :	
Be :	<0.005	Ni :	0.04		
Cd :	0.02	Pd :			

Remarks: All results in mg/l unless otherwise indicated.

Ronald A. Bayer
Laboratory Director 12/20

EnviroTest Laboratories Inc.
315 Fullerton Avenu
Newburgh, NY 125
(914) 562-0890

Cooling water 002
PH 7.18

LAB#: 60586-003 DATE REC'D: 87/12/18 DATE COLL'D: 87/12/18 STATUS: clos
NAME: C & D
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-032 COLL'D BY:

REPORT TO: same
BILL TO: same

VOLATILE ORGANICS ANALYSIS

Bromodichloromethane	:	Tetrachloroethylene	:
Bromoform	:	Trans-1,3-dichloropropene	:
Bromomethane	:	Trans-1,2-dichloroethylene	:
Carbon tetrachloride	:	1,1,1-trichloroethane	:
Chlorobenzene	:	1,1,2-trichloroethane	:
Chloroethane	:	Trichloroethylene	:
2-chloroethylvinyl ether	:	Trichlorofluoromethane	:
Chloroform	:	1,1,2-trichloro-1,2,2-	:
Chloromethane	:	trifluoroethane	:
Cis-1,3-dichloropropene	:	Vinyl chloride	:
Dibromochloromethane	:		
1,1-dichloroethane	:	Benzene	:
1,2-dichloroethane	:	1,2-dichlorobenzene	:
1,1-dichloroethylene	:	1,3-dichlorobenzene	:
1,2-dichloropropane	:	1,4-dichlorobenzene	:
Methylene chloride	:	Ethylbenzene	:
1,1,2,2-tetrachloroethane	:	Toluene	:
		Total Xylenes	:

All results in ug/l.

Remarks: All EPA 601 <1.0 ug/l.

Ronald A. Bayer
Laboratory Director 1/5/88

D-114

EnviroTest Laboratories Inc.

Sanitary 001

315 Fullerton Aver
Newburgh, NY 12
(914) 562-0890

pH 7.62

LAB#: 60586-004 DATE REC'D: 87/12/18 DATE COLL'D: 87/12/18 STATUS: clos
LNAME: C & D FNAME:
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-033

REPORT TO: same
BILL TO: same

T COLI:		Cr+6 :		COD :	
F COLI:		Phenol:	0.30	HARD-T :	
SPC :		CN :	0.03	Ca Hard:	
F :		B :		SO3 :	
NO3 :		Br :		Cl :	
NO2 :		Color :		Alk :	
T-PO4 :		Odor :		BOD-Inf:	
O-PO4 :		Turb :		BOD-Eff:	
SO4 :		pH :		BOD-S :	
MBAS :		LI :		TSS-Inf:	
SiO2 :		Cond :		TSS-Eff:	
H2S :		NH3-T :		MLSS :	
NH3-C :		TKN :		MLVSS :	
VSS :		Ca :	11	K :	12
TS :		Cr :	0.08	Se :	
VS :		Co :	0.02	Ag :	
TDS :		Cu :	0.02	Na :	30
SS :		Au :		Tl :	
% SOL :		Fe :	0.26	Sn :	
G & O :		Pb :	0.48	Ti :	
Al :	0.19	Mg :	3.3	V :	<0.05
Sb :		Mn :	0.27	Zn :	0.24
As :	<5.0 ug/l	Hg :		THM :	
Ba :	<0.05	Mo :		TOC :	
Be :	<0.005	Ni :	0.04		
Cd :	0.01	Pd :			

Remarks: All results in mg/l unless otherwise indicated.

Ronald A. Bayer
Laboratory Director 12/30/8

D-115

EnviroTest Laboratories Inc.
315 Fullerton Aver
Newburgh, NY 12
(914) 562-0890

Sanitary col
PH 7.62

LAB#: 60586-004 DATE REC'D: 87/12/18 DATE COLL'D: 87/12/18 STATUS: clo
NAME: C & D
STREET: CITY: STATE: ZIP:
SPL LOCATION: 87-12-033 COLL'D BY:

REPORT TO: same
BILL TO: same

VOLATILE ORGANICS ANALYSIS

Bromodichloromethane	:	Tetrachloroethylene	:
Bromoform	:	Trans-1,3-dichloropropene	:
Bromomethane	:	Trans-1,2-dichloroethylene	:
Carbon tetrachloride	:	1,1,1-trichloroethane	:
Chlorobenzene	: 1.1	1,1,2-trichloroethane	:
Chloroethane	:	Trichloroethylene	:
2-chloroethylvinyl ether	:	Trichlorofluoromethane	:
Chloroform	:	1,1,2-trichloro-1,2,2-	:
Chloromethane	:	trifluoroethane	:
Cis-1,3-dichloropropene	:	Vinyl chloride	:
Dibromochloromethane	:		
1,1-dichloroethane	:	Benzene	:
1,2-dichloroethane	:	1,2-dichlorobenzene	:
1,1-dichloroethylene	:	1,3-dichlorobenzene	:
1,2-dichloropropane	:	1,4-dichlorobenzene	: 100
Methylene chloride	:	Ethylbenzene	:
1,1,2,2-tetrachloroethane	:	Toluene	:
		Total Xylenes	:

All results in ug/l.

Remarks: All other EPA 601 <1.0 ug/l.

Ronald A. Bayer
Laboratory Director 1/5/88

D-116

SPDES LABORATORY ANALYSIS

COMPARISON SHEET — MONITORING WELL - SANITARY DRAINFIELD

UPDATED: 03-07-88

(1) PARAMETER (6NYCRR 703.6)	8/87 NYDEC (4) MONITORING WELL (ug/l)	12/16 C&D (7) MONITORING WELL (ug/l)	12/17 C&D (10) MONITORING WELL (ug/l)	12/18 C&D (13) MONITORING WELL (ug/l)	1/19 C&D (19) MONITORING WELL (ug/l)	1/20 C&D (23) MONITORING WELL (ug/l)	1/21 C&D (27) MONITORING WELL (ug/l)	2/10 C&D MONITORING WELL (ug/l)	2/11 C&D MONITORING WELL (ug/l)	2/12 C&D MONITORING WELL (ug/l)
METHYLENE CHLORIDE	0.00	<1.00	<1.00	31.00	<5.00	<5.00	<5.00			
1,4-DICHLOROBENZENE	0.00	<1.00	<1.00	<1.00	<10.00	<10.00	<10.00			
PHENOL (2.0 ug/L)	0.00	<10.00	<10.00	<5.00	<10.00	<10.00	<10.00			
CALCIUM	14968.00	9900.00	9900.00	7800.00	7370.00	7250.00	7380.00			
CHROMIUM (100.0 ug/L Hex)	36.00	50.00	30.00	50.00	<50.00	<50.00	<50.00	<10.00	<10.00	<10.00
COPPER (1000.0 ug/L)	103.00	20.00	10.00	<10.00	<20.00	<20.00	<20.00			
IRON (600.0 ug/L)	22078.00	3100.00	2900.00	1100.00	1920.00	5460.00	6610.00			
LEAD (Perm = 25 ug/L)	77.00	60.00	15.00	<50.00	<50.00	<50.00	<50.00	6.3	11.00	8.00
MAGNESIUM	7231.00	2700.00	2600.00	2500.00	2200.00	2690.00	2920.00			
MANGANESE (600.0 ug/L)	746.00	270.00	230.00	90.00	70.00	200.00	260.00			
NICKEL (2000.0 ug/L)	39.00	<40.00	50.00	<40.00	<40.00	<40.00	<40.00	<40.00	<40.00	<40.00
POTASSIUM	3231.00	740.00	700.00	610.00	1200.00	1700.00	2200.00			
SODIUM	15151.00	18000.00	17000.00	17000.00	14300.00	14400.00	14500.00			
ZINC (5000.0 ug/L)	164.00	40.00	20.00	<10.00	20.00	<20.00	50.00			
ALUMINIUM (2000.0 ug/L)	11079.00	960.00	860.00	390.00	1500.00	3500.00	4900.00			
ARSENIC (50.0 ug/L)	4.20	<5.00	<5.00	<5.00	<4.00	<10.00	<10.00			
BARIUM (2000.0 ug/L)	81.00	<50.00	<50.00	<50.00	<100.00	<100.00	<100.00			
BERYLLIUM	0.90	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
CADMIUM (20.0 ug/L)	7.00	<10.00	<2.00	<10.00	<5.00	<5.00	<5.00			
COBALT	29.00	20.00	20.00	20.00	<50.00	<50.00	<50.00	<50.00	<50.00	<50.00
CYANIDE (400.0 ug/L)	35.20	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<10.00	<10.00	<10.00
VANADIUM	25.00	<50.00	<50.00	<50.00	<50.00	<50.00	<50.00	<50.00	<50.00	<50.00
pH (6.5-8.5)	ND		6.68	6.18	6.51	6.53	7.09	7.05	7.13	7.11

FIELD BLANKS

METHYLENE CHLORIDE =	<5.00	6.00
TOLUENE =	<5.00	<5.00

D-114

D-15

SPDES LABORATORY ANALYSIS
COMPARISON SHEET — MAIN PRODUCTION SUPPLY WELL
UPDATED: 03-07-88

(1) PARAMETER (6NYCRR 703.6)	12/16 C&D (14) MAIN WELL (ug/l)	12/17 C&D (15) MAIN WELL (ug/l)	12/18 C&D (16) MAIN WELL (ug/l)	1/19 C&D (20) MAIN WELL (ug/l)	1/20 C&D (24) MAIN WELL (ug/l)	1/21 C&D (28) MAIN WELL (ug/l)	2/10 C&D MAIN WELL (ug/l)	2/11 C&D MAIN WELL (ug/l)	2/12 C&D MAIN WELL (ug/l)
METHYLENE CHLORIDE	<1.00	<1.00	<1.00	<5.00	<5.00	<5.00			
1,4-DICHLOROBENZENE	<1.00	<1.00	<1.00	<10.00	<10.00	<10.00			
PHENOL (2.0 ug/L)		<10.00	<10.00	<10.00	<10.00	<10.00			
CALCIUM		9100.00	7600.00	11300.00	10800.00	10900.00			
CHROMIUM (100.0 ug/L Hex)		<20.00	310.00	<50.00	<50.00	<50.00	<10.00	<10.00	<10.00
COPPER (1000.0 ug/L)		10.00	10.00	<20.00	<20.00	<20.00			
IRON (600.0 ug/L)		90.00	<30.00	<50.00	120.00	<50.00			
LEAD (50.0 ug/L)		<10.00	<50.00	<50.00	<50.00	<50.00	<5.00	<5.00	<5.00
MAGNESIUM		2100.00	2200.00	2400.00	2320.00	2370.00			
MANGANESE (600.0 ug/L)		20.00	40.00	30.00	30.00	30.00			
NICKEL (2000.0 ug/L)		40.00	50.00	<40.00	<40.00	<40.00	<40.00	<40.00	<40.00
POTASSIUM		780.00	390.00	900.00	900.00	900.00			
SODIUM		6400.00	6400.00	7900.00	8700.00	8600.00			
ZINC (5000 ug/L)		20.00	30.00	<20.00	<20.00	<20.00			
ALUMINIUM (2000.0 ug/L)		380.00	240.00	100.00	200.00	100.00			
ARSENIC (50.0 ug/L)		<5.00	<5.00	<4.00	<10.00	<10.00			
BARIUM (2000.0 ug/L)		<50.00	<50.00	<100.00	<100.00	<100.00			
BERYLLIUM		<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
CADMIUM (20.0 ug/L)		<2.00	20.00	<5.00	<5.00	<5.00			
COBALT		10.00	10.00	<50.00	<50.00	<50.00	<50.00	<50.00	<50.00
CYANIDE (400.0 ug/L)	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<10.00	<10.00	<10.00
VANADIUM		<50.00	<50.00	<50.00	<50.00	<50.00	<50.00	<50.00	<50.00
pH (6.5 - 8.5)		7.12	7.03	7.35	6.67	7.16	7.04	6.69	7.15

FIELD BLANK-PURGABLES

METHYLENE CHLORIDE =	<5.00	<5.00
TOLUENE =	<5.00	<5.00

D-118

C&D POWER SYSTEMS

RT. 209, P.O. Box 209
Huguenot (Orange County), NY 12746
Telephone: (914) 856-4466

Gibbs & Hill, Inc.
11 Penn Plaza
New York, New York 10001
Attn: Mr. Albert Longoria

10/6/88

Dear Mr. Longoria:

Pursuant to your request for any information regarding groundwater assessment and water analysis, please find enclosed a copy of **SEPTIC LEACH FIELD INVESTIGATION REPORT** and lab analysis results obtained during January and February samplings conducted at the C & D Charter Power Systems' Huguenot Plant in conjunction with our SPDES Investigation. I wish to apologize for the delay in responding to your request, but the final draft of the ERM, SEPTIC LEACH FIELD INVESTIGATION REPORT was just received this week.

If you should require any additional information or if I can be of further assistance in your PHASE II investigation, feel free to contact me at 914-856-4466.

Sincerely Yours,

Michael M. Langan

Michael M. Langan
Environmental Engineer

Enclosures:

ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229419

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-2 Monitoring Well Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Antimony	< 4.	ug/l	4.	024401950S
Arsenic	< 4.	ug/l	4.	024503750S
Beryllium	< 5.	ug/l	5.	024701950S
Cadmium	< 5.	ug/l	5.	024901950S
Chromium	< 50.	ug/l	50.	025101950S
Copper	< 20.	ug/l	20.	025301950S
Lead	< 50.	ug/l	50.	025501950S
Mercury	< 1.	ug/l	1.	025903750S
Nickel	< 40.	ug/l	40.	026101950S
Selenium	< 4.	ug/l	4.	026403750S
Silver	< 10.	ug/l	10.	026601950S
Zinc	20.	ug/l	20.	027201950S
Thallium	< 100.	ug/l	100.	042201950S
Purgables Method # 624		attached		052034500S
Acid Extractables		attached		055225500S
Base Neutrals		attached		055343500S
Base Neutrals (cont)		attached		055400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Nelson H. Risser B.A.
Manager, GC/MS

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing

Member American Council of Independent Laboratories, Inc.

04197 15.00 135750

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

D-120

ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229419

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-2 Monitoring Well Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

Purgables Method # 624	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Chloromethane	< 10.	ug/l	10.	082700000S
Bromomethane	< 10.	ug/l	10.	082800000S
Vinyl chloride	< 10.	ug/l	10.	082900000S
Chloroethane	< 10.	ug/l	10.	083000000S
Acrolein	< 100.	ug/l	100.	082400000S
Acrylonitrile	< 100.	ug/l	100.	082500000S
Methylene chloride	< 5.	ug/l	5.	083100000S
Trichlorofluoromethane	< 5.	ug/l	5.	079000000S
1,1-Dichloroethene	< 5.	ug/l	5.	083200000S
1,1-Dichloroethane	< 5.	ug/l	5.	083300000S
trans-1,2-Dichloroethene	< 5.	ug/l	5.	083400000S
Chloroform	< 5.	ug/l	5.	083500000S
1,2-Dichloroethane	< 5.	ug/l	5.	083600000S
1,1,1-Trichloroethane	< 5.	ug/l	5.	083700000S
Carbon tetrachloride	< 5.	ug/l	5.	083800000S
Bromodichloromethane	< 5.	ug/l	5.	083900000S
1,1,2,2-Tetrachloroethane	< 5.	ug/l	5.	084900000S
1,2-Dichloropropane	< 5.	ug/l	5.	084000000S
trans-1,3-Dichloropropene	< 5.	ug/l	5.	084100000S
Trichloroethene	< 5.	ug/l	5.	084200000S
Dibromochloromethane	< 5.	ug/l	5.	084600000S
1,1,2-Trichloroethane	< 5.	ug/l	5.	084500000S
Benzene	< 5.	ug/l	5.	084300000S
cis-1,3-Dichloropropene	< 5.	ug/l	5.	084400000S
2-Chloroethylvinyl ether	< 10.	ug/l	10.	082600000S
Bromoform	< 5.	ug/l	5.	084700000S
Tetrachloroethene	< 5.	ug/l	5.	084800000S
Toluene	< 5.	ug/l	5.	085000000S
Chlorobenzene	< 5.	ug/l	5.	085100000S
Ethylbenzene	< 5.	ug/l	5.	085200000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Nelson H. Risser B.A.
Manager, GC/MS

D-121

The American Association for Laboratory Accreditation Chemical & Biological fields of testing

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229419

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-2 Monitoring Well Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

Acid Extractables	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
2-chlorophenol	< 10.	ug/l	10.	064600000S
phenol	< 10.	ug/l	10.	065500000S
2-nitrophenol	< 10.	ug/l	10.	065100000S
2,4-dimethylphenol	< 10.	ug/l	10.	064800000S
2,4-dichlorophenol	< 10.	ug/l	10.	064700000S
4-chloro-3-methylphenol	< 10.	ug/l	10.	065300000S
2,4,6-trichlorophenol	< 10.	ug/l	10.	065600000S
2,4-dinitrophenol	< 25.	ug/l	25.	065000000S
4-nitrophenol	< 25.	ug/l	25.	065200000S
2-methyl-4,6-dinitrophenol	< 25.	ug/l	25.	064900000S
pentachlorophenol	< 25.	ug/l	25.	065400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Richard S. Rodgers, B.S.
Group Leader, GC/MS

D-122

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
Member: American Council of

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229419

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-2 Monitoring Well Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

Base Neutrals	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
N-nitrosodimethylamine	< 10.	ug/l	10.	069700000S
bis (2-chloroethyl) ether	< 10.	ug/l	10.	066700000S
1,3-dichlorobenzene	< 10.	ug/l	10.	067700000S
1,4-dichlorobenzene	< 10.	ug/l	10.	067800000S
1,2-dichlorobenzene	< 10.	ug/l	10.	067600000S
bis (2-chloroisopropyl) ether	< 10.	ug/l	10.	066800000S
hexachloroethane	< 10.	ug/l	10.	069200000S
N-nitrosodi-n-propylamine	< 10.	ug/l	10.	069800000S
nitrobenzene	< 10.	ug/l	10.	069600000S
isophorone	< 10.	ug/l	10.	069400000S
bis (2-chloroethoxy) methane	< 10.	ug/l	10.	066600000S
1,2,4-trichlorobenzene	< 10.	ug/l	10.	070200000S
naphthalene	< 10.	ug/l	10.	069500000S
hexachlorobutadiene	< 10.	ug/l	10.	069000000S
hexachlorocyclopentadiene	< 10.	ug/l	10.	069100000S
2-chloronaphthalene	< 10.	ug/l	10.	067200000S
acenaphthylene	< 10.	ug/l	10.	065800000S
dimethyl phthalate	< 10.	ug/l	10.	068100000S
2,6-dinitrotoluene	< 10.	ug/l	10.	068400000S
acenaphthene	< 10.	ug/l	10.	065700000S
2,4-dinitrotoluene	< 10.	ug/l	10.	068300000S
fluorene	< 10.	ug/l	10.	068800000S
4-chlorophenyl phenyl ether	< 10.	ug/l	10.	067300000S
diethyl phthalate	< 10.	ug/l	10.	068000000S
1,2-diphenylhydrazine	< 10.	ug/l	10.	068600000S
N-nitrosodiphenylamine	< 10.	ug/l	10.	069900000S
4-bromophenyl phenyl ether	< 10.	ug/l	10.	067000000S
hexachlorobenzene	< 10.	ug/l	10.	068900000S
phenanthrene	< 10.	ug/l	10.	070000000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Richard S. Rodgers, B.S.
Group Leader, GC/MS

D-123

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
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Member, American Council of Independent Laboratories, Inc.

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ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229419

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-2 Monitoring Well Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

Base Neutrals (cont)	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
anthracene	< 10.	ug/l	10.	065900000S
di-n-butyl phthalate	< 10.	ug/l	10.	068200000S
fluoranthene	< 10.	ug/l	10.	068700000S
pyrene	< 10.	ug/l	10.	070100000S
benzidine	< 25.	ug/l	25.	066000000S
butyl benzyl phthalate	< 10.	ug/l	10.	067100000S
benzo (a) anthracene	< 10.	ug/l	10.	066100000S
chrysene	< 10.	ug/l	10.	067400000S
3,3'-dichlorobenzidine	< 25.	ug/l	25.	067900000S
bis (2-ethylhexyl) phthalate	< 10.	ug/l	10.	066900000S
di-n-octyl phthalate	< 10.	ug/l	10.	068500000S
benzo (b) fluoranthene	< 10.	ug/l	10.	066300000S
benzo (K) fluoranthene	< 10.	ug/l	10.	066500000S
benzo (a) pyrene	< 10.	ug/l	10.	066200000S
indeno (1,2,3-cd) pyrene	< 10.	ug/l	10.	069300000S
dibenzo (a,h) anthracene	< 10.	ug/l	10.	067500000S
benzo (ghi) perylene	< 10.	ug/l	10.	066400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Richard S. Rodgers, B.S.
Group Leader, GC/MS

D-124

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
Member, American Council of Independent Laboratories, Inc.

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229420

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-3 Cooling Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Antimony	5.	ug/l	4.	024401950S
Arsenic	< 4.	ug/l	4.	024503750S
Beryllium	< 5.	ug/l	5.	024701950S
Cadmium	< 5.	ug/l	5.	024901950S
Chromium	< 50.	ug/l	50.	025101950S
Copper	< 20.	ug/l	20.	025301950S
Lead	310.	ug/l	50.	025501950S
Mercury	< 1.	ug/l	1.	025903750S
Nickel	< 40.	ug/l	40.	026101950S
Selenium	< 4.	ug/l	4.	026403750S
Silver	< 10.	ug/l	10.	026601950S
Zinc	60.	ug/l	20.	027201950S
Thallium	< 100.	ug/l	100.	042201950S
Purgables Method # 624		attached		052034500S
Acid Extractables		attached		055225500S
Base Neutrals		attached		055343500S
Base Neutrals (cont)		attached		055400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

D-125 Nelson H. Risser B.A.
Manager, GC/MS

04197 15.00 135750

The American Association for Laboratory Accreditation Chemical & Biological fields of testing

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229420

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-3 Cooling Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

Purgables Method # 624	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Chloromethane	< 10.	ug/l	10.	082700000S
Bromomethane	< 10.	ug/l	10.	082800000S
Vinyl chloride	< 10.	ug/l	10.	082900000S
Chloroethane	< 10.	ug/l	10.	083000000S
Acrolein	< 100.	ug/l	100.	082400000S
Acrylonitrile	< 100.	ug/l	100.	082500000S
Methylene chloride	< 5.	ug/l	5.	083100000S
Trichlorofluoromethane	< 5.	ug/l	5.	079000000S
1,1-Dichloroethene	< 5.	ug/l	5.	083200000S
1,1-Dichloroethane	< 5.	ug/l	5.	083300000S
trans-1,2-Dichloroethene	< 5.	ug/l	5.	083400000S
Chloroform	< 5.	ug/l	5.	083500000S
1,2-Dichloroethane	< 5.	ug/l	5.	083600000S
1,1,1-Trichloroethane	< 5.	ug/l	5.	083700000S
Carbon tetrachloride	< 5.	ug/l	5.	083800000S
Bromodichloromethane	< 5.	ug/l	5.	083900000S
1,1,2,2-Tetrachloroethane	< 5.	ug/l	5.	084900000S
1,2-Dichloropropane	< 5.	ug/l	5.	084000000S
trans-1,3-Dichloropropene	< 5.	ug/l	5.	084100000S
Trichloroethene	< 5.	ug/l	5.	084200000S
Dibromochloromethane	< 5.	ug/l	5.	084600000S
1,1,2-Trichloroethane	< 5.	ug/l	5.	084500000S
Benzene	< 5.	ug/l	5.	084300000S
cis-1,3-Dichloropropene	< 5.	ug/l	5.	084400000S
2-Chloroethylvinyl ether	< 10.	ug/l	10.	082600000S
Bromoform	< 5.	ug/l	5.	084700000S
Tetrachloroethene	< 5.	ug/l	5.	084800000S
Toluene	< 5.	ug/l	5.	085000000S
Chlorobenzene	< 5.	ug/l	5.	085100000S
Ethylbenzene	< 5.	ug/l	5.	085200000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

D-126

Nelson H. Risser B.A.
Manager, GC/MS

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
AALA
Member: American Council of

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994

LLI Sample No. WW 1229420

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-3 Cooling Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

Acid Extractables	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
2-chlorophenol	< 10.	ug/l	10.	064600000S
phenol	< 10.	ug/l	10.	065500000S
2-nitrophenol	< 10.	ug/l	10.	065100000S
2,4-dimethylphenol	< 10.	ug/l	10.	064800000S
2,4-dichlorophenol	< 10.	ug/l	10.	064700000S
4-chloro-3-methylphenol	< 10.	ug/l	10.	065300000S
2,4,6-trichlorophenol	< 10.	ug/l	10.	065600000S
2,4-dinitrophenol	< 25.	ug/l	25.	065000000S
4-nitrophenol	< 25.	ug/l	25.	065200000S
2-methyl-4,6-dinitrophenol	< 25.	ug/l	25.	064900000S
pentachlorophenol	< 25.	ug/l	25.	065400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Richard S. Rodgers, B.S.
Group Leader, GC/MS

D-127

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
Member: American Council of

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229420

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-3 Cooling Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

Base Neutrals	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
N-nitrosodimethylamine	< 10.	ug/l	10.	069700000S
bis (2-chloroethyl) ether	< 10.	ug/l	10.	066700000S
1,3-dichlorobenzene	< 10.	ug/l	10.	067700000S
1,4-dichlorobenzene	< 10.	ug/l	10.	067800000S
1,2-dichlorobenzene	< 10.	ug/l	10.	067600000S
bis (2-chloroisopropyl) ether	< 10.	ug/l	10.	066800000S
hexachloroethane	< 10.	ug/l	10.	069200000S
N-nitrosodi-n-propylamine	< 10.	ug/l	10.	069800000S
nitrobenzene	< 10.	ug/l	10.	069600000S
isophorone	< 10.	ug/l	10.	069400000S
bis (2-chloroethoxy) methane	< 10.	ug/l	10.	066600000S
1,2,4-trichlorobenzene	< 10.	ug/l	10.	070200000S
naphthalene	< 10.	ug/l	10.	069500000S
hexachlorobutadiene	< 10.	ug/l	10.	069000000S
hexachlorocyclopentadiene	< 10.	ug/l	10.	069100000S
2-chloronaphthalene	< 10.	ug/l	10.	067200000S
acenaphthylene	< 10.	ug/l	10.	065800000S
dimethyl phthalate	< 10.	ug/l	10.	068100000S
2,6-dinitrotoluene	< 10.	ug/l	10.	068400000S
acenaphthene	< 10.	ug/l	10.	065700000S
2,4-dinitrotoluene	< 10.	ug/l	10.	068300000S
fluorene	< 10.	ug/l	10.	068800000S
4-chlorophenyl phenyl ether	< 10.	ug/l	10.	067300000S
diethyl phthalate	< 10.	ug/l	10.	068000000S
1,2-diphenylhydrazine	< 10.	ug/l	10.	068600000S
N-nitrosodiphenylamine	< 10.	ug/l	10.	069900000S
4-bromophenyl phenyl ether	< 10.	ug/l	10.	067000000S
hexachlorobenzene	< 10.	ug/l	10.	068900000S
phenanthrene	< 10.	ug/l	10.	070000000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

D-128

Richard S. Rodgers, B.S.
Group Leader, GC/MS

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
AALA

Member: American Council of Independent Laboratories, Inc.

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

ANALYSIS REPORT

Lancaster Laboratories

2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229420

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-19-3 Cooling Water Sample
Collected on 01/19/88

Date Reported 1/29/88
Date Submitted 1/21/88
Discard Date 2/ 6/88
Collected by C
P.O.
Rel.

Base Neutrals (cont)	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
anthracene	< 10.	ug/l	10.	065900000S
di-n-butyl phthalate	< 10.	ug/l	10.	068200000S
fluoranthene	< 10.	ug/l	10.	068700000S
pyrene	< 10.	ug/l	10.	070100000S
benzidine	< 25.	ug/l	25.	066000000S
butyl benzyl phthalate	< 10.	ug/l	10.	067100000S
benzo (a) anthracene	< 10.	ug/l	10.	066100000S
chrysene	< 10.	ug/l	10.	067400000S
3,3'-dichlorobenzidine	< 25.	ug/l	25.	067900000S
bis (2-ethylhexyl) phthalate	< 10.	ug/l	10.	066900000S
di-n-octyl phthalate	< 10.	ug/l	10.	068500000S
benzo (b) fluoranthene	< 10.	ug/l	10.	066300000S
benzo (K) fluoranthene	< 10.	ug/l	10.	066500000S
benzo (a) pyrene	< 10.	ug/l	10.	066200000S
indeno (1,2,3-cd) pyrene	< 10.	ug/l	10.	069300000S
dibenzo (a,h) anthracene	< 10.	ug/l	10.	067500000S
benzo (ghi) perylene	< 10.	ug/l	10.	066400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

D-129

Richard S. Rodgers, B.S.
Group Leader, GC/MS

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
Member, American Council of

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 717/656-2301

LLI Sample No. WW 1229865

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-20-2 #6 Monitoring Well Grab Water Sample
Collected on 01/20/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

Purgables Method # 624	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Chloromethane	< 10.	ug/l	10.	082700000S
Bromomethane	< 10.	ug/l	10.	082800000S
Vinyl chloride	< 10.	ug/l	10.	082900000S
Chloroethane	< 10.	ug/l	10.	083000000S
Acrolein	< 100.	ug/l	100.	082400000S
Acrylonitrile	< 100.	ug/l	100.	082500000S
Methylene chloride	< 5.	ug/l	5.	083100000S
Trichlorofluoromethane	< 5.	ug/l	5.	079000000S
1,1-Dichloroethene	< 5.	ug/l	5.	083200000S
1,1-Dichloroethane	< 5.	ug/l	5.	083300000S
trans-1,2-Dichloroethene	< 5.	ug/l	5.	083400000S
Chloroform	< 5.	ug/l	5.	083500000S
1,2-Dichloroethane	< 5.	ug/l	5.	083600000S
1,1,1-Trichloroethane	< 5.	ug/l	5.	083700000S
Carbon tetrachloride	< 5.	ug/l	5.	083800000S
Bromodichloromethane	< 5.	ug/l	5.	083900000S
1,1,2,2-Tetrachloroethane	< 5.	ug/l	5.	084900000S
1,2-Dichloropropane	< 5.	ug/l	5.	084000000S
trans-1,3-Dichloropropene	< 5.	ug/l	5.	084100000S
Trichloroethene	< 5.	ug/l	5.	084200000S
Dibromochloromethane	< 5.	ug/l	5.	084600000S
1,1,2-Trichloroethane	< 5.	ug/l	5.	084500000S
Benzene	< 5.	ug/l	5.	084300000S
cis-1,3-Dichloropropene	< 5.	ug/l	5.	084400000S
2-Chloroethylvinyl ether	< 10.	ug/l	10.	082600000S
Bromoform	< 5.	ug/l	5.	084700000S
Tetrachloroethene	< 5.	ug/l	5.	084800000S
Toluene	< 5.	ug/l	5.	085000000S
Chlorobenzene	< 5.	ug/l	5.	085100000S
Ethylbenzene	< 5.	ug/l	5.	085200000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Nelson H. Risser B.A.
Manager, GC/MS

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
AALA
Member: American Council of Independent Laboratories, Inc.

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

D-130

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE LANCASTER PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229865

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-20-2 #6 Monitoring Well Grab Water Sample
Collected on 01/20/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

Acid Extractables	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
2-chlorophenol	< 10.	ug/l	10.	064600000S
phenol	< 10.	ug/l	10.	065500000S
2-nitrophenol	< 10.	ug/l	10.	065100000S
2,4-dimethylphenol	< 10.	ug/l	10.	064800000S
2,4-dichlorophenol	< 10.	ug/l	10.	064700000S
4-chloro-3-methylphenol	< 10.	ug/l	10.	065300000S
2,4,6-trichlorophenol	< 10.	ug/l	10.	065600000S
2,4-dinitrophenol	< 25.	ug/l	25.	065000000S
4-nitrophenol	< 25.	ug/l	25.	065200000S
2-methyl-4,6-dinitrophenol	< 25.	ug/l	25.	064900000S
pentachlorophenol	< 25.	ug/l	25.	065400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Richard S. Rodgers, B.S.
Group Leader, GC/MS

D-131

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
AALA
Member American Council of Independent Laboratories, Inc.

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601 [illegible]

LLI Sample No. WW 1229865

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-20-2 #6 Monitoring Well Grab Water Sample
Collected on 01/20/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

Base Neutrals	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
N-nitrosodimethylamine	< 10.	ug/l	10.	069700000S
bis (2-chloroethyl) ether	< 10.	ug/l	10.	066700000S
1,3-dichlorobenzene	< 10.	ug/l	10.	067700000S
1,4-dichlorobenzene	< 10.	ug/l	10.	067800000S
1,2-dichlorobenzene	< 10.	ug/l	10.	067600000S
bis (2-chloroisopropyl) ether	< 10.	ug/l	10.	066800000S
hexachloroethane	< 10.	ug/l	10.	069200000S
N-nitrosodi-n-propylamine	< 10.	ug/l	10.	069800000S
nitrobenzene	< 10.	ug/l	10.	069600000S
isophorone	< 10.	ug/l	10.	069400000S
bis (2-chloroethoxy) methane	< 10.	ug/l	10.	066600000S
1,2,4-trichlorobenzene	< 10.	ug/l	10.	070200000S
naphthalene	< 10.	ug/l	10.	069500000S
hexachlorobutadiene	< 10.	ug/l	10.	069000000S
hexachlorocyclopentadiene	< 10.	ug/l	10.	069100000S
2-chloronaphthalene	< 10.	ug/l	10.	067200000S
acenaphthylene	< 10.	ug/l	10.	065800000S
dimethyl phthalate	< 10.	ug/l	10.	068100000S
2,6-dinitrotoluene	< 10.	ug/l	10.	068400000S
acenaphthene	< 10.	ug/l	10.	065700000S
2,4-dinitrotoluene	< 10.	ug/l	10.	068300000S
fluorene	< 10.	ug/l	10.	068800000S
4-chlorophenyl phenyl ether	< 10.	ug/l	10.	067300000S
diethyl phthalate	< 10.	ug/l	10.	068000000S
1,2-diphenylhydrazine	< 10.	ug/l	10.	068600000S
N-nitrosodiphenylamine	< 10.	ug/l	10.	069900000S
4-bromophenyl phenyl ether	< 10.	ug/l	10.	067000000S
hexachlorobenzene	< 10.	ug/l	10.	068900000S
phenanthrene	< 10.	ug/l	10.	070000000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

D-132 Richard S. Rodgers, B.S.
Group Leader, GC/MS

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing

Member: American Council of Independent Laboratories, Inc.

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 717/656-2301

LLI Sample No. WW 1229865

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-20-2 #6 Monitoring Well Grab Water Sample
Collected on 01/20/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

Base Neutrals (cont)	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
anthracene	< 10.	ug/l	10.	065900000S
di-n-butyl phthalate	< 10.	ug/l	10.	068200000S
fluoranthene	< 10.	ug/l	10.	068700000S
pyrene	< 10.	ug/l	10.	070100000S
benzidine	< 25.	ug/l	25.	066000000S
butyl benzyl phthalate	< 10.	ug/l	10.	067100000S
benzo (a) anthracene	< 10.	ug/l	10.	066100000S
chrysene	< 10.	ug/l	10.	067400000S
3,3'-dichlorobenzidine	< 25.	ug/l	25.	067900000S
bis (2-ethylhexyl) phthalate	< 10.	ug/l	10.	066900000S
di-n-octyl phthalate	< 10.	ug/l	10.	068500000S
benzo (b) fluoranthene	< 10.	ug/l	10.	066300000S
benzo (K) fluoranthene	< 10.	ug/l	10.	066500000S
benzo (a) pyrene	< 10.	ug/l	10.	066200000S
indeno (1,2,3-cd) pyrene	< 10.	ug/l	10.	069300000S
dibenzo (a,h) anthracene	< 10.	ug/l	10.	067500000S
benzo (ghi) perylene	< 10.	ug/l	10.	066400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

D-133 Richard S. Rodgers, B.S.
Group Leader, GC/MS

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
Member: American Council of Independent Laboratories, Inc.

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229865

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-20-2 #6 Monitoring Well Grab Water Sample
Collected on 01/20/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cyanide, Total	< 0.005	mg/l	0.005	023706000S
As per client request, the Cyanide analysis was performed on samples that were not preserved with NaOH to a pH > 10 as specified in the analytical method. Results reported may not be accurate.				
Aluminum	3,500.	ug/l	100.	024301950S
Antimony	< 50.	ug/l	50.	024401950S
Arsenic	< 0.01	mg/l	0.01	024503750S
Barium	< 100.	ug/l	100.	024601950S
Beryllium	< 5.	ug/l	5.	024701950S
Cadmium	< 5.	ug/l	5.	024901950S
Calcium	7,250.	ug/l	50.	025001950S
Chromium	< 50.	ug/l	50.	025101950S
Cobalt	< 50.	ug/l	50.	025201950S
Copper	< 20.	ug/l	20.	025301950S
Iron	5,460.	ug/l	50.	025401950S
Lead	< 50.	ug/l	50.	025501950S
Magnesium	2,690.	ug/l	50.	025701950S
Manganese	200.	ug/l	10.	025801950S
Mercury	< 1.	ug/l	1.	025903750S
Nickel	< 40.	ug/l	40.	026101950S
Potassium	1,700.	ug/l	500.	026201950S
Selenium	< 5.	ug/l	5.	026403750S
Silver	< 10.	ug/l	10.	026601950S
Sodium	14,400.	ug/l	500.	026701950S
Vanadium	< 50.	ug/l	50.	027101950S
Zinc	< 20.	ug/l	20.	027201950S
Thallium	< 100.	ug/l	100.	042201950S
Purgables Method # 624		attached		052034500S
Acid Extractables		attached		055225500S
Base Neutrals		attached		055343500S
Base Neutrals (cont)		attached		055400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

D-134

Nelson H. Risser B.A.
Manager, GC/MS

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
Member American Council of

04197 15.00 161250

SEE REVERSE SIDE FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS AND OUR STANDARD TERMS AND CONDITIONS

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE LANCASTER PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229869

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-21-2 #10 Monitoring Well Grab Water Sample
Collected on 01/21/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

Purgables Method # 624	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Chloromethane	< 10.	ug/l	10.	082700000S
Bromomethane	< 10.	ug/l	10.	082800000S
Vinyl chloride	< 10.	ug/l	10.	082900000S
Chloroethane	< 10.	ug/l	10.	083000000S
Acrolein	< 100.	ug/l	100.	082400000S
Acrylonitrile	< 100.	ug/l	100.	082500000S
Methylene chloride	< 5.	ug/l	5.	083100000S
Trichlorofluoromethane	< 5.	ug/l	5.	079000000S
1,1-Dichloroethene	< 5.	ug/l	5.	083200000S
1,1-Dichloroethane	< 5.	ug/l	5.	083300000S
trans-1,2-Dichloroethene	< 5.	ug/l	5.	083400000S
Chloroform	< 5.	ug/l	5.	083500000S
1,2-Dichloroethane	< 5.	ug/l	5.	083600000S
1,1,1-Trichloroethane	< 5.	ug/l	5.	083700000S
Carbon tetrachloride	< 5.	ug/l	5.	083800000S
Bromodichloromethane	< 5.	ug/l	5.	083900000S
1,1,2,2-Tetrachloroethane	< 5.	ug/l	5.	084900000S
1,2-Dichloropropane	< 5.	ug/l	5.	084000000S
trans-1,3-Dichloropropene	< 5.	ug/l	5.	084100000S
Trichloroethene	< 5.	ug/l	5.	084200000S
Dibromochloromethane	< 5.	ug/l	5.	084600000S
1,1,2-Trichloroethane	< 5.	ug/l	5.	084500000S
Benzene	< 5.	ug/l	5.	084300000S
cis-1,3-Dichloropropene	< 5.	ug/l	5.	084400000S
2-Chloroethylvinyl ether	< 10.	ug/l	10.	082600000S
Bromoform	< 5.	ug/l	5.	084700000S
Tetrachloroethene	< 5.	ug/l	5.	084800000S
Toluene	< 5.	ug/l	5.	085000000S
Chlorobenzene	< 5.	ug/l	5.	085100000S
Ethylbenzene	< 5.	ug/l	5.	085200000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

D-135

Nelson H. Risser B.A.
Manager, GC/MS

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Chemical & Biological fields of testing
Member: American Council of Independent Laboratories, Inc.

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Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229869

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-21-2 #10 Monitoring Well Grab Water Sample
Collected on 01/21/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

Base Neutrals	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
N-nitrosodimethylamine	< 10.	ug/l	10.	069700000S
bis (2-chloroethyl) ether	< 10.	ug/l	10.	066700000S
1,3-dichlorobenzene	< 10.	ug/l	10.	067700000S
1,4-dichlorobenzene	< 10.	ug/l	10.	067800000S
1,2-dichlorobenzene	< 10.	ug/l	10.	067600000S
bis (2-chloroisopropyl) ether	< 10.	ug/l	10.	066800000S
hexachloroethane	< 10.	ug/l	10.	069200000S
N-nitrosodi-n-propylamine	< 10.	ug/l	10.	069800000S
nitrobenzene	< 10.	ug/l	10.	069600000S
isophorone	< 10.	ug/l	10.	069400000S
bis (2-chloroethoxy) methane	< 10.	ug/l	10.	066600000S
1,2,4-trichlorobenzene	< 10.	ug/l	10.	070200000S
naphthalene	< 10.	ug/l	10.	069500000S
hexachlorobutadiene	< 10.	ug/l	10.	069000000S
hexachlorocyclopentadiene	< 10.	ug/l	10.	069100000S
2-chloronaphthalene	< 10.	ug/l	10.	067200000S
acenaphthylene	< 10.	ug/l	10.	065800000S
dimethyl phthalate	< 10.	ug/l	10.	068100000S
2,6-dinitrotoluene	< 10.	ug/l	10.	068400000S
acenaphthene	< 10.	ug/l	10.	065700000S
2,4-dinitrotoluene	< 10.	ug/l	10.	068300000S
fluorene	< 10.	ug/l	10.	068800000S
4-chlorophenyl phenyl ether	< 10.	ug/l	10.	067300000S
diethyl phthalate	< 10.	ug/l	10.	068000000S
1,2-diphenylhydrazine	< 10.	ug/l	10.	068600000S
N-nitrosodiphenylamine	< 10.	ug/l	10.	069900000S
4-bromophenyl phenyl ether	< 10.	ug/l	10.	067000000S
hexachlorobenzene	< 10.	ug/l	10.	068900000S
phenanthrene	< 10.	ug/l	10.	070000000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

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Richard S. Rodgers, B.S.
Group Leader, GC/MS

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Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE LANCASTER PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229869

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-21-2 #10 Monitoring Well Grab Water Sample
Collected on 01/21/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

Base Neutrals (cont)	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
anthracene	< 10.	ug/l	10.	065900000S
di-n-butyl phthalate	< 10.	ug/l	10.	068200000S
fluoranthene	< 10.	ug/l	10.	068700000S
pyrene	< 10.	ug/l	10.	070100000S
benzidine	< 25.	ug/l	25.	066000000S
butyl benzyl phthalate	< 10.	ug/l	10.	067100000S
benzo (a) anthracene	< 10.	ug/l	10.	066100000S
chrysene	< 10.	ug/l	10.	067400000S
3,3'-dichlorobenzidine	< 25.	ug/l	25.	067900000S
bis (2-ethylhexyl) phthalate	< 10.	ug/l	10.	066900000S
di-n-octyl phthalate	< 10.	ug/l	10.	068500000S
benzo (b) fluoranthene	< 10.	ug/l	10.	066300000S
benzo (K) fluoranthene	< 10.	ug/l	10.	066500000S
benzo (a) pyrene	< 10.	ug/l	10.	066200000S
indeno (1,2,3-cd) pyrene	< 10.	ug/l	10.	069300000S
dibenzo (a,h) anthracene	< 10.	ug/l	10.	067500000S
benzo (ghi) perylene	< 10.	ug/l	10.	066400000S

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Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

D-137 Richard S. Rodgers, B.S.
Group Leader, GC/MS

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ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA. 17601-5994

LLI Sample No. WW 1229869

C & D Power Systems-New York
Rt. 209
P. O. Box 209
Huguenot, NY 12746
88-01-21-2 #10 Monitoring Well Grab Water Sample
Collected on 01/21/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

Acid Extractables	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
2-chlorophenol	< 10.	ug/l	10.	064600000S
phenol	< 10.	ug/l	10.	065500000S
2-nitrophenol	< 10.	ug/l	10.	065100000S
2,4-dimethylphenol	< 10.	ug/l	10.	064800000S
2,4-dichlorophenol	< 10.	ug/l	10.	064700000S
4-chloro-3-methylphenol	< 10.	ug/l	10.	065300000S
2,4,6-trichlorophenol	< 10.	ug/l	10.	065600000S
2,4-dinitrophenol	< 25.	ug/l	25.	065000000S
4-nitrophenol	< 25.	ug/l	25.	065200000S
2-methyl-4,6-dinitrophenol	< 25.	ug/l	25.	064900000S
pentachlorophenol	< 25.	ug/l	25.	065400000S

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Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Richard S. Rodgers, B.S.
Group Leader, GC/MS

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ANALYSIS REPORT

Lancaster Laboratories INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601-5994 (717) 656-2301

LLI Sample No. WW 1229869

C & D Power Systems-New York
Rt. 209
P. O. Box 209
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88-01-21-2 #10 Monitoring Well Grab Water Sample
Collected on 01/21/88 by ML

Date Reported 2/ 4/88
Date Submitted 1/22/88
Discard Date 2/12/88
Collected by ML
P.O. 88-01-21
Rel.

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cyanide, Total	< 0.005	mg/l	0.005	023706000S
As per client request, the Cyanide analysis was performed on samples that were not preserved with NaOH to a pH > 10 as specified in the analytical method. Results reported may not be accurate.				
Aluminum	4,900.	ug/l	100.	024301950S
Antimony	< 50.	ug/l	50.	024401950S
Arsenic	< 10.	ug/l	10.	024503750S
Barium	< 100.	ug/l	100.	024601950S
Beryllium	< 5.	ug/l	5.	024701950S
Cadmium	< 5.	ug/l	5.	024901950S
Calcium	7,380.	ug/l	50.	025001950S
Chromium	< 50.	ug/l	50.	025101950S
Cobalt	< 50.	ug/l	50.	025201950S
Copper	< 20.	ug/l	20.	025301950S
Iron	6,610.	ug/l	50.	025401950S
Lead	< 50.	ug/l	50.	025501950S
Magnesium	2,920.	ug/l	50.	025701950S
Manganese	260.	ug/l	10.	025801950S
Mercury	< 1.	ug/l	1.	025903750S
Nickel	< 40.	ug/l	40.	026101950S
Potassium	2,200.	ug/l	500.	026201950S
Selenium	< 5.	ug/l	5.	026403750S
Silver	< 10.	ug/l	10.	026601950S
Sodium	14,500.	ug/l	500.	026701950S
Vanadium	< 50.	ug/l	50.	027101950S
Zinc	50.	ug/l	20.	027201950S
Thallium	< 100.	ug/l	100.	042201950S
Purgables Method # 624		attached		052034500S
Acid Extractables		attached		055225500S
Base Neutrals		attached		055343500S
Base Neutrals (cont)		attached		055400000S

1 COPY TO C & D Power Systems ATTN: Mike Langan

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Nelson H. Risser B.A.
Manager, GC/MS

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04197 15.00 161250

D-139

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D.17

RESULTS AND RECOMMENDATIONS
SEPTIC LEACH FIELD INVESTIGATION
C & D CHARTER POWER SYSTEMS
HUGUENOT, NEW YORK

SEPTEMBER, 1988

PREPARED FOR:

C & D CHARTER POWER SYSTEMS
HUGUENOT, NEW YORK

PREPARED BY:

ERM-NORTHEAST, INC.
88 SUNNYSIDE BOULEVARD
PLAINVIEW, NEW YORK 11803

D-40

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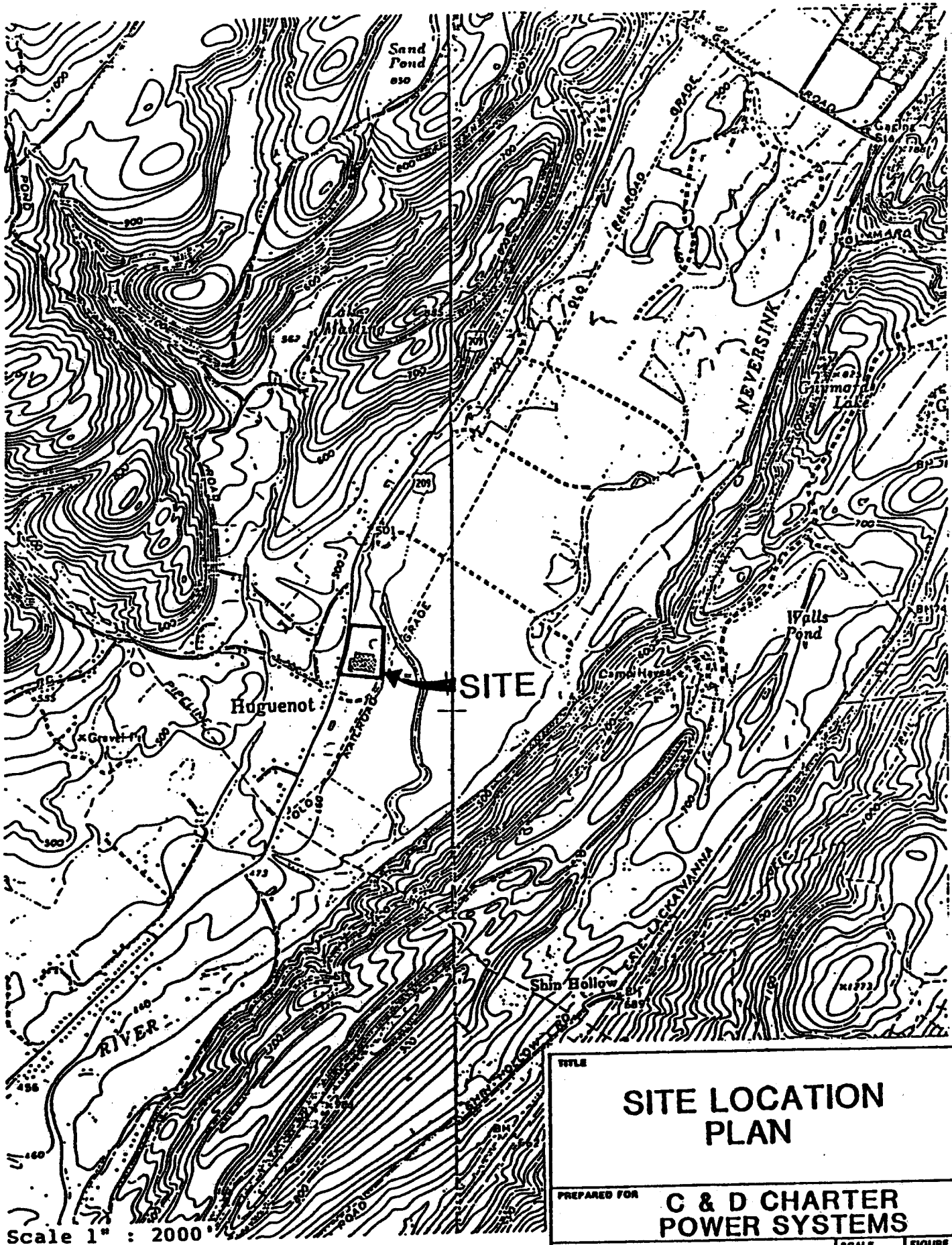
1.0 INTRODUCTION

1.1 Facility Description

C & D Charter Power Systems, Inc. presently operates a battery manufacturing facility along Route 209 in Huguenot, New York (Figure 1-1). As part of their manufacturing process, the facility discharges its non-contact effluent into an on-site septic system with a leach field. This discharge is conducted under SPDES Permit No. NY-0096938, and the effluent is sampled and reported to the state on a regular basis.

1.2 Objectives

ERM was retained in 1988 by C & D Charter Power Systems in response to requests set forth by NYSDEC in a letter dated 10 November 1987. This letter summarized analytical results recently obtained by NYSDEC as part of their routine SPDES permit compliance sampling. The samples collected by the NYSDEC are as follows: 1) septic tank effluent, 2) ground water from a monitoring well near the septic's leach field, and 3) non-contact cooling water.



TITLE

SITE LOCATION PLAN

PREPARED FOR

C & D CHARTER POWER SYSTEMS

ERM-Northeast
Environmental Resource Management

SCALE noted
DATE

FIGURE 1-1

D-143

The analytical results obtained by the NYSDEC indicated elevated concentrations ("violation of water quality standard" and "not authorized for discharge") of several chlorinated hydrocarbons and metals (mainly iron and lead). As a consequence of their sampling results, NYSDEC requested that C & D Charter Power Systems conduct a supplemental hydrogeologic investigation in the area around the septic system leach field.

A work plan outlining a proposed hydrogeologic investigation was submitted to the NYSDEC in April, 1988. The NYSDEC requested some minor modifications to the work plan in a letter dated May 3, 1988. These comments were incorporated into revised work plan ("Septic Leach Field Investigation") which was submitted to the NYSDEC in May. On June 1, 1988 the NYSDEC approved the revised work plan. The NYSDEC-approved investigation was implemented during the summer of 1988 by ERM-Northeast, where the specific objectives were three-fold:

1. Redevelopment of the existing monitoring well (MW-11) adjacent to the septic's leach field. It is not known if the NYSDEC sampling results are representative of the actual ground-water chemistry because of the uncertainty concerning the installation and development procedures used during well construction;

2. Characterize ground-water quality laterally at positions upgradient and downgradient from the leach field. One upgradient well (MW-1) and one additional downgradient well (MW-13) were installed to achieve this objective.

3. Characterize ground-water quality beneath the septic field at a greater depth within the same aquifer (MW-12). This will determine if any contaminants have migrated vertically downward within the aquifer.

2.0 SUBSURFACE INVESTIGATION

2.1 Site Hydrogeology

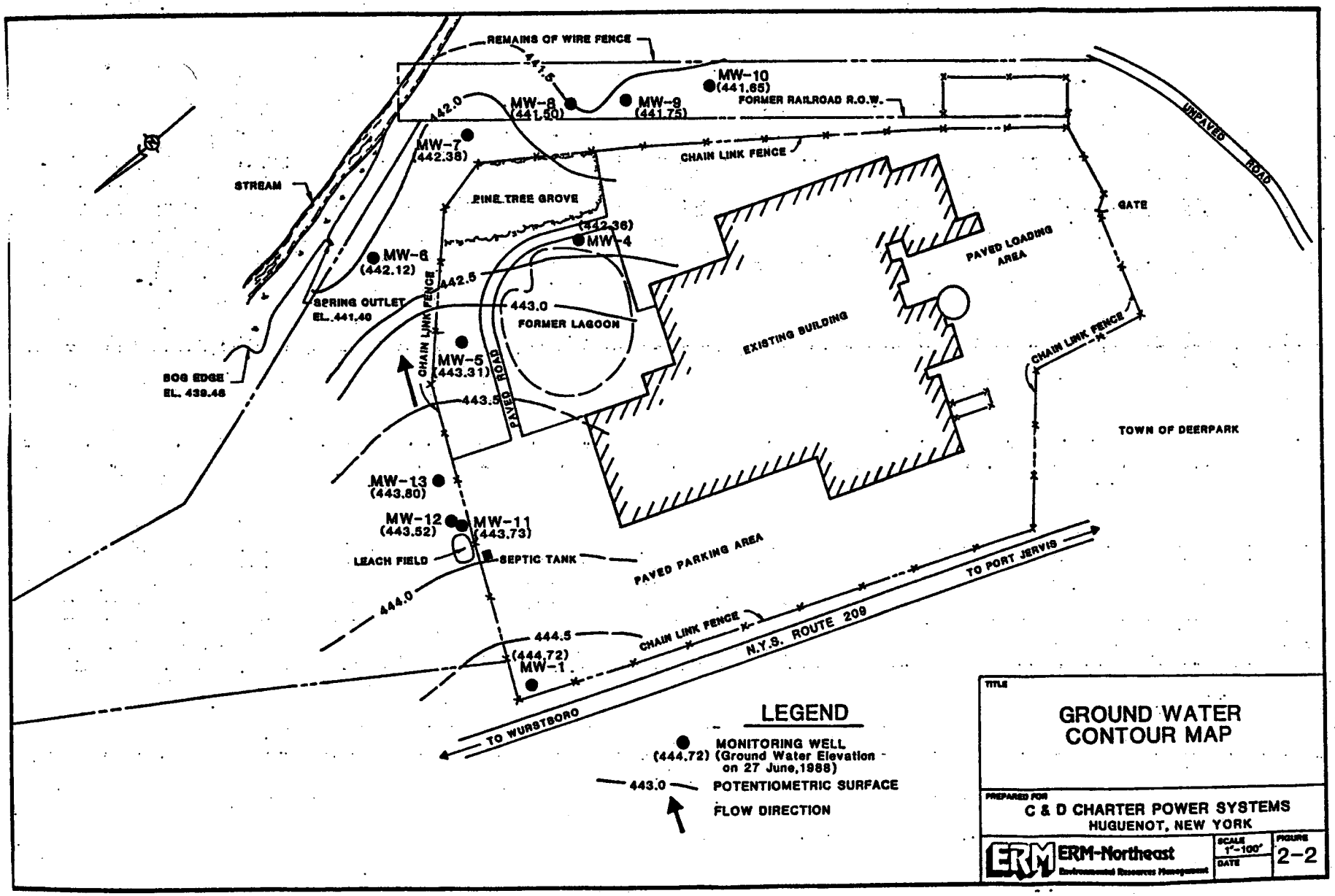
The Huguenot facility is located in the Neversink River Valley, about four miles northeast of the city of Port Jervis and the confluence of the Neversink and Delaware Rivers. As shown on the topographic map (see Figure 1-1), the plant is situated on a river terrace approximately 35 feet above the Neversink River. The ground surface on the terrace is nearly flat, while the slopes extending down to the valley floor (on the east and northeast) are quite steep. Incised in the valley floor at the base of this slope is a small tributary of the Neversink River.

Previous drilling at the Huguenot facility revealed that the soils underlying the site are predominantly sands and cobbles, with the cobbles becoming more abundant with depth. These sediments were deposited as glacial outwash during the last glacial retreat. According to Frimpter (1972), deposition in the Neversink Valley occurred when the ice front stagnated near the present location of Summitville, New York. Large, swift-flowing streams carrying coarse glacial sediment deposited up to 150 feet of material in this portion of the Neversink Valley and farther south into the Delaware River Valley. During post-glacial time,

the Neversink River has meandered back and forth across the valley floor eroding the older glacial deposits and forming the modern floodplain. Remnants of the older glacial deposits remain along the sides of the valley as flat-topped benches or terraces, elevated above the present Neversink floodplain.

The unconfined valley-fill aquifer underlying the Neversink River is the major regional aquifer. It extends roughly 28 miles from Summitville, New York south-southwestward to Milford, Pennsylvania. The aquifer's width is about one mile. The storage capacity of the aquifer has been estimated to be approximately 84.4 billion gallons of water (Frimpter, 1972). Recharge to the aquifer is derived from infiltration of surface water, principally seepage from the Neversink River and its tributaries. Consequently, the regional flow direction of this unconfined aquifer is also to the south-southwest.

The flow condition of the water-table aquifer at the time of sampling was reconstructed from water-level measurements collected in all eleven monitoring wells (Figure 2-1). The reconstructed <u>local</u> configuration of the aquifer beneath the Huguenot facility is shown on Figure 2-2, while the water-level measurements used for this contouring are summarized in Table 2-1. Ground-water flow within the aquifer is approximately


REMAINS OF WIRE FENCE
MW-10
(441.65)
FORMER RAILROAD R.O.W.
MW-8
(441.50)
MW-9
(441.75)
442.0
MW-7
(442.38)
CHAIN LINK FENCE
UNPAVED ROAD
STREAM
PINE TREE GROVE
GATE
(442.36)
MW-4
MW-6
(442.12)
PAVED LOADING AREA
442.5
SPRING OUTLET
EL. 441.40
443.0
FORMER LAGOON
EXISTING BUILDING
CHAIN LINK FENCE
MW-5
(443.31)
PAVED ROAD
BOG EDGE
EL. 439.46
443.5
TOWN OF DEERPARK
MW-13
(443.80)
MW-12
(443.52)
MW-11
(443.73)
LEACH FIELD
SEPTIC TANK
PAVED PARKING AREA
TO PORT JERVIS
444.0
CHAIN LINK FENCE
N.Y.S. ROUTE 209
444.5
(444.72)
MW-1
TO WURTSBORO
LEGEND
MONITORING WELL
(444.72) (Ground Water Elevation on 27 June,1988)
443.0 POTENTIOMETRIC SURFACE
FLOW DIRECTION
TITLE
GROUND WATER CONTOUR MAP
PREPARED FOR
C & D CHARTER POWER SYSTEMS
HUGUENOT, NEW YORK
ERM-Northeast
Environmental Resources Management
SCALE 1"=100'
DATE
FIGURE 2-2

D-148

TABLE 2-1
MONITORING WELL & WATER LEVEL DATA
C & D CHARTER POWER SYSTEMS
HUGUENOT, NEW YORK

MONITORING WELL	TOTAL DEPTH OF WELL	SCREENED INTERVAL	ELEVATION OF GROUND SURFACE	TOP OF RISER ELEVATION	26 JUNE 1988 DEPTH TO WATER	26 JUNE 1988 WATER LEVEL ELEVATION
MW-1	32'	22-32'	472.46	472.27	27.55	444.72
MW-4	40'	30-40'	472.75	472.36	30.00	442.36
MW-5	45'	31-41'	470.23	473.00	29.69	443.31
MW-6	43'	33-43'	470.77	472.37	30.25	442.12
MW-7	29'	19-29'	460.65	461.18	18.80	442.38
MW-8	33'	23-33'	461.35	463.40	21.90	441.50
MW-9	33'	23-33'	462.15	464.70	22.95	441.75
MW-10	35'	25-35'	462.21	464.75	23.10	441.65
MW-11	34'	DNA	471.42	473.71	29.94	443.77
MW-12	50'	45-50'	471.30	473.95	30.43	443.52
MW-13	37'	27-37'	470.00	472.86	29.06	443.80

NOTES: 1) Elevation is mean sea level in feet, using National Geodetic Datum of 1929.
2) Depth to water refers to feet below top of inner casing.
3) DNA - data not available.

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southeast (S40°E) at a gradient of 0.004 ft/ft. Discharge of ground water occurs approximately 700 feet southeast of Route 209 to the small tributary of the Neversink River.

2.2 Well Installation Procedures

Four monitoring wells, three shallow (MW-1, MW-11 and MW-13) and one intermediate (MW-12), were used to establish the ground-water quality of the aquifer beneath the septic's leach field at the Huguenot facility. Six other monitoring wells (MW-4 through MW-10) presently exist from previous hydrogeological investigations and were used for ground-water contouring. Two of the wells (MW-1 and MW-4) used in the septic leach field investigation had to be reinstalled during the field program because the older wells were damaged. The location of the all existing monitoring wells at the facility are shown on Figure 2-1. Design specifications of both shallow and intermediate wells are discussed below.

The monitoring wells were installed by drilling with hollow-stem augers until refusal (at approximately 20 feet because of boulders), at which time mud rotary was used to advance the remainder of the boring. Split-spoon samples were collected at five-foot intervals for the purpose of soil classification. In

the shallow wells, the top of the screen was positioned approximately two feet above the top of the water table (see Table 2-1). The intermediate depth well, MW-12, was installed adjacent to the septic's leach field and was screened in the same unconsolidated aquifer but at a greater depth. The installation reports for the two new wells are provided in Appendix A.

A ten-foot section of slotted stainless steel (4-inch I.D.) well screen was installed for each shallow well, while a five-foot section of screen was used for the deeper well (MW-12). All screens were connected to the surface with a riser casing of flush joint (threaded), 4-inch stainless-steel pipe. A gravel pack was extended to approximately 2 feet above the screen, where a two-foot thick bentonite seal was emplaced. The remaining annular space was filled with a cement/bentonite grout. Steel protective casings (with locking covers) were set over the monitoring well risers and secured into the ground with concrete. During the well-installation operations, all drilling materials that were used within the borehole were cleaned with a steam jenny before their use at the next monitoring well.

To complete the installation of the monitoring wells, each well was developed with air for approximately one hour. The

existing monitoring well located adjacent to the septic field (MW-11) was also developed. Development was necessary to ensure that a good hydraulic connection was established between the well and the aquifer.

All of the on-site monitoring wells (i.e., the new wells and the existing wells) were surveyed for elevation by tying-in with an off-site datum (National Geodetic Datum of 1929). Depths to ground water was synoptically measured in all new and existing wells on the same day of sampling (June 27, 1988) and were converted into ground-water elevations so that a ground-water contour map could be constructed for the parcel. The elevations calculated by the surveyor are provided in Appendix B, while the ground-water depths and elevations are presented in Table 2-1.

2.3 Sampling Methodologies

Ground-water samples were collected from the three shallow wells (MW-1, MW-11, and MW-13; and the one deeper well (MW-12) to determine if contaminants were emanating from the septic's leach field. Samples from these wells were analyzed for volatile organics (USEPA Method 624), total phenols, pH, iron, and priority-pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver,

thallium, and zinc). Sampling (June 27, 1988) was conducted two weeks after the development of the wells (June 13, 1988) so as to allow time for the aquifer to reestablish its natural flow state. Dedicated Teflon bailers with disposable polypropylene suspension cords were used to sample the monitoring wells. Three volumes of well water were purged from each well (with dedicated 3' X 3.5" PVC bailers) prior to sampling.

A quality assurance program was developed to ensure that the precision and accuracy of the ground-water sample analyses was not impacted by sampling, sample handling, and equipment decontamination procedures. This program was based on the collection of field-blank samples for laboratory analysis and the maintenance of a travel (trip) blank. Included in the program was the collection of a duplicate sample chosen from one of the monitoring wells sampled. All of the ground-water samples collected at the Huguenot facility were analyzed by EnviroTest Laboratories, Inc. of Newburgh, New York in accordance with CLP protocols.

3.0 DISCUSSION OF RESULTS

Results from the chemical analyses of ground water samples are summarized in Table 3-1, while the actual Laboratory Analytical Report is presented in Appendix C. These analytical results are summarized and discussed below. Incorporated in the discussion is a comparison between the compounds and concentrations found at the site and the guideline levels presented in the New York State Department of Environmental Conservation's publication: " Ambient Water Quality Standards and Guidance Values."

Only a single organic compound (2-hexanone) was detected in the samples of ground water; however, the compound is probably a sampling artifact. Concentrations of 2-hexanone were only detected in the sample from the upgradient well (MW-1, 12 ppb), and the field blank (5.3 ppb). These concentrations are very low and border the analytical detection limit (generally 10 ppb).

Five metals (chromium, copper, iron, lead, and zinc) were detected in the ground water. Copper (at 48 ppb) and lead (at 6.2 ppb) were only detected in the upgradient well (MW-1). Chromium was detected in the intermediate well (MW-12, 13 ppb) and the downgradient well (MW-13, 14 ppb) at concentrations only

TABLE 3-1
GROUND-WATER ANALYTICAL RESULTS
C & D CHARTER POWER SYSTEMS
HUGUENOT, NEW YORK

SAMPLE NUMBER	NYSDEC GUIDELINES*	MW-1	MW-11	MW-12	MW-12 DUP	MW-13	FB	TB
DATE COLLECTED		6/27/88	6/27/88	6/27/88	6/27/88	6/27/88	6/27/88	6/27/88
pH	6.5-8.5	6.9	6.9	7.5	---	6.4	---	---
INORGANIC ANALYSIS in ppb (P.P. Metals, Iron & Phenols)								
Chromium (Cr)	50	10u	10u	13	11	14	10u	NA
Copper (Cu)	1000	48	25U	25U	25U	25U	25U	NA
Iron (Fe)	300	1817	138	1054	1306	2067	100U	NA
Lead (Pb)	25	6.2	5U	5U	5U	5U	5U	NA
Zinc (Zn)	5000	185	35	359	378	75	20U	NA
VOLATILES ORGANIC ANALYSIS in ppb (35 Compounds)								
2-Hexanone	50	12B	10U	10U	10U	10U	5.3J	10U

NOTES: U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value, the compound meets the identification criteria but the result is < than the specified detection limit but > than zero.
B - The analyte is found in the blank as well as the sample.
NA - Indicates that the compound was not analyzed for.
* - Data taken from NYSDEC "Ambient Water Quality Standards and Guidance Values."

marginally above the analytical detection limit (10 ppb). The remaining two metals (iron and zinc) were detected in ground-water samples from all of the monitoring wells. The concentrations detected were generally consistent with the background concentrations detected in the upgradient well (MW-1: 1817 ppb of iron, 185 ppb of zinc).

Iron was the only compound detected above the NYSDEC water quality guidelines (300 ppb) in ground water beneath the Huguenot facility. The background concentration of iron (MW-1) was 1817 ppb, while ground water beneath (MW-12) and downgradient (MW-13) of the leach field had concentrations of 1306 ppb and 2067 ppb respectively. Interestingly, only ground water from the monitoring well immediately adjacent to the leach field (MW-11) had a concentration of iron below the NYSDEC guidelines--probably due to localized dilution of ground water by the water discharged into the Huguenot facility's septic system.

4.0 RECOMMENDATIONS

Based on the data obtained to date, no remedial action or additional hydrogeologic assessment is presently necessary at the Huguenot facility's septic leach field. However, three recommendations are set forth concerning future procedures for SPDES-permit sampling of monitoring well MW-11, and appropriate actions to undertake if future analytical results exceed NYSDEC water quality guidelines or background concentrations.

1) Monitoring well MW-11 should be purged of three volumes of well water prior to every SPDES sampling event. Samples of ground water should be collected with a laboratory-decontaminated bailer and polypropylene cord. Prior to each sampling event, the bailer should be shipped to the laboratory for decontamination (and subsequently wrapped in aluminum foil) and a new section of cord attached.

2) There is no present need to alter the current schedule of SPDES sampling of the monitoring well. If ground-water contaminants are detected in future samples, then the deeper (MW-12) and downgradient wells (MW-13)

should be sampled during the subsequent round of sampling.

3) A field blank should be collected at the time of sampling because the volatile organic compounds detected in the past (i.e., methylene chloride) are common laboratory/sampling artifacts. Collection of a field blank would enable C & D Charter Power Systems to determine if any positive analytical results in the future are such artifacts.

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Ground-Water Resources of Orange and Ulster Counties, New York

By MICHAEL H. FRIMPTER

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1985

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estimated 48 mgd which could be induced to infiltrate from the Neversink River is also dependent on the flow available for infiltration. The flow of the Neversink River at Godeffroy occasionally drops below 48 mgd, but only for very short periods of time. As an example, in 1964 when precipitation in the drainage area was about 20 percent below normal, the flow at Godeffroy was below 48 mgd for only 10 days in the period October 1, 1963, to October 1, 1964 (U.S. Geological Survey, 1970, p. 619). From October 1, 1964, to September 30, 1965, the flow at Godeffroy was less than 48 mgd for about 40 days but was never lower than 20 mgd (U.S. Geological Survey, 1970, p. 619). The low flows of this stream are largely controlled by the Neversink Reservoir. Releases from this reservoir are at the discretion of New York City except for conservation releases. Most likely, the export of ground water from this basin would not be allowable because it would reduce the natural ground-water discharge to the Delaware River system by the amount of water exported.

Base flow of Basher Kill near Cuddebackville indicates a ground-water discharge of over 13 mgd for the valley northeast of Cuddebackville. This represents a salvable discharge of about 1.4 mgd per linear mile of valley for that part of the aquifer drained by Basher Kill.

Because withdrawal of water at the 13 mgd rate would dry up Basher Kill at Cuddebackville about 10 percent of the time, the stream cannot be considered as an additional source of recharge through infiltration to the aquifer. Withdrawing 13 mgd from the aquifer would also reduce Basher Kill's contribution to the Neversink River by about 13 mgd. This reduction of streamflow would reduce the quantity of water available in the Neversink River to recharge the aquifer between Godeffroy and Port Jervis. However, if the water withdrawn from the aquifer in the Basher Kill valley were returned to Basher Kill as waste or used water, there would be no appreciable loss from the system and the quantity of water available for infiltration in the Neversink River would not be significantly reduced. The interrelations between surface water and ground water must be fully understood if the water resources of these two valleys are to be developed to their full potential.

An alternative and more accurate method of estimating potential yield of an aquifer is to estimate the quantity of water available in storage between periods of complete recharge. A large part of the spring runoff in the Basher Kill valley is water which might have become ground water if the aquifer had not been completely saturated. If, however, ground water is withdrawn for use during periods of little recharge, additional storage space for spring recharge would be created. Water that is normally rejected as recharge would then be accepted as recharge and be available as usable ground water. No permanent loss in storage would result because the aquifer would be

recharged each spring, just as the storage of a surface-water reservoir is replenished during spring runoff.

To analyze this aquifer for potential yield from storage, several simple and logical assumptions were made: the transmissibility of the aquifer averages about 50,000 gallons per day per foot, the storage coefficient is 0.2, the valley walls are impermeable, and the aquifer is completed recharged during the spring. Because the aquifer averages about 100 feet thick, an available drawdown of 50 feet was assumed. By constructing distance drawdown graphs for the stated conditions, by summing the drawdown produced by hypothetical pumping wells, and by summing the drawdown caused by the impermeable valley walls, a maximum possible pumping rate can be found. In this analysis, a pumping rate of about 400 gpm for wells 1,000 feet apart was found to produce a drawdown of 50 feet at the pumping wells after 360 days. This amounts to about 2.8 mgd per 5,000 foot length of valley—a total of 39 mgd for the aquifer between Godeffroy and Summitville, and 22 mgd for the aquifer between Godeffroy and Port Jervis.

The estimates of recharge that would occur if water were drawn from storage are larger and believed to be more accurate than the estimates of recharge determined from measurements of natural ground-water discharge. Therefore, the estimates of potential yield of the aquifer are based on these larger recharge estimates. The aquifer between Godeffroy and Port Jervis has a potential yield of 70 mgd—22 mgd from storage and 48 mgd from stream infiltration. The aquifer between Godeffroy and Summitville has a potential yield of 39 mgd from storage. As mentioned previously, the streamflow may not be considered an infiltration source in this section of the aquifer because streamflow here is derived from ground-water discharge.

In (1968) only a few wells tapped this aquifer and it was virtually undeveloped. As more industry and housing enters the area, the aquifers undoubtedly will be developed to a much greater extent. Planned recharge using infiltration pits or even recharge ditches that could be scarified between recharge seasons could be made to easily double the recharge to this aquifer. A discussion of artificial recharge and numerous references ae included in Parker, Cohen, and Foxworthy (1967).

SANDBURG CREEK VALLEY

Between Phillipsport in Sullivan County and Wawarsing in Ulster County, the valleys of Homowack Kill, Sandburg Creek, and a small part of Rondout Creek contain an important sand and gravel aquifer (aquifer G, pl. 3). The Summitville moraine forms the southern end of this aquifer and is part of the drainage divide between the Delaware River drainage basin and the Hudson River drainage basin.

LOWER NEVERSINK RIVER VALLEY AND BASHER KILL VALLEY

A sand and gravel aquifer in the valleys of the Neversink River and Basher Kill extends from Summitville in Sullivan County (Soren, 1961, p. 22) to Port Jervis in the southwestern corner of Orange County (fig. 16; aquifer L, pl. 3). Parker and others (1964, p. 92) describe this aquifer as being 28 miles long extending from Summitville to Milford, Pa., averaging 1 mile wide and storing about 11.3 billion cubic feet of water or about 84.4 billion gallons. The sand and gravel generally grades downvalley from coarser material at Summitville to finer material at Port Jervis and from coarser material on the bottom to fine material on the top. A thin layer of fine sandy and silty soil overlies some of the surface of the aquifer, mostly in the low, flat areas as shown on plate 2. The fine sand is more than 50 feet thick at Port Jervis, north of the confluence of the Neversink and Delaware Rivers. The thickness of the aquifer ranges from less than 10 feet to a little more than 150 feet but is variable because of the irregular surface of the underlying bedrock. An example of this irregularity is an islandlike hill of shale and siltstone protruding from the glacial-outwash sediments 1 to 2 miles northeast of Port Jervis. Section *A–A′*, plate 4, is a geologic cross section of the unconsolidated deposits showing the depth to bedrock in the Neversink Valley at Godeffroy.

The aquifer in New York State is 21 miles long, has an average width of about half a mile, and has an average saturated thickness of 100 feet, so the volume is roughly 29 billion cubic feet. "The storage coefficient S, of an aquifer is defined as the volume of water it releases from or takes into storage per unit surface area of the aquifer per

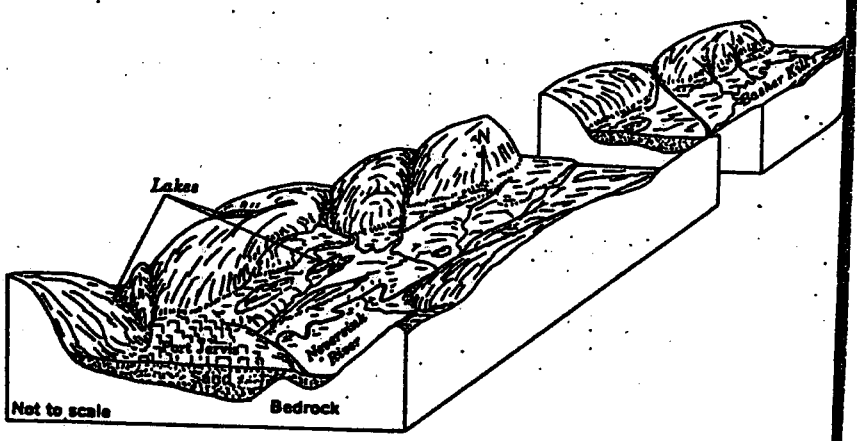

FIGURE 16.—Surface and subsurface structure of Neversink valley near Port Jervis.

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unit change in the component of head normal to that surface." (Ferris and others 1962, p. 74). The storage coefficient for sand and gravel deposits generally is about 0.2. If this aquifer could be completely drained, it would yield about 0.2×29 billion cubic feet or about 44 billion gallons of water. Probably less than half of this amount could be withdrawn under the present economic and technological conditions.

The largest source of recharge in the Neversink valley is the Neversink River. The following paragraphs discuss the possible rate of recharge along a 5,000-foot reach where the Neversink River is 30 feet wide.

The flow of water through porous material is described by Darcy's Law, which may be expressed by the formula

$$Q=PIA,$$

where

Q=the quantity of water, in gallons per day,
P=the permeability of the aquifer, in gallons per day per square foot,
I=the hydraulic gradient, in feet per foot, and
A=the cross-sectional area through which the water is moving, in square feet.

Along this stream then

A=30 ft×5,000 ft=150,000 square feet, and
I=1 (max).

Because there are no deposits of very low permeability between this stream and the aquifer and because the streambed area through which the water must infiltrate is relatively small, the permeability of the streambed rather than the permeability of the aquifer determines the rate of infiltration. Assuming that the streambed has a permeability similar to that of very fine sand—about 40 gallons per day per square foot and substituting in $Q=PIA$, then

Q=40×1×150,000
Q=6,000,000 gpd (gallons per day) per 5,000 feet of stream which is more than 4,000 gpm (gallons per minute).

Except for small reaches of the river where the streambed is separated from the sand and gravel of the aquifer by silt, 4,000 gpm should be a fair estimate of the infiltration rate. Therefore, an estimated 6 mgd (million gallons per day) per mile or a total of 48 mgd could be induced to infiltrate into the aquifer from the Neversink River through the 8 miles of streambed between Godeffroy and Port Jervis. This

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The Condensed Chemical Dictionary

TENTH EDITION

Revised by

GESSNER G. HAWLEY

VAN NOSTRAND REINHOLD COMPANY
NEW YORK CINCINNATI TORONTO LONDON MELBOURNE

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powder; biodegradable. The dodecyl radical may have many isomers, and the benzene may be attached to it in many positions. Combustible.
Derivation: Benzene is alkylated with dodecene, to which it attaches itself in any secondary position; the resulting dodecylbenzene is sulfonated with sulfuric acid and neutralized with caustic soda. For ABS (branched-chain alkyl) the dodecene is usually a propylene tetramer, made by catalytic polymerization of propylene. For LAS (straight-chain alkyl), the dodecene may be removed from kerosine or crudes by molecular sieve, may be formed by Ziegler polymerization of ethylene, or by cracking wax paraffins to alpha-olefins. See also biodegradability; alkyl sulfonate, linear; detergent; alkylate (3).
Containers: Carlots.
Use: Anionic detergent.

sodium dodecyldiphenyl oxide disulfonate $C_{24}H_{34}O(SO_3)_2Na_2$. M.p. 150°C (dec); dry form 90% min active solution (45%), sp. gr. 1.1. Very soluble in water, strong acids, bases and electrolytes; stable to oxidation.

sodium edetate. See tetrasodium EDTA.

sodium erythorbate (sodium isoascorbate) $NaC_6H_7O_6$. White, free-flowing crystals. Soluble in water.
Grades: Technical; F.C.C.
Uses: Antioxidant and preservative.

sodium ethoxide. See sodium ethylate.

sodium ethylate (sodium ethoxide; caustic alcohol) C_2H_5ONa.
Properties: White powder, sometimes having brownish tinge. Readily hydrolyzes to alcohol and sodium hydroxide.
Derivation: By carefully adding small amounts of sodium to absolute alcohol kept at a temperature of 10°C, heating carefully to 37.7°C, again carefully adding sodium, cooling to 10°C, and adding the same quantity of absolute alcohol as was used originally.
Hazard: See sodium hydroxide, which is formed when exposed to moisture.
Use: Organic synthesis.

sodium ethylenebisdithiocarbamate. See nabam.

sodium 2-ethylhexyl sulfoacetate $C_8H_{17}OOCCH_2SO_3Na$.
Properties: Light cream-colored flakes; water-soluble. Good foaming properties and excellent resistance to hard water. Solutions practically neutral and stable to mineral acids. Low toxicity. Combustible.
Uses: Solubilizing agent, particularly for soapless shampoo compositions; electroplating detergent.

sodium ethylmercurithiosalicylate. See thimerosal.

sodium ethyl oxalacetate. See ethyl sodium oxalacetate.

sodium ethylxanthate (sodium xanthogenate; sodium xanthate) $C_2H_5OC(S)SNa$. See also xanthic acids.
Properties: Yellowish powder; soluble in water, alcohol.
Use: Ore flotation agent.

sodium ferricyanide (red prussiate of soda) $Na_3Fe(CN)_6 \cdot H_2O$.
Properties: Ruby-red, deliquescent crystals. Soluble in water; insoluble in alcohol. Low toxicity.
Derivation: Chlorine is passed into sodium ferrocyanide solution.
Grades: Technical; C.P.
Uses: Production of pigments; dyeing; printing.

sodium ferrocyanide (yellow prussiate of soda) $Na_4Fe(CN)_6 \cdot 10H_2O$.
Properties: Yellow, semitransparent crystals. Partially soluble in water; insoluble in organic solvents. Sp. gr. 1.458. Low toxicity.
Grades: Technical; F.C.C.
Containers: Bags.
Uses: Mfg. of sodium ferricyanide; blue pigments; blueprint paper; anticaking agent for salt; ore flotation; pickling metals; polymerization catalyst; photographic fixing agent.

sodium fluoborate. See sodium fluoroborate.

sodium fluophosphate. See sodium fluorophosphate.

sodium fluorescein. U.S.P. name for uranine.

sodium fluoride NaF.
Properties: Clear, lustrous crystals or white powder. Insecticide grade frequently dyed blue. Soluble in water; very slightly soluble in alcohol. Sp. gr. 2.558 (41°C); m.p. 988°C; b.p. 1695°C.
Derivation: By adding sodium carbonate to hydrofluoric acid.
Grades: Pure; C.P.; U.S.P.; insecticide; technical; single pure crystals.
Containers: 100-lb multiwall paper bags; 125-lb drums; 400-lb carlots.
Hazard: Toxic by ingestion and inhalation; strong irritant to tissue. Tolerance (as F), 2.5 mg per cubic meter of air.
Uses: Fluoridation of municipal water (1 ppm); degassing steel; wood preservative; insecticide (not to be used on living plants); fungicide and rodenticide; chemical cleaning; electroplating; glass manufacture; vitreous enamels; preservative for adhesives; toothpastes; disinfectant (fermentation equipment); dental prophylaxis; cryolite mfg; single crystals used as windows in ultraviolet and infrared radiation detecting systems.
Shipping regulations: (solution) (Rail, Air) Corrosive label.

sodium fluoroacetate (also known as 1080) FCH_2COONa.
Properties: Fine, white, odorless powder; soluble in

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water. Nonvolatile. Decomposes at 200°C; soluble in water; insoluble in most organic solvents.
Derivation: Ethyl chloroacetate and potassium fluoride form ethyl fluoroacetate, which is then treated with a methanol solution of sodium hydroxide.
Hazard: Highly toxic by ingestion, inhalation, and skin absorption. Tolerance, 0.05 mg per cubic meter of air. For use by trained operators only.
Use: Rodenticide.

sodium fluoroborate $NaBF_4$
Properties: White powder; bitter acid taste; slowly decomposed by heat; sp. gr. 2.47 (20°C); m.p. 384°C. Soluble in water; slightly soluble in alcohol.
Derivation: By heating sodium fluoride and hydrofluoboric acid and cooling slowly.
Uses: Sand casting of aluminum and magnesium; electrochemical processes; oxidation inhibitor; fluxes for nonferrous metals; fluorinating agent.

sodium fluorophosphate (sodium fluophosphate) Na_2PO_3F.
Properties: Colorless crystals; m.p. 625°C (approx.); soluble in water.
Grade: 97%.
Hazard: Toxic by ingestion; strong irritant.
Uses: Preparation of bactericides and fungicides.

sodium fluorosilicate (sodium silicofluoride; sodium hexafluorosilicate; sodium fluosilicate). Na_2SiF_6.
Properties: White, odorless, tasteless, free-flowing powder; sp. gr. 2.7; m.p., decomposes at red heat; partially soluble in cold water; more soluble in hot water; insoluble in alcohol.
Derivation: From fluosilicic acid and sodium carbonate, or sodium chloride.
Grades: Technical; C.P.
Containers: Multiwall bags; fiber drums; various sized barrels.
Hazard: Toxic by ingestion and inhalation; strong irritant to tissue. Tolerance (as F), 2.5 mg per cubic meter of air.
Uses: Fluoridation; laundry sours; opalescent glass; vitreous enamel frits; metallurgy (aluminum and beryllium); insecticides and rodenticides; chemical intermediate; glue, leather and wood preservative; moth repellent; mfg. of pure silicon (q.v.).

sodium formaldehyde bisulfite $HOCH_2SO_3Na$.
Properties: White water-soluble solid.
Derivation: Action of sodium bisulfite, formaldehyde and water.
Use: Textile stripping agent.
See also hydrosulfite-formaldehyde compounds.

sodium formaldehyde hydrosulfite. See hydrosulfite-formaldehyde compounds. Also used in synthetic rubber polymerization, and textile dyeing and stripping agent.

sodium formaldehyde sulfoxylate (sodium sulfoxylate; sodium sulfoxylate formaldehyde; SFS) $HCHO \cdot HSO_2Na \cdot 2H_2O$.
Properties: White solid; m.p. 64°C; soluble in water and alcohol.
Purity: Usually admixed with a sulfite.
Containers: Drums: truckloads.
Hazard: Probably toxic.
Uses: Stripping and discharge agent for textiles; bleaching agent for molasses, soap.
See also hydrosulfite-formaldehyde preparations.

sodium formate $HCOONa$.
Properties: White, slightly hygroscopic, crystalline powder, slight odor of formic acid; soluble in water and glycerol; slightly soluble in alcohol; insoluble in ether. Sp. gr. 1.919; m.p. 253°C.
Derivation: Carbon monoxide and sodium hydroxide are heated under pressure; also from pentaerythritol manufacture.
Grades: Technical; C.P.
Containers: Bags; carlots.
Uses: Reducing agent; manufacture of formic acid and oxalic acid; organic chemicals; mordant; manufacture of sodium dithionite; complexing agent; analytical reagent (noble metal precipitant); buffering agent.

sodium glucoheptonate $HOCH_2(CHOH)_5COONa$.
Light tan crystalline powder. A sequestering agent for polyvalent metals.
Uses: Metal cleaning; bottle washing; kier boiling; mercerizing; caustic boiloff; paint stripping; aluminum etching.

sodium gluconate $NaC_6H_{11}O_7$.
Properties: White to yellowish, crystalline powder; soluble in water; sparingly soluble in alcohol. Low toxicity.
Derivation: From glucose by fermentation.
Grades: Purified; technical; F.C.C.
Containers: Fiber drums; bags.
Use: Foods and pharmaceuticals; sequestering agent; metal cleaners; paint stripper; aluminum deoxidizer; bottle-washing preparations; rust removal; chrome tanning; metal plating; mordant in dyeing.

sodium glucosulfone $C_{24}H_{34}N_2Na_2O_{18}S_3$. (para′-diaminodiphenylsulfone-N,N′-di-dextrose sodium sulfonate). The U.S.P. grade is an aqueous solution (for injection), clear and pale yellow; pH 5.0–6.5. Used in medicine.

sodium glutamate (monosodium glutamate; MSG) $COOH(CH_2)_2CH(NH_2)COONa$. Sodium salt of glutamic acid, one of the common naturally occurring amino acids.
Properties: White crystalline powder; m.p., decomposes; soluble in water and alcohol. Shows optical activity. Most effective between pH 6 and 8. Nontoxic.
Derivation: (a) Alkaline hydrolysis of the waste liquor from beet sugar refining; (b) a similar hydrolysis of wheat or corn gluten; (c) organic synthesis based on acrylonitrile.
Grades: Technical, 99%; N.D.; F.C.C.

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(e) If no timely request for hearing is submitted and the commissioner does not determine to hold a public hearing on his own motion, the proposed variance or schedule prescribed pursuant to the granting of a variance or exemption shall become effective 30 days after notice of opportunity for hearing is given pursuant to subdivision (c) of this section. If a public hearing is held, the commissioner shall take appropriate action with respect to such proposed variance or schedule within 30 days after termination of the public hearing.

5-1.96 Enforceability of final schedule prescribed pursuant to granting of variance or exemption. Once a schedule prescribed pursuant to the granting of a variance under section 5-1.90 or an exemption under section 5-1.92 of this Subpart has become final pursuant to subdivision (e) of section 5-1.94 of this Subpart, the conditions or requirements of any such schedule shall be enforceable, upon the application of the commissioner, by any court of competent jurisdiction in the same manner as an order of the commissioner under section 1107 of the Public Health Law.

5-1.100 Separability. If any provisions of this Part are held invalid, such invalidity shall not affect other provisions which can be given effect without the invalid provisions.

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CHAPTER I STATE SANITARY CODE

PART 5
DRINKING WATER SUPPLIES
(Statutory Authority: Public Health Law §225)

SUBPART 5-1

PUBLIC WATER SUPPLIES

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(c) All users of a public water system shall prevent cross-connections between the potable water piping system and any other piping system within the premises.

5-1.32 Protection of equalizing and distribution reservoirs. Equalizing and distribution reservoirs which deliver water to the user without subsequent acceptable treatment shall be covered, or the water from an uncovered reservoir must be continuously disinfected in a manner acceptable to the State before being discharged to the distribution system.

5-1.33 Water supply emergency plans. (a) All water suppliers shall submit to the State a water supply emergency plan. The plan shall identify and outline the steps necessary to ensure that potable water is available during all phases of a water supply emergency.

(b) The water supply emergency plan shall include:

(1) The development of procedures for providing consumer notification during all phases of the water supply emergency.

(2) The development of criteria and procedures for determining and the subsequent reporting of critical water levels or safe yield of the source or sources of water.

(3) The identification of existing and future sources of water available during normal non emergency and water supply emergency conditions.

(4) The identification of all available water storage. Available water storage includes source, transmission and distribution system storage.

(5) The identification, capacity and location of existing inter-connections. Identification of additional inter-connections needed to provide potable water during a water supply emergency.

(6) The development of a specific action plan outlining all the steps to be implemented, taken or followed during a water supply emergency, including State notification, emergency notification rosters of key water supply personnel with current telephone numbers both business and home, and follow-up corrective action to minimize the reoccurrence of an emergency.

(7) The identification and implementation of procedures for water conservation and water use restrictions to be put in place during a water supply emergency.

(8) The identification of and the procedures for prioritization of potable water use during a water supply emergency.

(9) The identification and availability of emergency equipment needed during a water supply emergency.

(10) The development of criteria and procedures for determining and the subsequent reporting of the water supplier's capacity and ability to meet peak water demands and fire flow conditions concurrently.

(c) A vulnerability assessment shall be performed on the source or sources of water supply, the public water system, disinfection stations and water treatment plants to determine the vulnerability of these water supply components to a water supply emergency. The water supplier shall take whatever steps are necessary to ensure that potable water can be and is available during a water supply emergency.

(d) The water supplier, prior to the final submission of the water supply emergency plan to the State, shall publish a notice in a newspaper of general circulation in the area served by the community water system stating that the proposed water supply emergency plan is available for review and comment. The notice shall be printed at least once in each of two successive weeks. The water supplier shall accept public comment for at least fourteen days following the date of first publication. The water supplier shall submit all public comment with the water supply emergency plan to the State.

(e) The water supplier must submit the water supply emergency plan to the State by no later than December 31, 1990. The water supplier shall review, update and resubmit the water supply emergency plan every five years thereafter. The first revision is due no later than December 31, 1995.

(f) A community water system with an annual gross operating revenue of one hundred twenty-five thousand dollars or less, a non transient noncommunity water system and a noncommunity water system may be required to prepare, update and submit to the State an acceptable written water supply emergency plan for providing potable water during a water supply emergency.

PUBLIC WATER SYSTEMS; MAXIMUM CONTAMINANT LEVELS; MONITORING REQUIREMENTS; NOTIFICATIONS REQUIRED

5-1.50 Applicability and responsibility. The provisions of sections 5-1.50 and 5-1.51 of this Subpart shall apply to public water systems. The supplier of water of a public water system is responsible for completion of the sampling and analytical requirements set forth in such sections. At the discretion of the State, analyses performed by the State may be used for monitoring purposes.

5-1.51 Maximum contaminant levels. (a) The maximum contaminant levels contained in Section 5-1.52, Tables 1 through 7, shall not be exceeded. In the case where a MCL is exceeded, notwithstanding anything to the contrary contained in section 5-1.12 of this Subpart, the supplier of water will take the necessary steps to comply with this section as deemed appropriate by the State to ensure the protection of the public health, including the undertaking of remedial feasibility studies and subsequent installation of a suitable treatment process. Compliance with the MCLs shall be determined by the procedures contained in Tables 1 through 7.

(b) The minimum monitoring requirements for each contaminant are indicated in Section 5-1.52, Tables 8 through 12.

(c) The notifications required whenever an MCL is violated or a monitoring requirement is not met, are indicated in Section 5-1.52, Table 13.

(d) Analyses to determine compliance with this section shall be made in accordance with the methods set forth in Standard Methods for the Examination of Water and Wastewater, current edition. Except for microbiological analysis, a standard sample size shall be employed, with the standard sample used in the membrane filter procedure being 100 milliliters and in the multiple tube fermentation technique, being five times the standard portion of 10 milliliters and/or applicable procedures acceptable to the commissioner.

(e) Monitoring and reporting frequencies for specific contaminants may be established at State discretion whenever the State believes that a potential exists for an MCL violation or the contaminant may present a risk to public health.

(f) Notwithstanding anything to the contrary in subdivision (a) of this section the commissioner may recommend values lower than the MCLs if sufficient valid information based on commonly accepted scientific standards and principles demonstrates an increased public health concern. Within one year from the date of such recommendation, the State shall hold a public hearing regarding the justification for the lower value, and whether a new MCL is warranted.

(g) Notwithstanding anything to the contrary in section 5-1.52 the commissioner may in specific cases except specific organic chemicals from the MCLs for general organic chemicals if the supplier of water can demonstrate that sufficient valid scientific information exists to show that the organic chemical does not pose an unreasonable risk to human health, the organic chemical is present at a level and under circumstances not indicative of contamination, and the cost of compliance is unreasonable in light of the risk to human health.

(h) Notwithstanding anything to the contrary in Section 5-1.52, the commissioner may, based upon receipt and review of a justification submitted by the supplier of water, allow a higher MCL for a period of up to 60 days following application of a paint or lining to a potable water structure, if he determines that an unreasonable risk to human health does not exist.

5-1.52 Tables

TABLE 1-INORGANIC CHEMICALS AND PHYSICAL CHARACTERISTICS
MAXIMUM CONTAMINANT LEVEL DETERMINATION

Contaminants	MCL (milligrams per liter)	Determination of MCL violation
Primary		
Arsenic	0.05	If the results of a monitoring sample analysis exceed the MCL, the supplier of water shall collect three more samples from the same sampling point within 30 days or as soon as practical. An MCL violation occurs when the average[1] of the four results exceeds the MCL.
Barium	1.00	
Cadmium	0.01	
Chromium	0.05	
Lead	0.05	
Mercury	0.002	
Selenium	0.01	
Silver	0.05	
Fluoride	2.2	
Secondary		
Chloride	250.0	
Copper	1.0	
Corrosivity	Noncorrosive[4]	
Iron	0.3[2]	
Manganese	0.3[2]	
Sodium	No designated limits[3]	
Sulfate	250.0	
Zinc	5.0	
Color	15 Units	
Odor	3 Units	

1. Rounded to the same number of significant figures as the MCL for the substance in question.
2. If iron and manganese are present, the total concentration of both should not exceed 0.5 mg/l. Higher levels may be allowed when justified by the supplier of water.
3. Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

INTERVIEW ACKNOWLEDGEMENT FORM

Site Name:	C&D Batteries	I.D. Number:	336001
Person Contacted:	Michael M. Langan	Date:	7/21/88
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Type of Contact:	IN PERSON	Person Making Contact:	A. Kostic/ A. Longoria

Interview Summary:

C&D Charter Power Systems, (formerly C&D Batteries), purchased the site in 1973 from a manufacturer of black and white television picture tubes. To dispose various industrial wastes, the latter company had excavated a lagoon (waste fluid pond) adjacent to the plant building. There is no record of the quantity and composition of wastes disposed in the pond. Environmental Resources Management, Inc. installed five wells in 1982. According to preliminary analyses, fluoride attenuations in the soil were found to be considerable over a relatively short distance.

We met with Mr. Michael Langan who escorted us around the plant and showed us the location of the monitoring wells. Two wells (Nos. 2&3) were apparently covered when a newly paved road was constructed. Mr. Langan provided us with a 1982 hydrological study performed by Environmental Resources Management (ERM). He also informed us that ERM was presently completing a hydrological assessment study for C&D Charter Power Systems. Mr. Langan agreed to provide us with a copy of this study in order to enhance the Phase II study underway.

Acknowledgement: I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to Gibbs & Hill, Inc. interviewers, or as I have revised below, is an accurate account.

Revisions (Please write in corrections to above transcript)

Subsequent ERM Study forwarded to Gibbs & Hill

Signature: Michael M. Pangan Date: 1-18-89

Title: Environmental Engineer

Telephone Conversation Record

Date: 2/17/90

Time: _____

Call by: Alex Kostic (Name) of Gibbs & Hill, Inc. (Company)

Answer by: Michael Langan (Name) of C&D Power Systems (Company)
914/856-4466

Contract No: 5583-067 - C&D Batteries

Subject discussed: _____

SUMMARY OF DISCUSSION, DECISIONS AND COMMITMENTS

M. Langan informed me of the following:

1. The old neutralization tank located south of the building was removed in 1985.

2. Process wastewaters are treated by an ultrafiltration unit. Clean water returns to process. Water from the production well is used as makeup water.

3. Cooling system is a once-through noncontact system.

/nsa

E. UPDATED REGISTRY

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 2a REGION: 3 SITE CODE: 336001
EPA ID: NYD064337298

NAME OF SITE: (C&D Batteries) C&D Power Systems
STREET ADDRESS: Route 209, Huguenot
TOWN/CITY: Huguenot COUNTY: Orange ZIP: 12746

SITE TYPE: Open Dump ___ Structure ___ Lagoon _X_

Landfill ___ Treatment Pond ___

ESTIMATED SIZE: 10 acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME: C&D Charter Power Systems
CURRENT OWNER ADDRESS: Route 209, Huguenot, New York
OWNER(S) DURING USE: Empire Tube Corp.
OPERATOR DURING USE: Empire Tube Corp.
OPERATOR ADDRESS: Route 209, Huguenot, New York
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1959 to 1973

SITE DESCRIPTION:

Empire Tube Corporation used a lagoon for disposal of industrial wastes. The lagoon is presently inactive; its inner slopes are covered with grass and brush; and its bottom contains wet grasses and other vegetation. The lagoon is surrounded by a chain link fence. Ten monitoring wells have been installed. The Phase II draft report was completed in October 1989. The analyses show there is no evidence of migration of contaminants from the site into the groundwater and surface water. With exception of 4,4'-DDT, concentrations of all analytes of the surface water (tributary D-1-7) samples were found to meet NYSDEC water quality standards. The origin of the organics found in the sediment samples remains unclear.

RECOMMEND: Further investigation with respect to fluoride would be warrented.

HAZARDOUS WASTE DISPOSED: Confirmed ___ Suspected _X_

TYPE	QUANTITY (units)
Unknown	Unknown

ANALYTICAL DATA AVAILABLE:

Air ___ Surface Water _X_ Groundwater _X_ Sediment _X_

Soil _X_ Leachate ___ None ___

CONTRAVENTION OF STANDARDS:

Groundwater ___ Drinking Water _X_ Surface Water _X_ Air ___

LEGAL ACTION: None

TYPE: State ___ Federal ___
STATUS: Progress ___ Order Signed ___

REMEDIAL ACTION: None

Proposed ___ Under Design ___ In Progress Completed ___

NATURE OF ACTION:

GEOTECHNICAL INFORMATION:
SOIL TYPE: Coarse sands and gravel
GROUNDWATER DEPTH: Varies from 18 feet to 33 feet

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Contravention of drinking water and surface water standards.
Contamination of sediments.

ASSESSMENT OF HEALTH PROBLEMS:

Medium	Contaminants Available	Migration Potential	Potentially Exposed Population	Need for Investigatio
Air	Likely	Unlikely	Yes	Medium
Surface Soil	Likely	Unlikely	No	Low
Groundwater	Likely	Highly likely	Yes	High
Surface Water	Likely	Highly likely	No	Medium

HEALTH DEPARTMENT SITE INSPECTION DATE: 1/86

MUNICIPAL WASTE ID: N/A