ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

Saugerties Landfill
Site No. 356003
Town of Saugerties, Ulster County
Final - March, 1990

Prepared for:
New York State
Department of
Environmental Conservation

50 Wolf Road, Albany, New York 12233-7010
Thomas C. Jorling, Commissioner

Division of Hazardous Waste Remediation
Michael J. O'Toole Jr, P.E., Director

Prepared by:
Gibbs & Hill, Inc.
New York, New York

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

SAUGERTIES LANDFILL
TOWN OF SAUGERTIES, ULSTER COUNTY
SITE NO. 356003

RECEIVED
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BUREAU OF
HAZARDOUS SITE CONTROL
DIVISION OF HAZARDOUS
WASTE REMEDIATION

FINAL - MARCH 1990

PREPARED FOR:

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
50 WOLF ROAD
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CONTENTS

CONTENTS (Continued)

I. EXECUTIVE SUMMARY

Gibbs & Hill, Inc. (G&H) 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 Saugerties Landfill site (NYSDEC Site ID No. 356003) performed by G&H. A Phase I investigation of this site was completed in June 1987 by EA Science and Technology.

The Town of Saugerties Landfill site is a 15-acre active municipal landfill (part of a 44-acre plot) located on State Route 212 in the Town of Saugerties, Ulster County, New York (Figure I-1). The site was opened in 1970. It is owned and operated by the Town of Saugerties.

The site is located in a rural area with residential areas in the surrounding vicinity. The southwest part of the property is currently being used as the active landfill. The dump site originally was located at the left of the access road. The nearest residence is on the south side of the paved access road. An office/garage building is located at the northeastern portion of the property.

A production well is located in front of the office/garage building. There were two existing groundwater monitoring wells at the landfill at the initiation of Phase II investigations.

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 site reconnaissance; a geophysical survey; installation of four groundwater monitoring wells; and collection of five groundwater, two surface water, and two sediment samples. Groundwater, surface water, and sediment samples were analyzed to define the magnitude and extent of potential contamination at the Saugerties Landfill site.

The results of this Phase II investigation indicate that there is evidence of migration of manganese into the groundwater and surface water and that the Saugerties Landfill has an adverse impact on groundwater and surface water quality.

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

S_M = No score
- S_{gw} = No score
- S_{sw} = No score
- S_a = 0.00

S_{DC} = No score

S_{FE} = Not scored

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.

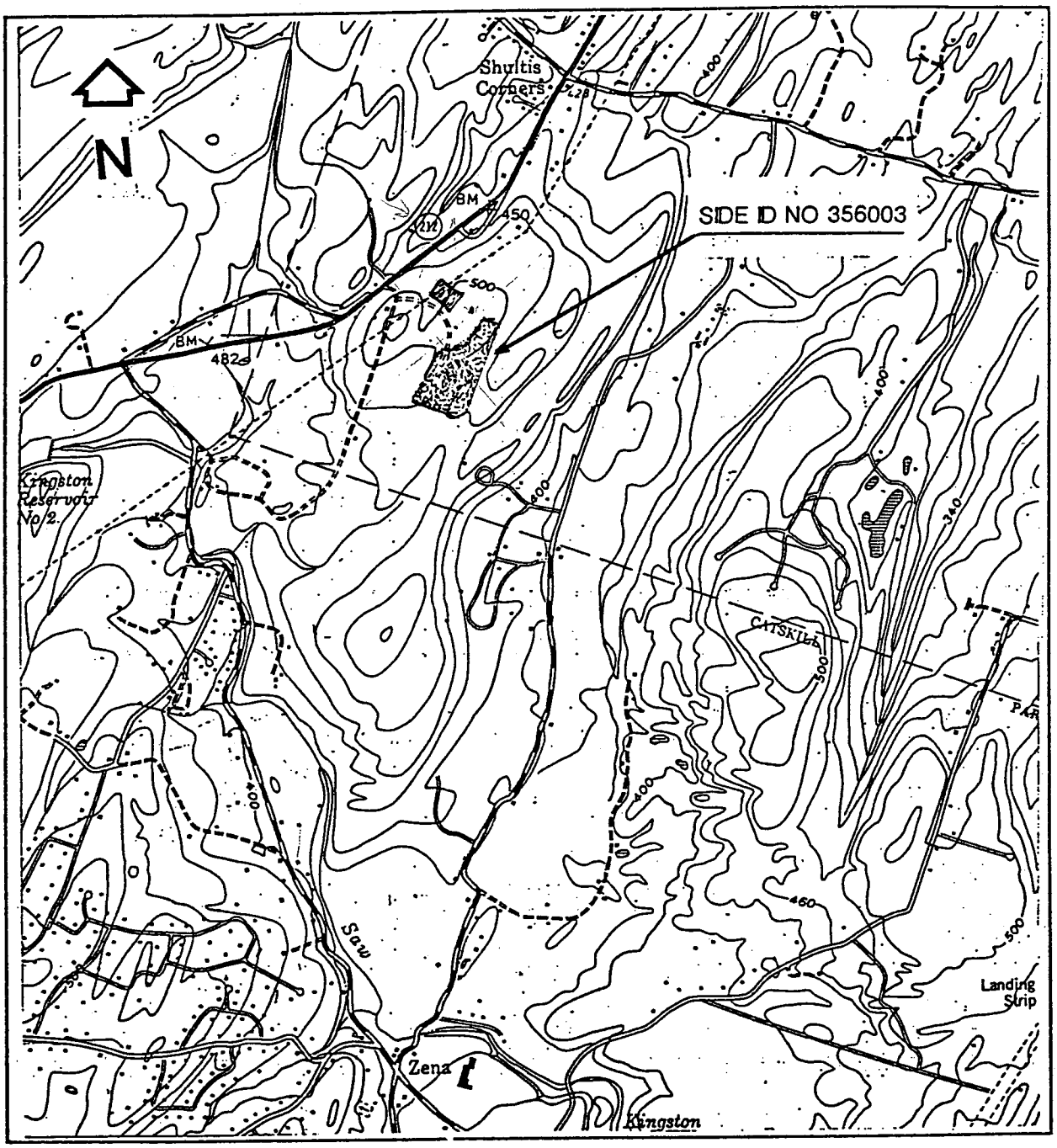


FIGURE I-1

COORDINATES:

LONGITUDE: 42° 02' 30"

LATITUDE: 74° 04' 30"

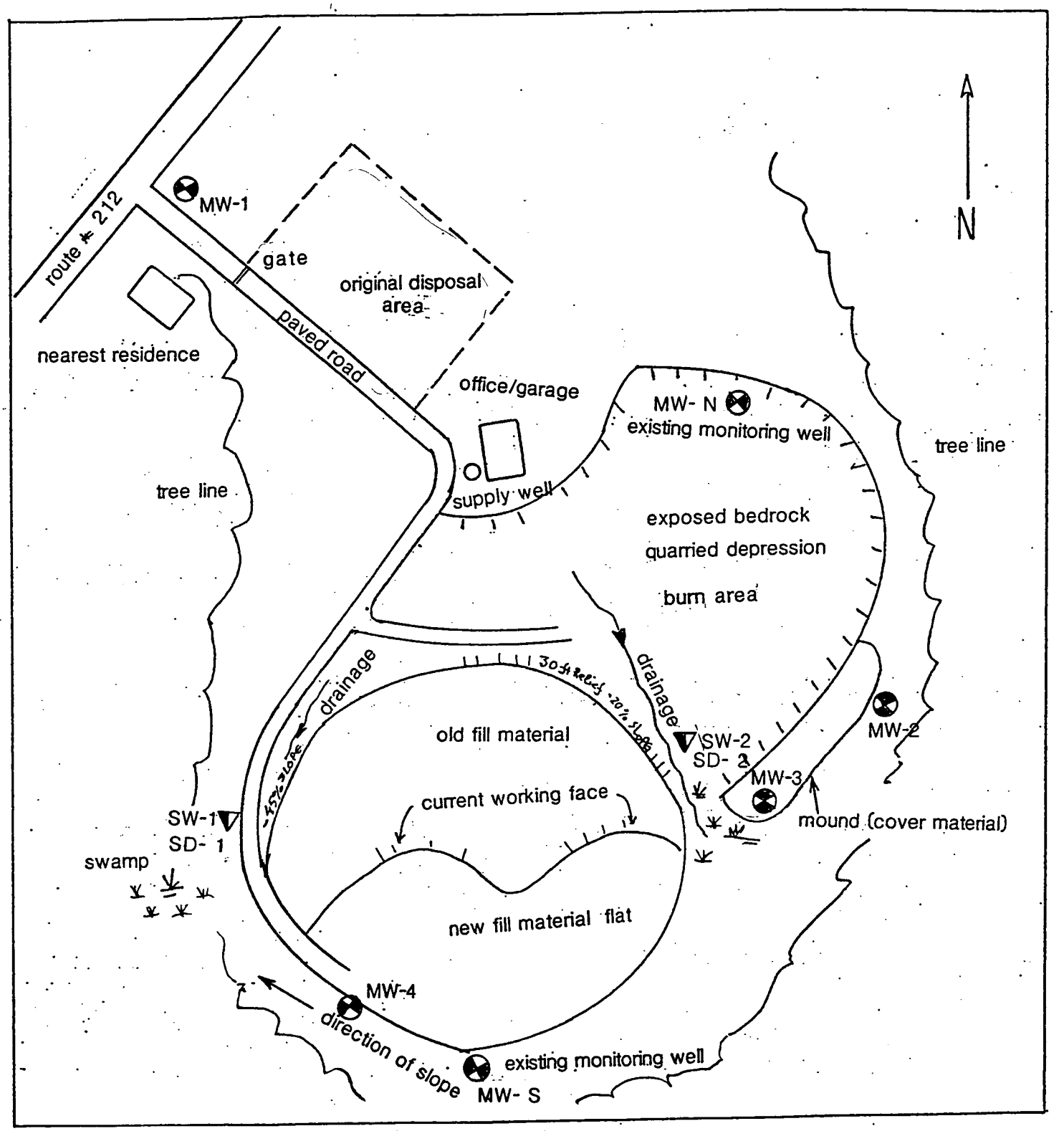
SITE LOCATION MAP
SITE: SAUGERTIES LANDFILL

MAP SOURCE:
USGS MAP WOODSTOCK QUAD
7.5 MINUTE SERIES (1980 EDITION)

1000 0 1000 2000

SCALE (FEET)

GIBBS & HILL, INC.



not to scale

FIGURE I-2

SITE SKETCH

SITE: SAUGERTIES LANDFILL

II

II

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 site investigation was to collect the information required to classify the site and to develop final HRS scores. This included collecting the field data necessary to identify the occurrence and characteristics of contamination and to 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 installation of groundwater monitoring wells and the sampling and analysis of groundwater, surface water, and sediment in accordance with NYSDEC protocols and guidelines.

III

III

III. SCOPE OF WORK

A. INTRODUCTION

Gibbs & Hill, Inc. (G&H) entered into a consulting services agreement October 16, 1986 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. 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 Saugerties Landfill site performed by G&H. A Phase I investigation of this site was completed in June 1987 by EA Science and Technology.

The Phase II field investigations at the Saugerties Landfill site began in July 1988 and were completed in February 1989. An updated work plan (Appendix A), approved by the NYSDEC, was prepared by G&H to define the scope of drilling and sampling activities at the site. The Phase II investigation was

comprised of a review of relevant literature, field investigations, and the preparation of final HRS scores. Field activities included an initial site reconnaissance; a geophysical investigation; installation of groundwater monitoring wells; and groundwater, surface water, and sediment sampling and analysis. The scope of work of the investigation is summarized in Table III-1

B. GEOPHYSICAL SURVEY

Geophysical surveys were conducted at the Saugerties Landfill site on August 30, 1988 to characterize subsurface conditions. A magnetometer was used at proposed monitoring well locations to detect ferromagnetic objects which might be encountered during drilling. A resistivity survey was performed to determine the depth to the water table and to locate anomalies which could indicate groundwater quality changes resulting from the landfill. A terrain conductivity survey was performed to characterize shallow subsurface conditions. The field procedures and results of this survey are presented in Appendix A.

C. MONITORING WELL INSTALLATION

Four bedrock monitoring wells were installed to establish the groundwater quality and flow of the aquifer beneath the dump

site. Originally, MW-1 was located in an assumed upgradient location. However, groundwater flow was determined to be other than as assumed, resulting in no upgradient wells. The locations of these wells are shown on Figure I-2 and in the table below. The locations of the wells, relative to the direction of groundwater flow, are discussed in Section IV.C. The direction of groundwater flow is shown on Figure IV-1.

MONITORING WELL LOCATION AND SPECIFICATION

Well No.	Location	Boring Depth (ft.)	Well Type
MW-1	Downgradient	27.00	Bedrock
MW-2	Downgradient	28.67	Bedrock
MW-3	Downgradient	27.58	Bedrock
MW-4	Downgradient	26.67	Bedrock

The monitoring wells were installed by Nx coring to depths ranging from 26.67 feet to 28.67 feet. Each well was logged during drilling activities. Nx coring samples were taken continuously. The aquifer hydraulic conductivity characteristic was evaluated by means of slug permeability tests. To determine flow direction of the aquifer beneath the dump site, all monitoring wells were surveyed for locations and elevations, and the relative depths to groundwater were determined. All field procedures, boring logs, survey data, and well schematics are included in Appendix B.

D. GROUNDWATER SAMPLING AND ANALYSIS

Four groundwater samples and one duplicate sample were collected February 29, 1989. A duplicate sample is designed to confirm the integrity of sampling and analytical activities. These samples were analyzed for Target Compound List (TCL) inorganics, volatiles, semi-volatiles, and pesticides/PCBs. 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. 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.

E. SURFACE WATER AND SEDIMENT SAMPLING AND ANALYSIS

Two surface water sediment sample pairs were collected from the drainage ditch constructed on the access road side of the working face to assess the existence of contamination of surface water by leachate generated from the site. Samples are collected from different locations as shown on Figure I-2. Samples were analyzed for TCL inorganics, volatiles, semi-volatiles, and pesticides/PCBs by H2M Labs and the results validated by OBG Laboratories.

F. LEACHATE SAMPLING AND ANALYSIS

The original scope of work required the collection of two leachate samples, if observed at the time of sampling. However, at the time of sampling, there was no leachate at the site and no samples could be collected.

G. 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 during site activities. In addition, Nx coring samples were scanned with a PID immediately upon their removal from the core barrel.

H. SOURCE OF INFORMATION

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

Contact	Information Received
Mrs. Gloria Shovel Supervisor Town Hall, Main Street Town of Saugerties, NY 12477 914/246-5657	Site history

Contact	Information Received
Mr. Jack Flanagan Landfill Supervisor Town of Saugerties Landfill Route 212 914/246-9866	Site history
Mr. Ben Conetta EPA Region II 26 Federal Plaza New York, NY 10278 212/264-6693	EPA ID No.
Mr. Dean Palen, P.E. Ulster County Department of Health 300 Flatbush Avenue Kingston, NY 12401 914/338-8443	Site file
Mr. Lawrence Alden NYSDEC 50 Wolf Road, Room 220 Albany, NY 12233 518/457-0639	NYSDEC file
Mr. Lee Lockhart Reproduction Supervisor Syracuse Blue Print Company Syracuse, NY 13210 315/476-4084	Wetland maps
Ulster County Sheriff Golden Hill Kingston, NY 12401 914/338-3640	Emergency phone numbers
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 518/457-3555	NYSDOT map

Contact	Information Received
Ms. Debbie Kraybill National Register of Historic Places National Park Service P.O. Box 37127 Department Of The Interior Washington, DC 20013-7127	Historic landmarks
Hagstrom 57 West 43rd Street New York, NY 10036 212/398-1222	Updated USGS maps
Ramanand Pergadia, P.E. Senior Sanitary Engineer NYSDEC Region III Div. of Solid and Hazardous Waste 21 South Putt Corners Road New Paltz, NY 12561 914/255-5453	NYSDEC files
Walter Bundy New York State Department of Health Empire State Plaza Corning Tower Building Albany, NY 12237 518/458-6731	Water supply inventory
Carol Reschke Community Ecologist New York State Dept. of Environmental Conservation Information Services Wildlife Resources Center Delmar, NY 12054	Critical habitat

TABLE III-1

SCOPE OF WORK

Task	Description
Record search and data compilation	Review Phase I information and any additional new information that is available.
Site reconnaissance	Note site changes since NYSDEC initial reconnaissance, access to monitoring well and sampling locations, and become familiar with the site.
Geophysical studies	Conduct geophysical survey. Based on the survey results, revise the location of monitoring wells if needed.
Updated work plan	Revise preliminary NYSDEC work plan based on results of record search, site reconnaissance, and geophysical studies. Prepare health and safety plan and define drilling and sampling protocols and procedures.
Monitoring wells	Install four bedrock wells to depths ranging between 27.0 and 28.67 feet. Collect NX coring samples continuously. Develop wells to at least a turbidity of 50 NTU, or lowest possible, and perform permeability tests. Survey all monitoring wells for locations and elevations. Determine the relative depths to groundwater.

TABLE III-1 (Continued)

Sampling and analysis	
Groundwater	Collect groundwater samples from each well 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 from the drainage ditch. Analyze these samples for TCL inorganics, volatiles, semi-volatiles, and pesticides/ PCBs.
Sediment	Collect two sediment samples from the drainage ditch. Analyze these samples for TCL inorganics, volatiles, semi-volatiles, and pesticides/PCBs.
Leachate	Collect two leachate samples if observed at the time of sampling. (No leachate was observed, and these smples could not be collected.)
Investigation Report	Prepare a report containing significant Phase I information, additional field data, final HRS scores, HRS documentation records, and site assessments.

IV

IV. SITE ASSESSMENT

A. SITE DESCRIPTION AND HISTORY

The Town of Saugerties Landfill site is a 15-acre active landfill (part of a 44-acre plot) located on State Route 212 in the Town of Saugerties, Ulster County, New York. The Town of Saugerties purchased this plot from Mr. Charles Keefe in 1969 for the sole purpose of operating a landfill. The site was opened in 1970 [D.1].

The site is located in a rural area with residential areas in the surrounding vicinity. There is a paved access road to the site from State Route 212. The gate at the entrance of the landfill is locked at night but does not deter pedestrian access because the property is not fenced. The nearest residence is on the south side of the paved access road. A dump site originally used for refuse disposal is north of the access road in the northern part of the property. A sign is posted at the access gate indicating the hours of landfill operation. Internal signs control traffic into the site working place and show specific areas for deposit of refuse, trees and brush, tires, and recycling materials where individuals may separate their deposits into glass, aluminum, paper, etc. An office/garage building is located at the northeastern portion of the property

at the front of an excavated area. This area consists of exposed bedrock [D.2].

There are two existing, unsecured groundwater monitoring wells at the landfill. Groundwater samplings and analyses of these wells were conducted in May 1979 by the New York State Department of Health, in March 1982 by Ferroxcube, and in July 1985 by Enviro Test Lab [D.11, 12, and 13]. A production well is located in front of the office building [D.2].

The Town of Saugerties began operation of the landfill in 1970. Initially, municipal wastes were disposed in the original dump site in three trenches excavated by the town situated in the northern part of the property. The quantity of municipal waste delivery to the site is unknown. For a number of years, the original dump site received from Ferroxcube, an electronics manufacturer, approximately 750 tons of grinding sludge (components unknown), 350 tons of grinding swarf (95+ percent iron oxide with oil and water), and 55 cubic yards of wastewater treatment sludge (high in iron oxide, zinc oxide, and manganese carbonate) per year [D.6 and 9]. In 1969, a manufacturer of glossy paper reportedly dumped a few ink containers containing toluene at a landfill operating at that time in the area. However, there is no documentation of this dumping, and reportedly the Woodstock Landfill was the recipient of this waste. Therefore, the assessment of this site does not consider

this waste [D.17]. The trenches of the original dump site are presently covered with soil.

After the three original trenches were filled in, the town employed the "cell method" of landfilling in the southern section of the property. The cells are formed by placing layers of new municipal wastes over compacted and covered waste material. During the investigation, the town was working on the third cell which overlies the second cell. The surface of the fill is sloped away from the working face to direct surface water off the waste area to drainage ditches, thus preventing ponding and infiltration into the fill [D.1 and 2]. Currently, only municipal wastes generated in the incorporated part of the Town of Saugerties is disposed at the active municipal landfill. The quantity of municipal wastes delivered at the site is unknown, as this data is not collected by the operator. The landfill was issued a New York State permit in March 1979 under which it is not allowed to accept hazardous industrial wastes or septic sludges [D.5].

The town plans to expand the landfill to the shale mining pit after completion of the third cell. Shale is excavated by the town for use as cover material on the landfill [D.2].

B. SITE TOPOGRAPHY

The Town of Saugerties Landfill site is located along State

Route 212 in Ulster County at an elevation of approximately 480 feet above mean sea level. The site is located in hilly terrain with low to medium density residential areas in the surrounding vicinity.

An office/garage building is located on a small hill which slopes to the northwest from the garage to State Route 212 and to the southwest from the garage to the active landfill perimeter.

The current working area of the landfill (Figure 1-2) is located in the southern section of the site. The natural terrain beneath the landfill has a slope of 1 to 3 percent to the southwest; however, much of the terrain slopes away from all sides of the site. Working faces of the landfill have slopes ranging from 20 to 45 percent [D.2].

Two drainage ditches to the northwest and northeast of the landfill divert runoff away from the landfill operation and discourage ponding and flooding. The surface runoff follows the ditch line which runs to the southwest [D.18].

The closest residence is located outside the landfill limits near the access road gate approximately 500 feet east of the original dump site.

There are no surface waters crossing the 44-acre site. Adequate cover on the landfill area (placed in accordance with Section 360.8 of the Rules and Regulations for Solid Waste Management) prevents surface runoff from penetrating the landfill [D.2]. The nearest surface water is a tributary of the Saw Kill and is located approximately 1,100 feet to the south of the southernmost edge of the landfill and 1,600 feet to the southernmost edge of the old landfill (Figure I-1).

There are about 1,781 homes within 3 miles of the site, each served by private well water systems. The estimated population of 6,418 people is served by private wells. Two other water systems, the Hudson Valley Water Company No. 4, serving 350 people; and the Trnka Farms Mobile Home Park water system, serving 138 people, are likewise located within 3 miles of the site [D.18 and 21].

No 5-acre freshwater wetland, critical habitat of endangered species, or national wildlife refuges are located within a mile or less from the site. Catskill Park is located 1,250 feet southwest of the site.

An office/garage building located on the site is near an excavated area of exposed bedrock. A production well is located in front of the office/garage building [D.1 and D.2].

There are two existing groundwater monitoring wells at the site located to the south of the current landfill (MW-S) and to the north of the excavation area (MW-N).

There have been no reported complaints of groundwater contamination at the site.

C. HYDROLOGY

The regional geology is predominantly composed of shale, sandstone, and limestone. The Slide Mountain and lower Walton Formation sandstone, shale, and conglomerate are located west of the site, forming the Catskill Mountains. East of the site, sandstone and shale of the undifferentiated lower Hamilton Group changes to Onondaga limestone and finally into the Austin Glen graywacke and shale which form ridges along the Hudson River.

At the site, a thin layer of glacial till overlies layered shale and sandstone of the Middle Devonian Age Plattekill and Ashokan Formations. Brennen and Rossi, consulting engineers for the town, report approximately 1 foot of overburden overlies the shale; and therefore, good potential exists that landfilled material directly overlies bedrock. The shale at the Saugerties Landfill is being excavated to a depth of about 20 feet. Because the overburden is absent or too thin to supply sufficient quantities of water, the shale and sandstone aquifer is considered the aquifer of concern [D.18].

Four soil borings were drilled to further assess the site's hydrogeology and for monitoring well installation. The boring logs revealed alternating bands of green and red friable and highly fractured shale. Small clay seams were also observed in the borings. A more competent red and green sandy shale existed in the borings associated with wells MW-2 and MW-3 at greater than 20 feet below ground surface. The fractured shale was found at or near the surface in all the borings except MW-3 where 9.42 feet of overburden was present. Water levels ranged from 9.56 feet to 18.56 feet below top of well casing [B.2].

Hydraulic conductivity in the saturated zone was determined by a slug test. Results from the slug tests performed on wells MW-1, MW-2, MW-3, and MW-4 showed hydraulic conductivities of $9x10^{-3}$ cm/sec., $7x10^{-2}$ cm/sec., $1x10^{-1}$ cm/sec., and $8x10^{-2}$ cm/sec., respectively, which are in the high permeable range [B.1 and B.2].

To verify the groundwater flow direction, the water level elevation of all wells (including the two existing wells) were measured on January 12, 1990. The groundwater flow direction was determined to be radial, away from the site (Figure IV-1). The natural topography of the land surface as well as the one caused by the mounding of landfill material appears to be influencing this radial groundwater flow pattern. The landfill is situated on somewhat of a plateau where the terrain slopes

away from the site in every direction. Surface water drainage has been observed to slope in both a westerly and easterly direction providing a clue to the radial groundwater flow pattern. In this area, the water table generally is a subdued expression of the land surface and tends to parallel the topography because precipitation falls fairly uniformly over the land surface. Because the flow paths of the groundwater appear to be radial, none of the six wells on-site are apparently upgradient.

D. SITE CONTAMINATION ASSESSMENT

Potential contamination of the environment was assessed by a review of the character of wastes suspected at the site and chemical analyses of samples. The character of wastes suspected at the site was evaluated by a review of information from historic literature collected in Appendix D.

Tables IV-1 through IV-6 summarize the results of analyses performed at the site for every analyte in the samples if that analyte was detected in concentrations above the Contract Required Quantitation Limit (CRQL). However, an analyte detected below the CRQL in one sample is reported when it was detected above the CRQL in another sample or is a contaminant of concern at the site.

Groundwater, surface water, and soil assessment, the process by which analytical data was evaluated, was based on the criteria presented in the Section C.1.

1. Waste Characteristics

Given the nature of disposed wastes, contaminants typical from municipal landfill leachate would be expected. These include chromate, zinc, mercury, lead, and cadmium [D.20]. Concentrations of iron and manganese in groundwater would also be expected from Ferroxcube wastes.

2. Groundwater Contamination

Results from the analyses of groundwater samples are summarized in Tables IV-1 and 2. Because the actual radial direction of groundwater flow differs significantly from the anticipated southwest flow direction, none of the four groundwater monitoring wells are located in a position to most adequately assess background (upgradient) water quality.

Table IV-1 shows that only two organics were found in the groundwater samples. The organic compound 1,1,1-trichloroethane was found in sample GW-4 in the concentration of 6 ug/l. Since no background concentration

is available for comparison, all compounds have been compared to the CRQLs. The result for contamination of the sample is not more than three times the CRQL (5 ug/l); and therefore, this concentration cannot be considered as a significantly higher level than the background level. Bis (2-ethylhexyl) phthalate, a common laboratory contaminant, was found in all samples and the field and method blanks. The results suggest that the site was not a source of this contamination, since all samples showed concentrations of this phthalate less than five times the concentration in the method blank. Therefore, the results of chemical analyses indicate that volatile and semi-volatile organic compounds were not detected in concentrations which met criteria for significant release. In addition, no pesticides or PCBs were detected.

Ten metals were detected in the groundwater samples. Two of them, iron and manganese, were detected in concentrations which exceed EPA and NYSDEC drinking water standards. The other eight metals detected in the samples: aluminum, barium, beryllium, calcium, magnesium, selenium, sodium, and zinc, were at levels below these standards (Table IV-7). Iron and manganese are inorganic contaminants of concern at the site. They are both defined as hazardous substances under the CERCLA, but not listed as hazardous wastes under the RCRA. The groundwater samples'

concentrations are extremely variable. Concentrations of iron ranged from 1,480 ug/l (GW-4) to 11,500 ug/l (GW-3) and manganese from 38.1 ug/l (GW-1) to 7,160 ug/l (GW-3). All inorganic analyses were performed on unfiltered samples. Since both soluble and insoluble components were measured, these two metals can indicate natural conditions as well as a release from the site. Iron and manganese were also detected in surface water samples in concentrations greater than the NYSDEC surface water standard for aquatic life, and they were also found in the sediment samples. This suggests that there is a source of iron and manganese contamination. Groundwater gradient is steeper towards wells MW-2 and MW-3 than towards wells MW-1 and MW-4, influencing the main stream of leachate from the landfill to migrate towards wells MW-2 and MW-3. This may explain the difference in iron and manganese concentrations in the samples and also suggests that the landfill is probably the source of the contaminants.

However, since the flow path of groundwater is radial and, therefore, there is no upgradient well on-site, a final HRS score cannot be prepared with the current available information.

3. Surface Water

Results for two surface water samples are summarized in Tables IV-3 and IV-4. Because the surface water is a swamp without a clearly defined upstream source, no background surface water sample was collected.

Four organic compounds were found in the surface water samples. The concentrations of bis (2-ethylhexyl) phthalate and 4,4'-DDT found in the SW-2 sample are less than five times and three times, respectively, the concentrations in the method blank; and therefore, they are considered as sampling artifacts. Aldrin was found in the SW-2 sample at a concentration of 0.05 ug/l and endosulfan I in the SW-1 sample at a concentration of 0.10 ug/l. The concentrations of these compounds are less than three times the CRQL (0.05 ug/l) and therefore are not considered to have been detected in concentrations which meet criteria for observed release of contaminants into surface water. The concentration of aldrin is above New York State water standards and the concentration of endosulphan I is below these standards (Table IV-7).

Twenty-four inorganics were detected in the surface water samples. Concentrations of TCL inorganics: aluminum, barium (SW-2 only), cadmium (SW-1 only), calcium, chromium,

copper, iron, lead, magnesium, manganese, potassium (SW-1 only), silver, sodium (SW-1 only), and zinc were detected three times greater than the CRQL; and therefore, they are probably not laboratory or sampling artifacts. In the absence of a background surface water sample, they were also compared to the NYSDEC surface water standards. Concentrations of calcium, iron, lead (SW-1 only), manganese, potassium (SW-1 only), silver, sodium (SW-1 only), vanadium, and zinc (SW-2 only) were detected at concentrations above NYSDEC surface water standards.

Because there was no background surface water sample, an adequate surface water contamination assessment and final HRS score cannot be made.

4. Sediment

Results for sediment samples are summarized in Tables IV-5 and IV-6.

Four organic compounds were detected in the soil samples. In the absence of a background sediment sample, the concentrations of organic compounds are compared to the CRQLs. Two common laboratory contaminants (methylene chloride and acetone) were found at concentrations equal or less than ten times the CRQL. Because these organics are

common laboratory contaminants, are not contaminants of concern, and not detected in groundwater and surface water samples, these results most likely indicate a laboratory contamination of the samples. The organic compound 1,1,1-trichloroethane is detected in a concentration less than three times the CRQL; and therefore, it is probably a laboratory or sampling artifact. Bis (2-ethylhexyl) phthalate was detected in sample SD-1 in a concentration greater than ten times the CRQL and the concentration in the method blank. However, this compound is a common laboratory contaminant, and this result probably indicates a laboratory artifact.

With the exception of cadmium, the inorganics found in the sediment do not exceed the typical range of concentrations of these inorganics in non-contaminated soil (Table IV-7).

5. Air Survey

Air quality surveys were conducted with a PID during the site reconnaissance, well installation, and sampling activities in accordance with appropriate health and safety precautions. A background level of 0.2 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 tasks of the Phase II investigations for the Saugerties Landfill site have been completed.

Because of the radial direction of groundwater flow, none of the four groundwater monitoring wells are located in a position to adequately assess background groundwater quality; and consequently, the final HRS score cannot be prepared. However, the results of this Phase II investigation suggest that there is migration of two CERCLA hazardous substances, manganese and iron (which are not listed as hazardous wastes under RCRA), into the groundwater and surface water.

Further investigations are recommended to determine the existence and the extent of possible contamination.

TABLE IV-1 - ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES - ORGANICS
(All data in microgram/liter)

SAUGERTIES LANDFILL

Compound	GW-1	GW-2	GW-3	GW-4	GW-5	Method Blank	Field Blank
1,1,1-trichloroethane	ND	ND	ND	6	ND	ND	ND
Bis (2-ethylhexyl) phthalate	30 B	43 B	77 B	54 B	120 B	45	35 B

- ND - Not detected
- GW-5 is duplicate of GW-2
- B - Contaminant also detected in Method Blank

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

SAUGERTIES LANDFILL

Analyte	GW-1	GW-2	GW-3	GW-4	GW-5	Field Blank
Aluminum	1,210	3,320	377	1,160	3,650	ND
Barium	88.0 B	240	189 B	30.0 B	206	7.0 B
Beryllium	6	6	6	5	5	ND
Calcium	4,020 B	56,900	52,000	17,300	52,700	ND
Iron	1,860	5,500	11,500	1,480	6,180	40 B
Magnesium	716 B	13,200	9,770	3,300	13,000	235 B
Manganese	38.0	1,660	7,160	331	1,250	5.0 B
Selenium	2	ND	ND	ND	ND	ND
Sodium	79,400	15,200	61,700	7,310	12,700	627 B
Zinc	29.0	24.0	23.0	8.0 B	32.0	5.0 B

- GW-5 is duplicate of GW-2
- B - Detected at less than Contract Required Detection Limit (CRQL), but greater than Instrument Detection Limit (IDL)

TABLE IV-3 - ANALYTICAL RESULTS FOR SURFACE WATER - ORGANICS
(All data in microgram/liter)

SAUGERTIES LANDFILLL

Compound	SW-1	SW-2	Method Blank
Bis (2-ethylhexyl) phthalate	ND	24 B	10
Aldrin	0.05	ND	ND
Endosulfan I	ND	0.10	ND
4,4'-DDT	ND	0.20 B	0.10

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

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

SAUGERTIES LANDFILLL

Analyte	SW-1	SW-2
Aluminum	11,200	10,100
Antimony	46.0	46.0
Arsenic	6.0	4.0
Barium	304	103
Beryllium	2.0	1.0
Cadmium	7.0	5.0
Calcium	99,000	37,500
Chromium	20	10
Cobalt	22.0	27.0
Copper	29.0	32.0
Iron	27,300	19,700
Lead	80.0	39.0
Magnesium	33,000	9,140
Manganese	3,600	1,490
Mercury	0.2	0.2
Nickel	34.0	39.0
Potassium	59,300	4,600
Selenium	1.0	1.0
Silver	10.0	10.0
Sodium	127,000	10,500
Thallium	4.0	2.0
Vanadium	43.0	33.0
Zinc	278	757
Cyanide	10.0	10.0

• NS - No standards

TABLE IV-5 - ANALYTICAL RESULTS FOR SEDIMENT - ORGANICS
(All data in microgram/kilogram)

SAUGERTIES LANDFILLL

Compound	SD-1	SD-2	Method Blank
Methylene chloride	37	25	ND
Acetone	52	43	ND
1,1,1-trichloroethane	12	8	ND
Bis (2-ethylhexyl) phthalate	4,100 B	1,600 B	270

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

TABLE IV-6 - ANALYTICAL RESULTS FOR SEDIMENT SAMPLES - TCL INORGANICS
(All data in milligram/kilogram)

SAUGERTIES LANDFILL

Analyte	SD-1	SD-2
Aluminum	11,000	11,500
Antimony	14.8	10.6
Arsenic	3.9	0.9
Barium	75.2	46.0
Beryllium	1.9	1.4
Cadmium	8.4	4.4
Calcium	3,700	4,230
Chromium	16.2	16.1
Cobalt	18.1	13.1
Copper	10	7.6
Iron	37,000	25,300
Lead	31	20.5
Magnesium	5,320	5,600
Manganese	643	549
Mercury	0.11	ND
Nickel	30.3	36.8
Potassium	808	621
Sodium	2,910	1,990
Vanadium	22.6	18.4
Zinc	237	193

• ND - Not detected

TABLE IV-7

FEDERAL AND STATE WATER STANDARDS AND GOALS

TCL VOLATILE ORGANICS		Contract Detection Limit	[A] EPA 40CFR141 MCL*	[A] EPA 40CFR141 MCLG**	[B] 10 NYCRR Subpart 5.1 MCL*	[C] 6 NYCRR 702 Standard	[D] 6 NYCRR 703 Standard
CAS Number	Compound	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]
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."

FEDERAL AND STATE WATER STANDARDS AND GOALS

TCL SEMI-VOLATILE ORGANICS		Contract Detection Limit	[A] EPA 40CFR141 MCL*	[A] EPA 40CFR141 MCLG**	[B] 10 NYCRR Subpart 5.1 MCL*	[C] 6 NYCRR 702 Standard	[D] 6 NYCRR 703 Standard
CAS Number	Compound	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[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."

FEDERAL AND STATE WATER STANDARDS AND GOALS

TCL SEMI-VOLATILE ORGANICS		Contract Detection Limit	[A] EPA 40CFR141	[A] EPA 40CFR141	[B] 10 NYCRR Subpart	[C] 6 NYCRR 702	[D] 6 NYCRR 703
CAS Number	Compound	[ug/l]	MCL* [ug/l]	MCLG** [ug/l]	5.1 MCL* [ug/l]	Standard [ug/l]	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."

FEDERAL AND STATE WATER STANDARDS

TCL PESTICIDES AND PCB's		Contract Detection Limit	[A] EPA 40CFR141 MCL*	[B] 10 NYCRR Subpart 5.1 MCL*	[C] 6 NYCRR 702 Human	[C] 6 NYCRR 702 Aquatic	[C] 6 NYCRR 702 PCR**	[D] 6 NYCRR 703 Standard
CAS Number	Compound	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]
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	0.5			50	50	50	ND[2]
12674-11-2	AROCLOR-1016	1.0		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.

STATE SOIL REGULATIONS

TCL INORGANICS		[F] Common Range in Soil [mg/kg]	[G] 6 NYCRR Part 360 4.4 MC* [mg/kg]
CAS Number	Analyte		
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."

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)

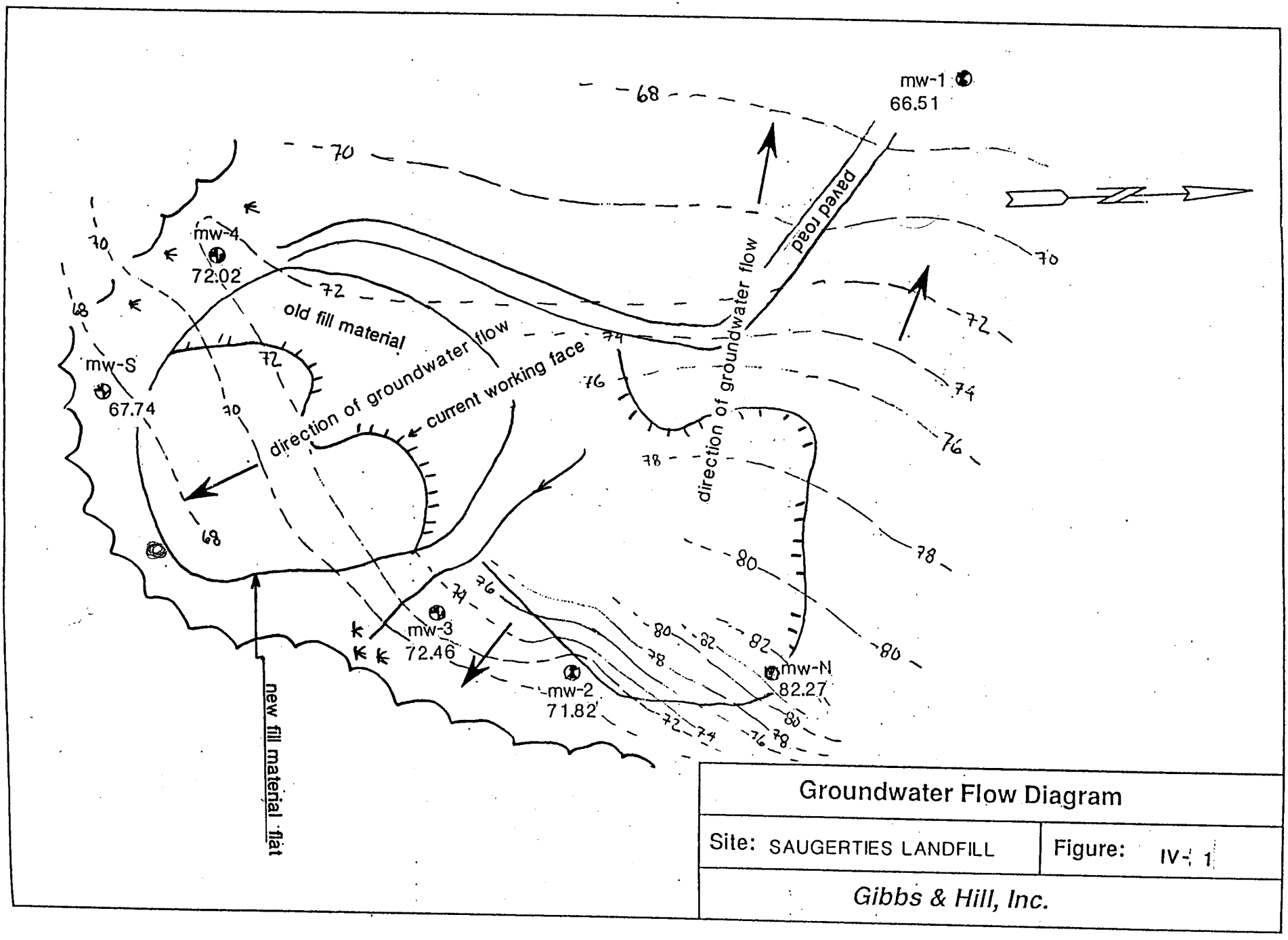
Applied to results of all water sample analyses.

[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.



Groundwater Flow Diagram

Site: SAUGERTIES LANDFILL | Figure: IV-1

Gibbs & Hill, Inc.

V. FINAL APPLICATION OF HAZARD RANKING SYSTEM

V. FINAL APPLICATION OF HAZARD RANKING SYSTEM

A. NARRATIVE SUMMARY

The Town of Saugerties Landfill site is a 15-acre active landfill (part of a 44-acre plot), located on Route 212, in the Town of Saugerties, Ulster County, New York. The site was opened in 1970 and is owned and operated by the Town of Saugerties.

Currently, only refuse generated in the unincorporated part of the Town of Saugerties is disposed at the site. The landfill is not allowed to accept hazardous industrial wastes or septic sludges. Hudson Valley Water Company, Trnka Farms Mobile Home Park and non-community water systems use the groundwater as a source of drinking water. There is no freshwater lands within 1-mile radius. No agricultural land within a 3-mile radius has been irrigated.

The groundwater, surface water, and sediment analyses show that there is evidence of a hazardous substance observed release, and that the Saugerties site has an adverse impact on the groundwater and surface water quality.

B. SITE LOCATION MAP

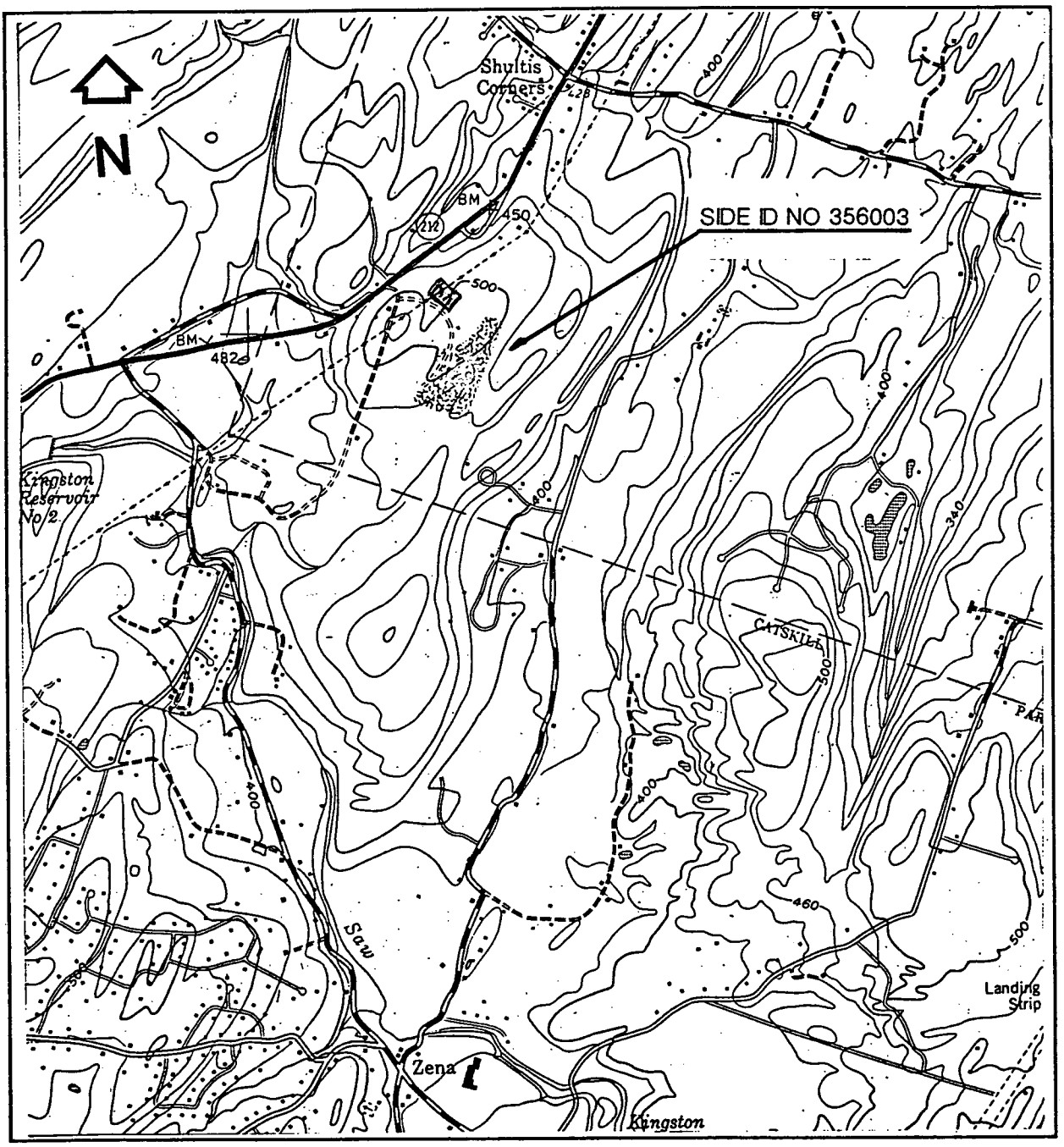


FIGURE V-1

COORDINATES:

LONGITUDE: 42°02'30"

LATITUDE: 74°04'30"

SITE LOCATION MAP
SITE: SAUGERTIES LANDFILL

MAP SOURCE:
USGS MAP WOODSTOCK QUAD
7.5 MINUTES SERIES (1980 EDITION)

GIBBS & HILL, INC.

C. UPDATED HRS WORKSHEETS

Facility name: Town of Saugerties Landfill

Location: Town of Saugerties, Ulster County

EPA Region: II

Person(s) in charge of the facility: Mrs. Gloria Shovel (town Supervisor)
Town Hall, Main Street
Saugerties, New York 12477

Name of Reviewer: M. Valentino Date: August 3, 1989

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.)

The site is a 15-acre active municipal landfill on Route 212, south of Shultis Corners. The landfill received grinding sludge, grinding swarf, and wastewater treatment sludge from a local electronics manufacturer. No hazardous contaminants were found in the four monitoring wells installed on-site.

Scores: S_M = NS (S_{gw} = NS S_{sw} = NS S_a = 0.00)
S_{FE} = NS
S_{DC} = Not scored

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	NS	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	12	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)		1	8	8	
Total Waste Characteristics Score				20	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]				NS	57,330	
[7] Divide line [6] by 57,330 and multiply by 100			S_{gw} = NS			

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	NS	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	4	6	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			9	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	18	18	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			18	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]			NS	64,350	
[7] Divide line [6] by 64,350 and multiply by 100		S_{SW} =	NS		

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:					
Sampling Protocol:					
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	20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 (21) 24 27 30	1	21	30	
Distance to Sensitive Environment	(0) 1 2 3	2	0	6	
Land Use	0 1 2 (3)	1	3	3	
	Total Targets Score		24	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})	NS	NS
Surface Water Route Score (S_{sw})	NS	NS
Air Route Score (S_a)	0.00	0.00
$S_{gw}^2 + S_{sw}^2 + S_a^2$		NS
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		NS
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		NS

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} = Not scored			

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	3	3	8.2
3 Containment	0 (15)	1	15	15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5	NS	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 (2) 3 4 5	4	8	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			8	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			NS	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} = NS			

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: Town of Saugerties Landfill

LOCATION: Town of Saugerties, Ulster County, New York

DATE SCORED: June 28, 1989

PERSON SCORING: Mike Valentino

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

- Groundwater, surface water, and sediment analyses
- Site visit
- NYSDEC Files
- Phase I Report

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

Sa - no air sampling data available

COMMENTS OR QUALIFICATIONS:

Because of the radial direction of groundwater flow, none of the groundwater monitoring wells are located in a position to most adequately assess background groundwater quality. Therefore, final groundwater and surface water route scores could not be prepared.

GROUNDWATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

Iron and manganese were detected in concentrations which exceed EPA and NYSDEC drinking water standards [1]. However, because there was no upgradient groundwater sample, an observed release cannot be scored.

Score = NS

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

Fractured red and green shale with small clay seams. Some red and green sandstone and sandy shale is present at deeper levels, greater than 20 feet [3].

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

1.14 feet [4]. Represents highest level of sampled wells, seasonal. Variation unknown [4].

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

1.14 feet. Waste was disposed on the surface [4 and 6].

Score = 3

Net Precipitation

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

40 inches [2]

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

28 inches [2]

Net precipitation (subtract the above figures):

12 inches [2]

Score = 2

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Fractured red and green shale [3]

Permeability associated with soil type:

Greater than 10^{-3} cm/sec. [3]

Score = 3

Physical State

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

Sludge and solids (grinding swarfs, wastewater treatment sludge, and refuse) [6 and 7]

Score = 3

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

No containment on-site [6]

Method with highest score:

No liner or leachate collection system [6]

Score = 3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Manganese and iron [1]

Compound with highest score:

Manganese

Score = 12

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):

Grinding sludge:	6,750	tons
Grinding swarf:	3,150	tons
Industrial wastewater sludge:	495	cubic yards
Total:	10,395	tons [7]

Basis of estimating and/or computing waste quantity:

The quantity of municipal waste delivered to the site is unknown. For a number of years (best estimate 9 years), the original dump site annually received approximately 750 tons of grinding sludge (components unknown), 350 tons of grinding swarf (95+ percent iron oxide with oil and water) and 55 cubic yards of industrial wastewater sludge - high in zinc, iron, and manganese oxide) [6 and 7].

Score = 8

5 TARGETS

Groundwater Use

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

Drinking water. No alternate supply available [8].

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:

Private well located between Route 212 and Artist Road [10].

Distance to above well or building:

Approximately 500 feet west of the old dump area and approximately 1,500 feet northwest of the most distant edge of the landfill [10].

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:

Hudson Valley Water Company No. 4	350	
Trnka Farms Mobile Park	138	
Private wells	6418	
	6906	[8,10,&21]

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):

Although there is agricultural land within 3 mi of the site, none of it is irrigated with groundwater [12].

Total population served by ground water within a 3-mile radius:

6,906 [8 and 10]

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):

Iron, manganese, chromium, lead, and zinc were detected in the surface water samples at concentrations three times greater than the CRQL and above NYSDEC surface water standards. However, because there was no upstream sample, an observed release cannot be scored [1].

Score = 45

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Average slope is 13 percent [5]

Name/description of nearest downslope surface water:

Tributary of the Saw Kill river located approximately 1,100 feet to the south of the southernmost edge of the current landfill and 1,600 feet of the southernmost edge of the old dump area. Flow direction is southwest [5 and 10].

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

Average slope is less than 1 percent [10]

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

No [10]

Score = 0

Is the facility completely surrounded by ares of higher elevation?

No [10]

1-Year, 24-Hour Rainfall in Inches

2.5 inches [2]

Score = 2

Distance to Nearest Downslope Surface Water

Approximately 1,100 feet (measured from southernmost edge of landfill) [10].

Score = 2

Physical State of Waste

Sludge and solid: grinding swarfs and wastewater treatment sludge [6, 7, and 14]

Score = 3

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill has adequate cover material [22]. No leachate observed. There is no diversion system. Landfill slopes towards drainage systems.

Method with highest score:

The landfill adequately covered except the working area [22].

Score = 0

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Iron, manganese, chromium, lead, and zinc [1]

Compound with highest score:

Lead

Score = 18

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

Score = 0

Basis of estimating and/or computing waste quantity:

The landfill has adequate cover material (containment score is zero).

* * *

5 TARGETS

Surface Water Use

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

Recreational [15]

Score = 2

Is there tidal influence?

N/A

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 [16]

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

None [17]

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 [8]

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

None. No land is irrigated within 3 miles of the site [12].

Total population served:

Zero [12]

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes measured in stream miles.

N/A

Score = 0

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

No documentation of an observed release has been obtained. Field measurements taken with a PID indicated no readings above background levels [3].

Score = 0

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

Reactivity and Incompatibility

Most reactive compound:

N/A

Score = 0

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

N/A

Score = 0

Hazardous Waste Quantity

Total quantity of hazardous waste:

N/A

Score = 0

Basis of estimating and/or computing waste quantity:

N/A

* * *

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.

11,259 people (based on 3.8 persons per residence for 2,963 residences) [21]. The highest score was obtained for 0 to 4 mile radius [2].

Score = 21

Distance to a Sensitive Environment

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

N/A

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

None located within 1 mile [10]

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

None located within 1 mile [17]

Land Use

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

None located within 1 mile [5 and 10]

Score = 0

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

1,250 feet [10]

Score = 3

Distance to residential area if 2 miles or less:

300 feet [10]

Score = 3

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

Agricultural land is immediately adjacent to site [18].

Score = 3

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

N/A

Score = 0

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

No [19 and 20]

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 an 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 observed incident on record. Sediment samples contain no hazardous compounds [1].

Score = 0

2 ACCESSIBILITY

Describe type of barrier(s):

Barriers do not completely surround the facility [5].

Score = 3

* * *

3 CONTAINMENT

Type of containment, if applicable:

Landfill is adequately covered except for the working area slope facing northeast toward the drainage swale [5].

Score = 15

* * *

4 WASTE CHARACTERISTICS

<u>Toxicity</u>

Compounds evaluated:

N/A

Compound with highest score:

N/A

Score = NS

5 TARGETS

Population within 1-Mile Radius

570 people are estimated to live within 1 mile of the site [10]. Population is based on 3.8 persons per house.

Score = 2

Distance to critical habitat (of endangered species)

None within 1 mile [17]

Score = 0

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	Analytical Results - Laboratory	V-33
2	HRS Users Manual	V-39
3	Appendix B - Boring Logs	B-7
4	Dilling Summary Report	B-7
5	Updated Work Plan	A-1
6	Town of Saugerties Landfill Report	D-9
7	NYSDEC Hazardous Waste Disposal Sites Report	D-36
8	NYSDOH 1982 New York State Atlas of Community Water System Sources	V-41
9	Letter dated May 29, 1978 from A. Rossi, Consulting Engineer to D. Palen, Ulster County Department of Health	D-9
10	USGS 1980 Photo Revised. 7.5 Minute Topographic Series: Woodstock Quad.	I-4
11	Letter to George Sisco from W. L. Going - March 7, 1986	V-45
12	EA Science & Technology, Communications Record	V-47
13	EA Science & Technology, Phase I Report	
14	NYSDEC 1980. Hazardous Waste Disposal Site Report, March 25	D-38
15	E&A Science & Technology, Communication Record	V-48
16	New York State Freshwater Wetlands Map, Ulster County, Map 12 of 37, Woodstock Quad, 1988	V-49

TABLE IV-1 - ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES - ORGANICS
(All data in microgram/liter)

SAUGERTIES LANDFILL

Compound	GW-1	GW-2	GW-3	GW-4	GW-5	Method Blank	Field Blank
1,1,1-trichloroethane	ND	ND	ND	6	ND	ND	ND
Bis (2-ethylhexyl) phthalate	30 B	43 B	77 B	54 B	120 B	45	35 B

- ND - Not detected
- GW-5 is duplicate of GW-2
- B - Contaminant also detected in Method Blank

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

SAUGERTIES LANDFILL

Analyte	GW-1	GW-2	GW-3	GW-4	GW-5	Field Blank
Aluminum	1,210	3,320	377	1,160	3,650	ND
Barium	88.0 B	240	189 B	30.0 B	206	7.0 B
Beryllium	6	6	6	5	5	ND
Calcium	4,020 B	56,900	52,000	17,300	52,700	ND
Iron	1,860	5,500	11,500	1,480	6,180	40 B
Magnesium	716 B	13,200	9,770	3,300	13,000	235 B
Manganese	38.0	1,660	7,160	331	1,250	5.0 B
Selenium	2	ND	ND	ND	ND	ND
Sodium	79,400	15,200	61,700	7,310	12,700	627 B
Zinc	29.0	24.0	23.0	8.0 B	32.0	5.0 B

- GW-5 is duplicate of GW-2
- B - Detected at less than Contract Required Detection Limit (CRQL), but greater than Instrument Detection Limit (IDL)

TABLE IV-3 - ANALYTICAL RESULTS FOR SURFACE WATER - ORGANICS
(All data in microgram/liter)

SAUGERTIES LANDFILLL

Compound	SW-1	SW-2	Method Blank
Bis (2-ethylhexyl) phthalate	ND	24 B	10
Aldrin	0.05	ND	ND
Endosulfan I	ND	0.10	ND
4,4'-DDT	ND	0.20 B	0.10

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

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

SAUGERTIES LANDFILLL

Analyte	SW-1	SW-2
Aluminum	11,200	10,100
Antimony	46.0	46.0
Arsenic	6.0	4.0
Barium	304	103
Beryllium	2.0	1.0
Cadmium	7.0	5.0
Calcium	99,000	37,500
Chromium	20	10
Cobalt	22.0	27.0
Copper	29.0	32.0
Iron	27,300	19,700
Lead	80.0	39.0
Magnesium	33,000	9,140
Manganese	3,600	1,490
Mercury	0.2	0.2
Nickel	34.0	39.0
Potassium	59,300	4,600
Selenium	1.0	1.0
Silver	10.0	10.0
Sodium	127,000	10,500
Thallium	4.0	2.0
Vanadium	43.0	33.0
Zinc	278	757
Cyanide	10.0	10.0

• NS - No standards

TABLE IV-5 - ANALYTICAL RESULTS FOR SEDIMENT - ORGANICS
(All data in microgram/kilogram)

SAUGERTIES LANDFILLL

Compound	SD-1	SD-2	Method Blank
Methylene chloride	37	25	ND
Acetone	52	43	ND
1,1,1-trichloroethane	12	8	ND
Bis (2-ethylhexyl) phthalate	4,100 B	1,600 B	270

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

TABLE IV-6 - ANALYTICAL RESULTS FOR SEDIMENT SAMPLES - TCL INORGANICS
(All data in milligram/kilogram)

SAUGERTIES LANDFILL

Analyte	SD-1	SD-2
Aluminum	11,000	11,500
Antimony	14.8	10.6
Arsenic	3.9	0.9
Barium	75.2	46.0
Beryllium	1.9	1.4
Cadmium	8.4	4.4
Calcium	3,700	4,230
Chromium	16.2	16.1
Cobalt	18.1	13.1
Copper	10	7.6
Iron	37,000	25,300
Lead	31	20.5
Magnesium	5,320	5,600
Manganese	643	549
Mercury	0.11	ND
Nickel	30.3	36.8
Potassium	808	621
Sodium	2,910	1,990
Vanadium	22.6	18.4
Zinc	237	193

• ND - Not detected

REF. 2

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual
(HW-10)

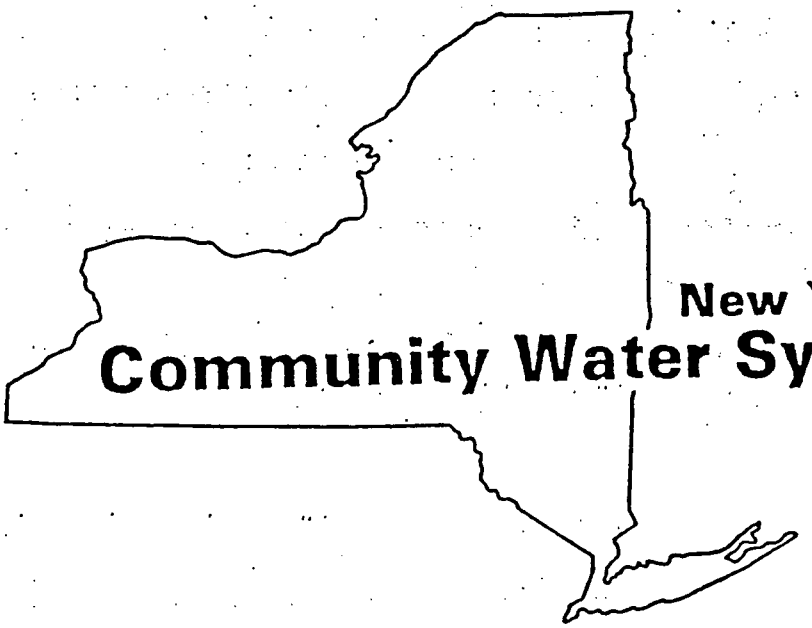
Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

TABLE OF CONTENTS

REF. 8



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

ULSTER COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
1	Big Indian Water Association	25	Wells (Springs)
2	Bright Acres Water Company	54	Wells
3	Ellenville Village	4400	Lake Maratanza
4	Fern Hill Water Association	24	Wells
5	Granite Estates Water Company	45	Wells
6	Halcyon Park Water District	297	Wells
7	Heritage Estates Water Company	24	Wells
8	High Falls Park Water Company	280	Wells
9	High Ridge Water Company	65	Wells
10	Highland Water District	3568	Hudson River, Reservoirs
11	Hillside Acres Water Company	484	Wells
12	Hudson Hills Water Company	168	Wells
13	Hudson Valley Water Company #1	790	Wells
14	Hudson Valley Water Company #3	56	Wells
15	Hudson Valley Water Company #4	350	Wells
16	Hurley Water Company	1529	Wells
17	Hutterian Society of Brothers	400	Wells, Well (Springs)
18	Joint Venture Water Company	19	Wells
19	Kerhonkson Heights Association	62	Wells (Springs)
20	Kerhonkson Water District	650	Kerhonkson Reservoir, Wells
21	Kingston City Water District	24000	Cooper Lake
22	Kingsvale Water Company	434	Wells
23	Leewood Knolls Water Company	105	Wells
24	Linden Hills Water Company	27	Wells
25	Marlboro Water District	3500	Marlboro Reservoir
26	Mt Valley Acres Water Company	35	Wells
27	New Paltz Village	8500	Reservoirs
28	New York City - Aqueduct System (Page 76)		Ashokan Reservoir (Catskill Aqueduct System) Rondout Reservoir (Delaware Aqueduct System)
29	Phoenicia Water District	650	Reservoir, Wells
30	Pine Hill Water Company	210	Wells, Wells (Springs)
31	Piney Point Water Company	40	Wells
32	Port Ewen Water District	4500	Hudson River, Wells
33	River Road Water Supply	39	Wells
34	Rolling Meadows Water Company	1945	Wells
35	Rosendale Plains Homeowners	160	Wells
36	Rosendale Water District	1200	Still Pond, Reservoirs
37	Saugerties Village	6400	Plattekill Creek Reservoir
38	Sylvan Glade Water Company	80	Wells
39	Tillson Estates Waterworks	440	Wells
40	Tiskilwa Water Association	80	Ox Clove Creek Reservoir
41	Ulster Water District	5300	Wells
42	Wallkill Water District	1380	Wells, Wells (Springs)
43	Watchtower Farms	950	Pond
44	Woodstock Water District	4300	Wells
	Non-Municipal Community		
45	Alex Thoben Trailer Park	39	Wells
46	Aloha Home Acres	150	Wells
47	Alpine Heights Trailer Park	60	Wells
48	Blue Stone Acres	180	Reservoir, Wells
49	C K W Trailer Park	15	Wells
50	Cozy Trailer Court	18	Wells
51	Creeklocks Mobile Home Park	NA	Wells
52	Deerhaven Mobile Home Park	111	Wells
53	Denardo Apartments	55	Wells
54	Depew and Harris Trailer Park	96	Wells
55	Diener Trailer Park	30	Wells
56	Division for Youth-Highland Occupational Education	400	Chodikee Lake
57	Dogwoods Mobile Park	72	Wells
58	Dormir Trailer Park	24	Wells
59	Dugue Trailer Park	33	Wells
60	Eastern New York Correctional Facility	700	Reservoir, Wells
61	Ebo Mobile Park	90	Wells
62	Edgar P Elliott Mobile Home Park	42	Wells
63	Every's Trailer Park	NA	Wells
64	Feddes Trailer Park	45	Wells
65	Forest Park Mobile Home Park	546	Wells
66	Gardiner Town House Apartments	85	Wells
67	Georgetown Bluffs	57	Wells

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Non-Municipal Community		
68	Golden Lane Mobile Park	36	Wells
69	H & H Mobile Home Park	132	Wells
70	H E George Trailer Sales	27	Wells
71	Hideway Acres	18	Wells
72	Highland Woods Trailer Park	54	Wells
73	Hilltop Apartments	208	Wells
74	Hudson Valley Estates	120	Wells
75	Larsons Adult Mobile Home Park	36	Wells
76	Longs Trailer Park	45	Wells
77	McDole Mobile Home Park	54	Wells
78	Mirror Lake Trailer Park	NA	Mirror Lake, Wells
79	Modena Country Club Inc	225	Wells
80	Modena Trailer Park	78	Wells
81	Napanoch Trailer Park	39	Wells
82	New Paltz Nursing Home	79	Wells
83	Onteora Lake Park	30	Wells
84	Order of the Holy Cross	25	Wells
85	Phil and Pauls Trailer Park	135	Wells
86	Plattekill Mobile Home Park	24	Wells
87	Quicks Trailer Park	27	Wells (Springs)
88	Randzin Trailer Park	17	Wells
89	Redemptorist Fathers of New York	110	Wells (Infiltration Gallery)
90	Reillys Trailer Park	42	Wells
91	Renaissance Project Inc	75	Wells
92	Rhodes Trailer Park	15	Wells
93	River Road Mobile Home Park	117	Wells
94	River Street Mobile Home Park	45	Wells
95	Robins Trailer Park	45	Wells
96	Robinson's Old Homestead Trailer Park	60	Wells
97	Rolling Acres Mobile Park	120	Wells
98	Rosemarie Mobile Home Park	51	Wells
99	Sagarese Trailer Park	25	Wells
100	Saint Cabrini Home Inc	140	Wells, Wells (Springs)
101	Santa Maria-Christian Brothers	20	Wells, Well (Springs)
102	Sawkill Trailer Park	186	Wells
103	Schaals Trailer Park	42	Wells
104	Shady Acres Mobile Home Park	135	Wells
105	Skytop Apartments	140	Wells
106	Sleepy Hollow Trailer Park	44	Wells
107	Strawberry Acres Trailer Park	36	Wells
108	Swan Acres Mobile Home Park	117	Wells
109	The Glen Mobile Home Park	96	Wells
110	The Greenwood Rehabilitation Center Inc	210	Wells
111	Timberbrook Mobile Home Park	54	Wells
112	Timothy Estates Apartments	35	Wells
113	Treeline Trailer Park	51	Wells
114	Trnka Farms Mobile Home Park	138	Wells
115	Trout Brook Trailer Park	36	Wells
116	Ulster Landing Mobile Court	84	Wells
117	Valley Gardens Trailer Park	15	Wells
118	Wallkill Correctional Facility	700	Wells
119	Werners Trailer Park	30	Wells
120	Winters Trailer Park	27	Wells
121	Zolota Osin Inc	101	Wells

REF. 11

Appendix 1.5-2

RECEIVED MAR 19 1986

P 1 of 2

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.
R.D. 2, Box 91 • Goshen Turnpike • Middletown, New York 10940
Telephone: (914) 692-6706

7 March 1986

Mr. George A. Sisco
District Consvst.
Ulster SWCD
380 Washington Avenue
UPO Box 97
Kingston, New York 12401

Dear Mr. Sisco:

EA Science and Technology, a Division of EA Engineering, Science, and Technology Inc., is conducting Phase I engineering investigations and assessments at inactive hazardous waste sites for the New York State Department of Environmental Conservation--attached is a copy of an authorization letter signed by Commissioner Williams. We need a particular piece of information which we believe your office has access to. Specifically, our assessments must include the number of acres of land irrigated with water (surface or ground water) drawn from the area within a 3-mile radius of each site.

Please examine the locations of sites in your county (site list and locator maps attached) and determine whether, to the best of your knowledge, there are any sources of irrigation water within approximately 3 miles of these sites... and estimate the number of acres of land irrigated by these sources. You could indicate the numbers of acres on a copy of the attached site list and simply return it to us.

This request is based on recent conversations with several Soil Conservation Service (SCS) offices which have indicated that SCS conducts an agricultural information survey periodically, and would in most cases have some information regarding acres irrigated. If your particular office believes there are no irrigated areas near these sites, or if you cannot estimate the number of acres involved, please reply in some fashion so that we can produce a reference to our attempt to obtain this information.

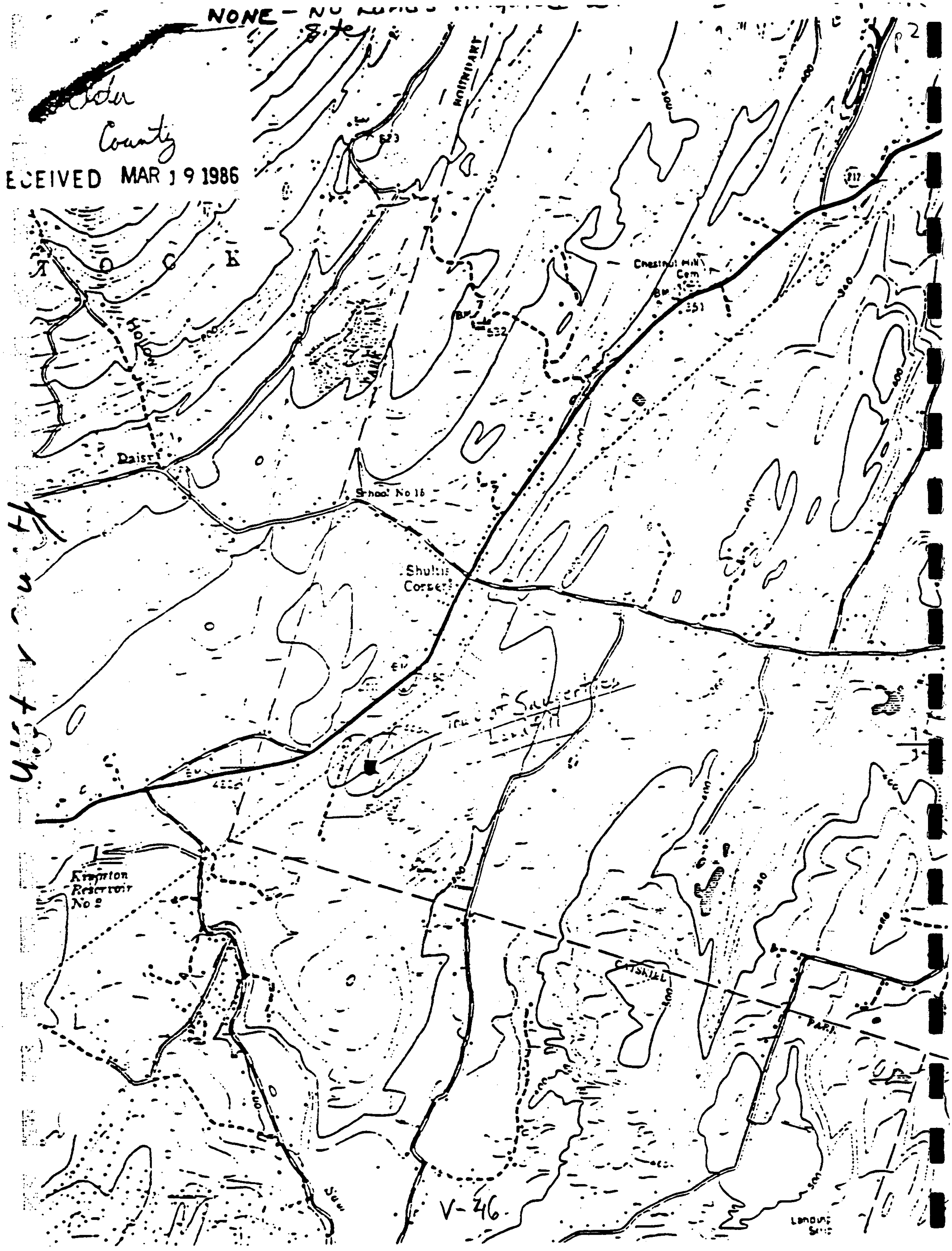
Thank you very much for your cooperation. If you have questions, please do not hesitate to call at the above number.

Sincerely yours,

William L. Going

William L. Going
Manager, Environmental
Assessment Studies

WLG/rlc
Enclosure



NONE
County
ECEIVED MAR 19 1986
p 2
Chestnut Hill
Cem
351
532
Daisy
School No 16
Shultis
Corners
Town of Saugerties
Kingston
Reservoir
No 2
CATSKILL
PARK
V-46

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

REF. 12

Appendix 1.5-4

p 1 of 1

COMMUNICATIONS RECORD FORM

Distribution: ( ) Town of Saugerties LF, ( ) _____
( ) _____, ( ) _____
( ) Author

Person Contacted: Mr George Sisco Date: 11/3/86

Phone Number: _____ Title: District Conservationist

Affiliation: Ulster SWCD Type of Contact: phone

Address: 380 Washington Ave Person Making Contact: L Rogers
Kingston, NY 12401

Communications Summary: The nearest agricultural land is located at the intersection of Sawkill Rd & Route 212.

(see over for additional space)

Signature: Lou Rogers

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

REF. 15
Appendix 1.5-3
p 1 of 1

COMMUNICATIONS RECORD FORM

Distribution: ( ) T. of Saugerties L.F., ( ) _____
( ) _____, ( ) _____
( ) Author

Person Contacted: Mr Wayne Elliot Date: 11/3/86

Phone Number: (914)255-5453 Title: Regional Fisheries Manager

Affiliation: DEC Region 3 Type of Contact: phone

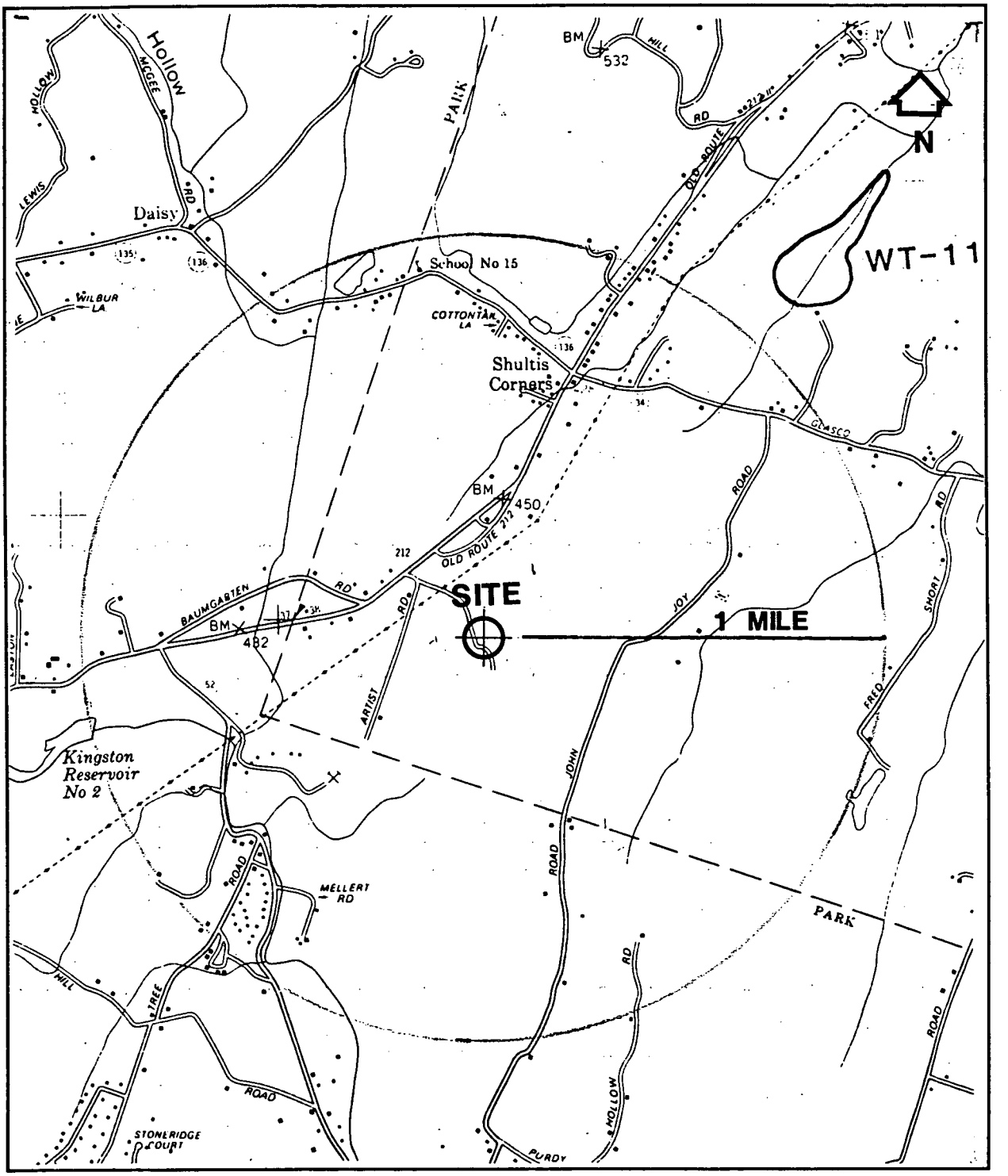
Address: 21 South Putt Corners Road Person Making Contact: L. Rogess
New Paltz, NY

Communications Summary: Mr Elliot stated that the Saw Kill is used frequently for fishing & is considered a recreational resource.

(see over for additional space)

Signature: Lan Rogers

REF. 16



FIGURE

SCALE 1 : 24,000

NEW YORK STATE FRESHWATER WETLANDS MAP (1988)

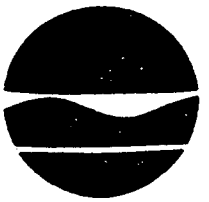
ULSTER COUNTY MAP 12 OF 37

SITE: SAUGERTIES LANDFILL

GIBBS & HILL, INC.

D.17

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.

*Homer, Lafko, Saugerties, New Scotland, Hoosick, and GAF.

REF. 18

Telephone Conversation Record

Date: 7/31/89

Time: 9:20 AM

Call by: Michael Valentino (Name) of Gibbs & Hill, Inc. (Company)

Answer by: Harold Hogan (Name) of Ulster Cooperative Extension (Company)

Contract No: _____

Subject discussed: Agricultural Land

SUMMARY OF DISCUSSION, DECISIONS AND COMMITMENTS

Harold Hogan stated that John Snyder's Hay Farm is adjacent to the Saugerties Landfill site.

MV:aaf

federal register

Tuesday
February 7, 1984

Part III

Department of the Interior

National Park Service

National Registry of Natural Landmarks; Annual Supplemental Listing of Natural Landmarks; Notice

V-53

which constitute a milestone in the evolution of plant life. (April 1967) Owner: Private

Seneca County

*MONTEZUMA MARSHES—Montezuma National Wildlife Refuge, four miles northeast of Seneca Falls. A marsh dominated by broadleaved cattail. A small 100-acre area within the site is one of the best examples of undisturbed swamp woodlands in New York or New England. (May 1973) Owner: Federal

Suffolk County

*BIG REED POND—Three miles west of Montauk Point. The freshwater pond supports a herd of whitetail deer and other wildlife, and has no extensive man-made development along its shoreline. (May 1973) Owner: County

GARDINER'S ISLAND—100 miles east of New York City, in Block Island Sound off Long Island. The island is a breeding ground for osprey and is an important habitat of other fauna, particularly waterfowl and shore birds. (April 1967) Owner: Private

*LONG BEACH, ORIENT STATE PARK—One mile south of Orient. One of the finest remaining examples in New York of a sandgravel spit illustrating succession from salt marsh to maritime forest. The area contains a breeding colony of common and roseate terns, species which are becoming scarce in other North Atlantic breeding grounds. (April 1980) Owner: State

Tompkins County

*McLEAN BOGS—One and one-half miles east-southeast of McLean. The bogs contain rare plant species and one of the best examples of a northern deciduous forest in New York. (May 1973) Owner: Private

Ulster County

*ELLENVILLE FAULT-ICE CAVES—Five miles southeast of Ellenville. The largest known exposed fault system in the United States, along with a series of ice caves formed from fault debris. (November 1967) Owner: Municipal

Wayne County

*ZURICH BOG—Nine miles north of Newark. A good example of northern bog and bog forest vegetation that is uncommon in north-central New York State. (May 1973) Owner: Private

Westchester County

*MIANUS RIVER GORGE—Two miles south of Bedford. An exceptional illustration of piedmont physiography and geomorphology. It contains an excellent climax hemlock forest. (March 1964) Owner: Private

NORTH CAROLINA (11)

Alleghany County

*STONE MOUNTAIN (extends into Wilkes County)—Stone Mountain State Park, nine miles southeast of Sparta. The best example of a monadnock in massive granite in North Carolina. Unique, endemic plants persist on the granite outcrops. (May 1974) Owner: State

Ashe County

LONG HOPE CREEK SPRUCE BOG (extends into Watauga County)—Ten miles north-northeast of Boone. One of the rarest plant communities of North Carolina and the Southeast, including American yew and buckbean. (May 1974) Owner: Private

*MOUNT JEFFERSON STATE PARK—One mile east of West Jefferson. The mountain's uppermost forest is virtually undisturbed northern red oak and represents one of the finest remaining examples of oak-chestnut forest in the Southeast. (May 1974) Owner: State

Beaufort County

GOOSE CREEK STATE PARK NATURAL AREA—Ten miles east of Washington. An excellent example of a gently sloping mainland undergoing rapid ocean transgression. Contains the following diverse ecological units: brackish creeks and marshes, marsh transition areas, river swamp forest, and low pine forests. (April 1980) Owner: State

Brunswick County

GREEN SWAMP—Nine miles north of Supply. The largest and most unique mosaic of wetland communities in the Carolinas. The site is also a refuge for rare animal species. (May 1974) Owner: Private

Dare County

NAGS HEAD WOODS AND JOCKEY RIDGE—One and one-half miles northwest of Nags Head on Bodie Island. The site illustrates the entire series of dune development and plant succession from shifting open dunes to forested stabilized dunes. (May 1974) Owner: State, County, Municipal, Private

Davie County

*ORBICULAR DIORITE—An unusual plutonic igneous rock consisting of hornblende, pyroxene, and feldspars. (August 1980) Owner: Private

Onslow County

BEAR ISLAND—Hammocks Beach State Park, 4 miles south-southeast of Swansboro. The area contains one of the largest and best examples of coastal aeolian landforms in the Atlantic Coastal Plain. Dune movement has created a dynamic landscape of outstanding scenic beauty. (April 1980) Owner: State

Surry County

*PILOT MOUNTAIN—Pilot Mountain State Park, 3 miles south of Pilot Mountain. A classic monadnock that harbors disjunct Blue Ridge Mountain vegetation. (May 1974) Owner: State

Wake County

*PIEDMONT BEECH NATURAL AREA—William B. Umstead State Park, 7 miles northwest of Raleigh. Perhaps the finest example of mixed mesophytic forest in the eastern Piedmont of North Carolina, with unusually fine climax stands of beech in portions of the site. (May 1974) Owner: State

Watauga County

LONG HOPE CREEK SPRUCE BOG (see *Ashe County*)

Wilkes County

*STONE MOUNTAIN (see *Alleghany County*)

Yancey County

*MOUNT MITCHELL STATE PARK—20 miles northeast of Asheville. Mount Mitchell (6,684 feet above sea level) is the highest mountain in the eastern half of the United States. The park has the most extensive stand of Fraser's fir remaining in America. (May 1974) Owner: State

NORTH DAKOTA (4)

Billings County

*TWO-TOP MESA AND BIG TOP MESA—14 miles northwest of Fairfield. Both mesas, one mile apart, are in a badlands terrain of sandstones, siltstones and clay. The mesas are characterized by an unbroken cover of grass on flat relief. (October 1965) Owner: Federal

Cavalier County

*RUSH LAKE—Five miles south of Hannah. A large, shallow, essentially undisturbed prairie pothole lake that is an important staging area for waterfowl. (May 1975) Owner: Private

Kidder County

SIBLEY LAKE—five miles north of Dawson. A large, permanent alkaline lake, it provides a breeding and resting area for one of the largest and most diverse waterbird populations found in pothole lakes in the State. (May 1975) Owner: State, Private

Stutsman County

FISCHER LAKE—25 miles northwest of Jamestown. Highly representative of the glacial moraine and pitted outwash plain surface of North Dakota. The area contains relatively undisturbed grasslands and lush prairie woodlands. (April 1980) Owner: State, Private

OHIO (23)

Adams County

*BUZZARDROOST ROCK-LYNX PRAIRIE-THE WILDERNESS—25 miles west of Portsmouth. The site contains a number of different plant associations, including many rare or uncommon species. Has an almost 50-year history of scientific observations. (April 1967, December 1974, February 1980) Owner: Private

SERPENT MOUND CRYPTOEXPLOSIVE STRUCTURE (extends into Highland and Pike Counties)—31 miles southwest of Chillicothe. A structure of undertermined origin exposed by differential erosion. It is the smaller of two such outstanding cryptoexplosive structures in the Interior Low Plateaus and is the classic American example. (February 1980) Owner: Private

Ashland County

*CLEAR FORK GORGE—Mohican State Park, four miles south of Loudenville. A

WASO-34
(May 1987)

D. 20

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-55

(Rosendale Library)
Main St.
Reference No. 86002511

Binnewater Historic District
Sawdust Ave., Breezy Hill and Binnewater Rds.
Reference No. 82001272

Perrine's Bridge
Off U.S. 87 over Wallkill River
Reference No. 73001281

Saugerties

Loerzel Beer Hall
(The Brewery)
213 Partition St.
Reference No. 84003234

Main-Partition Streets Historic District
Roughly bounded by Main, Partition, Market and Jane Sts
Reference No. 82003411

Saugerties Lighthouse
[Hudson River Lighthouses TR]
Hudson River at Esopus Creek
Reference No. 79001642

Trumpbour Homestead Farm
1789 Old Kings Hwy.
Reference No. 85002422

Wynkoop House
NY 32
Reference No. 84003237

Shawangunk

Decker, William, House
[Shawangunk Valley MRA]
New Prospect Rd.
Reference No. 83001815

Dill Farm
[Shawangunk Valley MRA]
Off Goebel Rd.
Reference No. 83001816

Jansen, Johannes, House and Dutch Barn
[Shawangunk Valley MRA]
Decker Rd.
Reference No. 83001818

Jansen, Thomas, House
[Shawangunk Valley MRA]
Jansen Rd.
Reference No. 83001817

Miller's House at Red Mills
[Shawangunk Valley MRA]
Red Mills Rd. and Wallkill Ave.
Reference No. 83001819

Pearl Street Schoolhouse
[Shawangunk Valley MRA]
Awosting and Decker Rds.
Reference No. 83001820

Terwilliger House
[Shawangunk Valley MRA]
Hoagerburgh Rd.
Reference No. 83001821

Stone Ridge

Main Street Historic District
US 209
Reference No. 88000666

Wallkill Vicinity

Crowell, J. B., and Son Brick Mould Mill Complex
Lippencott Rd.
133 Warren St.

SAUGERTIES LANDFILL

USGS HOUSE COUNT

Quadrant[1]	0-1	1-2	2-3	3-4
I	63	87	169	245
II	30	115	258	43
III	38	367	513	364
IV	19	68	54	494
Subtotal	150	637	994	1,146
Residence	0-1	0-2	0-3	0-4
Total	150	787	1,781	2,927
Population[2]	570	2,991	6,768	11,122
Trnka Park[3]	___	138	138	___
Total	570	3,129	6,906	11,260

(1) A number of residences for each radius are determined by overlaying a coordinate 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) Total population within 3-mile radius = 6,906. Hudson Valley Water Company No. 4 serves 350 people. (This number is included in house count.) Trnka Farms Mobil Park non-community water system serves 138 people (not included in house count). The remaining 6,418 people are on private wells.

E. EPA SITE INSPECTION FORM

Site Inspection Report

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

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D9805057636

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Town of Saugerties Landfill	Route 12				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Saugerties	NY	12477	Ulster		

09 COORDINATES LATITUDE 42° 02' 30" | LONGITUDE 74° 04' 30"

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 / 26 / 88 (MONTH DAY YEAR)

02 SITE STATUS: ☒ ACTIVE ☐ INACTIVE

03 YEARS OF OPERATION: 1969 (BEGINNING YEAR) present (ENDING YEAR) ☐ UNKNOWN

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

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Alex Kostic	Environmental Engineer	G&H	(212) 216-6630
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Michael Valentino	Geologist	G&H	(212) 216-6289
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Mrs. G. Shovel	Town Supervisor	Town of Saugerties	(914) 246-2809
		Town Hall	( )
		Main Street	( )
		Saugerties, NY 12477	( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	8:30 AM	Sunny, warm, 92°

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Norman Hinsey		(212) 216-7839

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Michael Valentino		G&H	(212) 216-6289	8 / 4 / 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
NY	D9805057636

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [X] C. SLUDGE
- [ ] D. OTHER (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

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

TONS: Unknown
CUBIC YARDS:
NO. OF DRUMS:

03 WASTE CHARACTERISTICS (Check all that apply)

- [ ] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] 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	55	yd^3/yr	For several years, received wastewater treatment sludge from Ferroxcube, local electronics manufacturer. Sludge contained iron, zinc oxide, and manganese oxide. Also, received 750 tons/yr grinding swarf (components unknown) and 350 tons/yr grinding swarf (95 percent iron oxide with oil and water).
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

Unknown

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

V. FEEDSTOCKS (See Appendix for CAS Numbers)

Not applicable

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)

EA Site Inspection.

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
NY	D9805057636

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 6,906 — 04 NARRATIVE DESCRIPTION

Ground water in the aquifer of concern has been developed by the Hudson Valley Water Company No. 4, Trnka Farms Mobile Home Park, and numerous private water supply sources.

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

The nearest surface waterbody, the Saw Kill, is used for recreational purposes only.

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

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

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

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

None reported or known.

01 ☒ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 6,906 — 04 NARRATIVE DESCRIPTION

Limited to the population served by ground water from the aquifer of concern within a 3-mi radius of the site.

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

None known or reported.

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None none or reported.

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
NY	D9805057636

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

None known or reported.

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

None known or reported.

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

None known or reported.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 6,906 — 04 NARRATIVE DESCRIPTION

The landfill is unlined. The depth of the landfill is only a few ft above the water table.

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

None known or reported.

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

None known or reported.

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

None known or reported.

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

None known or reported.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 6,906

IV. COMMENTS

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

USGS. 1980 photorevised. 7.5-Minute Planimetric Series. Woodstock Quad.
NYSDOT. 1973. 7.5-Minute Planimetric Series. Bearsville Quad.
Appendixes 1.1-2, 1.1-3, 1.1-4, 1.1-6, 1.1-7, 1.3-2, and 1.3-3.

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
NY	D9805057636

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)	0549	3/14/79	3/14/82	ECL Article 27, Title 5,
☐ H. LOCAL (Specify)				Part 360.
☐ 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	Unknown	
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

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 (Specify)

05 OTHER

- ☒ A. BUILDINGS ON SITE

06 AREA OF SITE

15 (Acres)

07 COMMENTS

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 landfill is unlined and has no leachate collection system.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☐ NO

02 COMMENTS

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

Appendixes 1.1-2 and 1.1-3.
EA Site Inspection

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
NY	D9805057636

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	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. 2.9 (mi)
B. 0.09 (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 6,906

03 DISTANCE TO NEAREST DRINKING WATER WELL 0.09 (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
1.14 (ft)	Radial	1.14 (ft)	(gpd)	☒ YES ☐ NO

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

Ground water in the aquifer of concern has been developed by the Hudson Valley Water Company No. 4, Trnka Farms Mobile Home Park, and numerous private water supply sources.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS	☐ 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
Saw Kill	☐	0.19 (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. 570 NO. OF PERSONS	B. 3,129 NO. OF PERSONS	C. 6,906 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.09 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 787

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.09 (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)

Site is located in a rural area with medium density residential developments to the west and southwest.

Within a 3-mile radius, 6,906 are known to be using the ground water supplies.

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
NY	D9805057636

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	
approx. 0 (ft)	Unknown (ft)	Unknown	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
12 (in)	2.5 (in)	13 %	SW/NW	<1 %

09 FLOOD POTENTIAL: N/A
SITE IS IN _____ YEAR FLOODPLAIN

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

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. _____ (mi)	B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

_____ (mi)

ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO: COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. None (mi)	B. 0.09 (mi)	C. N/A (mi)	D. Adjacent (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is surrounded by hilly topography and has an elevation of approximately 480 ft above mean sea level. Large areas of the landfill have a slope of 1-3 percent, however, working faces of the landfill have slopes ranging from 20 to 45 percent. Two drainage ditches to the north and south of the landfill divert runoff away from the landfill operation. The surface runoff follows the ditchline which runs to the southwest. Regional slope of terrain in the immediate vicinity is to be the south-southwest at 1 percent.

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

Gibbs & Hill Permeability Tests
Phase I Report, EA Science and Technology, 1987

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D9805057636

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	4	H2M Laboratory	Available
SURFACE WATER	2	H2M Laboratory	Available
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	2	H2M Laboratory	Available
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
PID	No readings above background
pH	Groundwater Samples
Conductivity	Groundwater Samples
Temperature	Groundwater Samples

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF Gibbs & Hill - 11 Penn Plaza, NY, NY 10001
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

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

Gibbs & Hill Site Reconnaissance Report
Phase I Report, EA Science and Technology, June, 1987

EPA FORM 2070-13 (7-81)

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

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D9805057636

II. CURRENT OWNER(S) / **PARENT COMPANY** (If applicable)

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
Town of Saugerties			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
Route 212			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Saugerties	NY	12477			

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	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Charles Keefe			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Unknown			

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

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
NY	D9804047636

II. CURRENT OPERATOR *(Provide if different from owner)*

01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY *(If applicable)*

10 NAME	11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

III. PREVIOUS OPERATOR(S) *(List most recent first; provide only if different from owner)*

01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES *(If applicable)*

10 NAME	11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE
10 NAME	11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE
10 NAME	11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

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

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
NY	D9805057636

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Ferroxcube Corporation			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
P.O. Box 359			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Saugerties	NY	12477			

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

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)

Appendixes 1.1-6 through 1.1-8

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: D9805057636

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED | 02 DATE | 03 AGENCY
04 DESCRIPTION
No documentation of any action found

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ D. SPILLED MATERIAL REMOVED | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ E. CONTAMINATED SOIL REMOVED | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ F. WASTE REPACKAGED | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ G. WASTE DISPOSED ELSEWHERE | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ H. ON SITE BURIAL | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ I. IN SITU CHEMICAL TREATMENT | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ J. IN SITU BIOLOGICAL TREATMENT | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ K. IN SITU PHYSICAL TREATMENT | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ L. ENCAPSULATION | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ M. EMERGENCY WASTE TREATMENT | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported

01 ☐ N. CUTOFF WALLS | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ P. CUTOFF TRENCHES/SUMP | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

01 ☐ Q. SUBSURFACE CUTOFF WALL | 02 DATE | 03 AGENCY
04 DESCRIPTION
None reported.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D9805057636

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None reported.

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

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

Gibbs & Hill Site Reconnaissance.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D9805057636

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☐ NO

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

None.

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

Gibbs & Hill Site Reconnaissance.

APPENDIX A

WORK PLAN UPDATE

Work Plan Update

Phase II Investigation

Saugerties Landfill
Site No. 356003

Submitted to **NYSDEC**

October 27 ,1988

Gibbs & Hill, Inc.

CONTENTS

I. DEC WORK PLAN

Work Plan

Saugerties Landfill #356003
Town of Saugerties, Ulster County

GENERAL:

Based on this workplan for which there has already been central office comments and site visits, a costing sheet is to be developed and attached by the consultant. This workplan and associated costs will be made part of this cost plus fixed fee contract with a limiting upset figure. Unless otherwise stated in this workplan the work shall conform to the concept of the Generic Workplan - State Superfund Program - Phase II Investigations and Exhibit 3. Schedule 4 of the contract document.

A copy of this work plan and Exhibits 1 and 3 of the contract must be taken to the field by the consultant during the Phase II field activities. The representative must display, through his action, familiarity with the provisions of the work plan and exhibits. Failure to provide any of the above documents at the NYSDEC representatives request or for the consultant to show inadequate comprehension of their contents are sufficient grounds for NYSDEC to halt the Phase II field work.

INTRODUCTION:

A Phase I investigation (4th round) of the site was performed by EA Science and Technology, Inc., in September 1987.

The town of Saugerties Landfill site is located on Route 212, south of Shultis Corners, in Ulster County, at an elevation of approximately 480 ft above mean sea level. Large areas of the landfill have a slope of 1-3 percent, however, working faces of the landfill has slopes ranging from 20 to 45 percent. Two drainage ditches to the north and east of the landfill divert runoff away from the present landfill operation. Regional slope of terrain in the immediate vicinity is to the south-southwest at <1 percent.

An office/garage is located in the northern part of the 44-acre site. The current working area is located in the southern section which includes a tire pile located along the southwest edge. Shale is mined for use at the landfill from the northeastern part of the site, various materials such as glass, paper, and tin entrance of the landfill, but the property is not entirely fenced and pedestrain access is not restricted.

The site is located in a rural area with low to medium density residential areas in the surrounding vicinity. The nearest residence is located outside the operation's gate, adjacent to the original dump area. The nearest commercial

operation is located approximately 250 ft west of the original dump area. The nearest surface water is a tributary of the Saw Kill and is located approximately 1,000 ft to the south of the southern most edge of the landfill. The nearest groundwater well is located on the landfill property at the office/garage approximately 200 ft southeast of the original dump area. This well provides drinking water to the office/garage.

The site is directly underlain by a thin layer of glacial till overlying layered shale and sandstone of the Middle Devonian Age Plattekill and Ashokan Formations. Shale is being excavated at the Town of Saugerties landfill to a depth of <20 ft. Brenner and Rossi, consulting engineers for the Town, report approximatley 1 ft of overburden overlies the shale. Therefore, there is a good potential that landfilled material was deposited directly on bedrock. Within a 3-mi radius of concern, the bedrock aquifer has been developed by the Hudson Valley Water Company No. 4, Trnka Farms Mobile Home Park, and private water supply sources. Because the overburden is absent or too thin to supply sufficient quantities of water, the shale and sanstone aquifer is considered the aquifer of concern. The reported depth to ground water in a drinking water well at the Town of Saugerties landfill is 20 ft. During the EA site inspection, depth to water in the southern monitoring well was measured at 4 ft below grade.

OBJECTIVE:

Data supplied by the Phase I investigation was adequate to perform a draft HRS score, however, releases to groundwater and surface water must be confirmed by the placement of wells and the taking of samples. The objective of this Phase II investigation is to collect the information required to classify the site for further action and to develop a final HRS score. This includes collecting the field data necessary to identify the occurrence and characteristics of contamination and if a release of contaminants from the site has occurred. This information will be used to determine if any imminent and/or significant environmental or health hazard exists. Specifically, these objectives will be accomplished through the drilling of test borings, installation of groundwater monitoring wells, and sampling and analysis of groundwater, surface water, soil, wastes, and sediments (where any or all of these media are applicable).

For the purposes of report preparation, the consultant is to compile all data available from NYSDEC. This includes current file information as well as the Phase I report, which contains a record search of various other agencies.

SITE RECONNAISSACE:

A site visit was conducted in Spring of 1987 by NYSDEC personnel. The site survey provided information necessary for the proper development of the Phase II workplan. The site and surrounding terrain were surveyed for possible and probable access difficulties, preliminary siting of groundwater monitoring wells, tentative locations for surface water, soil, leachate, and/or waste samples. This information is depicted in Figure 2.

During site reconnaissance ambient air conditions were monitored with a photoionization detector and used to determine the level of protection that will be necessary for health and safety concerns.

Exact location of all buried power lines, underground gas lines, water mains, sewage pipes, and storm pipes must be obtained by the consultant from the appropriate utility and/or municipal department prior to the arrival of the drill rig and commencement of drilling. All due caution must be exercised by the driller with respect to overhead power lines, telephone lines and/or cables. The exact location of the monitoring well locations will be determined by the Department oversight personnel and the consultants representative. NYSDEC will obtain permission for site access at least ten (10) days prior to field work being started.

FIELD INVESTIGATION:

The project has been subdivided into specific tasks. Table 1 briefly summarizes each task. Field efforts required to complete this investigation are described herein:

Geophysical

The geophysical survey is to be specified in detail by the consultant. If geophysics is to be performed at the site, the consultant must determine the best geophysical method for meeting the goals of the investigation. Those goals in general are as follows:

- to determine existence of contaminant plumes
- to optimize location and number of monitoring wells
- to reduce risks associated with drilling into unknown terrain and waste
- to reduce overall project time and cost, and to improve accuracy of an confidence in the project
- thickness of and depth to layers of soil and rock
- depth to water table
- existence of buried waste and its vertical and horizontal boundaries
- determination of lateral and vertical anomalies
- determining direction of groundwater flow

All geophysical data must be reduced by the consultant, analyzed and made available to the Bureau for review prior to installation of monitoring wells. The findings of the geophysical survey must be used to determine the best location of wells, i.e. in the contaminated plumes, and to select other environmental sampling locations.

Terrain conductivity may be useful at the site to search for conductive anomolies; however, because bedrock is relatively close to the surface in some areas, this method of geophysics may not be cost-effective. Resistivity may be an alternative, but must be decided by the consultant.

Test Boring and Observation Wells

Monitoring wells will be installed to provide data pertinent to both ground water chemistry and characterization of the stratigraphy and ground water regime at the site.

Two monitoring wells exist on-site (see Figure 2). During initial field work if these wells are seen to be intact, all measurements should be taken from them along with groundwater samples. The existing office/garage supply well should also be sampled if it has not already been done so by NYSDOH.

Therefore, based on currently available information, the drilling program is proposed to include the installation of four test borings/observation wells; one upgradient well, and three downgradient wells (see Figure 2). It is anticipated that the hollow-stem auger drilling method will be used in the unconsolidated sediment, and NX-coring in bedrock.

Soil sampling will be performed as necessary using a split-spoon sampler at approximatley 5-ft. intervals and at detected major stratigraphic changes. An HNU would be used to monitor the potential organic vapors emitted during drilling operations and from each soil sample. Samples of major soil/ unconsolidated sediment will be collected for grain-size and/or Atterburg Limits analysis.

It is anticipated that the four wells will be completed in the shale/ sandstone bedrock, approximately 10-15 ft. below the water table. Standard construction of a well completed in bedrock would include 4-in. diameter steel pipe set approximately 5 ft. into bedrock, grouted to ground surface, and completed with a locked steel cap. A minimum inside diameter for the monitoring wells will be (2) two inches. They will be composed of at least schedule 40 PVC, PVC screen with a bottom plug, protective steel casing with locking cap etc. All work will be done in accordance with the Generic Workplan, Exhibit 1, and Guidelines for Exploratory Borings, Exhibit 3 of this contract Schedule 4.

If borings are not completed as wells the same day they are drilled, a mechanism to safeguard their integrity must be devised. The consultant will provide N.Y.S.D.E.C. with their plan for this contingency. During drilling operations the open holes and split spoon samples will be monitored with either a P.I.D. or an O.V.A. If conditions so warrant, for instance, if the site is known or suspected of discharging gases at or near explosive limits, then the drilling operation must be monitored with an explosimeter/oxygen meter.

For further details on complete well installation, decontamination, physical testing of soil samples, containment of drill cuttings and fluids, in-situ permeability testing, groundwater elevations and contours, please see the attached Generic Workplan, and accompanying exhibits.

SURVEY:

To allow for accurate water level measurements, each of the well elevations will be determined relative to a USGS datum. If a USGS datum is not within 200 feet of the site, the elevation measurements will be made relative to a site specific datum. Elevation measurements will be made to the top of casing to the nearest 0.01 foot and the ground surface adjacent to the well to the nearest 0.10 foot. Preliminary measurements will also be made necessary to assist in placement of downgradient wells. Survey work will be done in accordance with C.10 of Exhibit 3.

Sampling and Analysis

Groundwater

Groundwater form the four wells identified in Table 2, and Figure 2 will be analyzed for the complete USEPA Superfund Hazardous Substance List (HSL), using the USEPA Contract Laboratory Protocols. These substances are grouped as follows:

- HSL Volatiles
- Base/Neutral/acid extractables - semivolatiles
- HSL Pesticides/PCB's
- HSL - Inorganic parameters - total metals and cyanide

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 in a sample with high matrix interference, but of significant environmental impact, could become so diluted the at its presence in the final extract will not be detected.

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

Although an alternative method (additional work) may be agreed upon by both chemists, clearance for any additional 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 confirmed by NYSDEC in writing

Table 3 summarizes the analysis to be performed at the Cardwell Condenser site. Type of sample, number of samples, and analysis are included.

Soil

Where determined by NYSDEC or the consultant's field representative that chemical analyses are required for soil samples from well drilling activities, the consultant must be prepared to obtain such samples for shipment to a laboratory. Pricing for this activity must be included. For costing purposes, assume one analysis per well.

Surface Water/Sediment

Samples will be taken if observed at the time of field work (see Figure 2, Table 1).

HEALTH AND SAFETY PLAN:

Health and Safety equipment is expected to be required during the major field activities. For the purpose of costing the investigation, level D protection is assumed in each case. Should protective levels higher than level D be required for any activity, costs will be in accordance with the unit costs indicated in the attachment supplied by NYSDEC. The Consultant will submit this document prior to any field activities to NYSDEC.

REPORT PREPARATION

The consultant will prepare a final report consistent with N.Y.S.D.E.C.'s Phase II Investigation Report format and Article 49. The Phase II report will include:

- Results of the Phase II investigation, completed with boring logs, photos, and sketches developed as part of the Phase II field work.
- Final HRS score with detailed documentation.

The consultant will also supply as backup, the following raw data and resulting reduction.

- Geophysical results
- well logs
- etc.

COST ESTIMATE

The estimated manhours required for the Phase II project are presented in Table 4 and the estimated project costs by tasks are presented in Table 5. The above to be completed by NYSDEC consultant.

QUALITY ASSURANCE PLAN:

The Quality Assurance Plan will be submitted by the consultant as a separate document.

TABLE 1
PHASE II WORK PLAN - TASK DESCRIPTION
SAUGERTIES LANDFILL

Tasks		Description of Task
TASK		
II-A	Conduct Records Search/Data Compilation	Review Phase I information. Update by contacting and visiting central and regional DEC offices, Ulster County Department of Health Services, etc.
II-B	Perform Geophysics	Compile and evaluate geophysical data. Prepare geophysical summary and revise final Phase II scope of work.
II-C	Conduct Boring/Install Monitoring Wells	Install four bedrock wells. Four borings will be drilled to a depth of approximately 25 feet. Wells will be constructed of 2-inch PVC pipe. (See Figure 2)
	Soil samples from borings	Soil samples collected at 5-ft. intervals, during drilling and at changes in subsurface lithologies. Perform grain size analysis, Atterberg limits and permeability tests as specified in the Generic Workplan.
II-D	Perform Sampling and Analysis	
	Soil samples from test pits and auger holes.	Where determined by NYSDEC or the consultant's field representative that chemical analyses are required for soil samples from well drilling activities, the consultant must be prepared to obtain such samples for shipment to a laboratory. Pricing for this activity must be included. For costing purposes, assume one analysis per well.
	Sediment samples from surface waters	Two samples will be collected from on-site drainage ditches (see Figure 2).
	Groundwater samples	Six groundwater samples will be collected and analyzed for the Superfund HSL List.
	Surface water samples	Two samples will be collected from on-site drainage ditches (see Figure 2).
	Leachate samples	Three leachate samples will be collected if observed (see Figure 2).

TABLE 1 (cont'd)
PHASE II WORK PLAN - TASK DESCRIPTION
SAUGERTIES LANDFILL

Tasks		Description of Task
Task		
	Air samples	Using a photoionization detector to determine the presence of organics during on-site activities.
	Waste samples	No samples will be collected.
II-E	Conduct Site Assessment	A site contamination assessment will be conducted to complete the final HRS and HRS documentation records.
II-F	Report Preparation	Prepare final report containing significant Phase I information, additional field data, final HRS and HRS documentation records, and site assessments with recommendations for any future action at site.
II-G	Project Management	Project coordination, administration and reporting.

TABLE 2
PHASE II WORK PLAN - SAMPLING SUMMARY
SAUGERTIES LANDFILL

Designation	Location Rationale	Aquifer Screened	Approx. Boring Depth (ft)	Length of Screen (ft)
Groundwater				
GW-1	Upgradient	Bedrock	25	10
GW-2	Downgradient	Bedrock	25	10
GW-3	Downgradient	Bedrock	25	10
GW-4	Downgradient	Bedrock	25	10
Surface Water				
One each from each drainage ditch, if seen flowing (two total) (see Figure 2)				
Sediment				
One each from each drainage ditch (two total) (see Figure 2)				
Leachate				
If leachate outbreaks are observed (two total) (see Figure 2)				
Borings/Surface Soil Samples				
For costing purposes, assume one sample per boring.				
Air				
Use of a PID during on-site activities				

NOTE: Locations, aquifer screened, approximate boring depth, length of screen (ft) listed are based on existing data and are the basis of the cost estimate. These criteria may change based on the results of the geophysical surveys and/or field conditions.

TABLE 3
NYSDEC - RECOMMENDED CHEMICAL ANALYSES - SAUGERTIES LANDFILL

Type of Sample	Type of Analyses(1) HSL(2) Metals	HSL(3) Volatiles	HSL(4) Semi-Volatiles	HSL(5) Pesticides/PCBs	Matrix/Spike Duplicate (6)
Groundwater(7)	5	5	5	5	1/1
Surface Water	2	2	2	2	1/1
Sediment	2	2	2	2	1/1
Soil	4	4	4	4	1/1
Air	---	---	---	---	---
Leachate	*	*	*	*	*
Drums	---	---	---	---	---
Waste	---	---	---	---	---
Trip Blank	---	1	---	---	---
Field Blank	1	1	1	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.
(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/PCB's - 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 no samples are to be analyzed.

* If leachate is seen to be flowing during field activities representative samples should be taken.

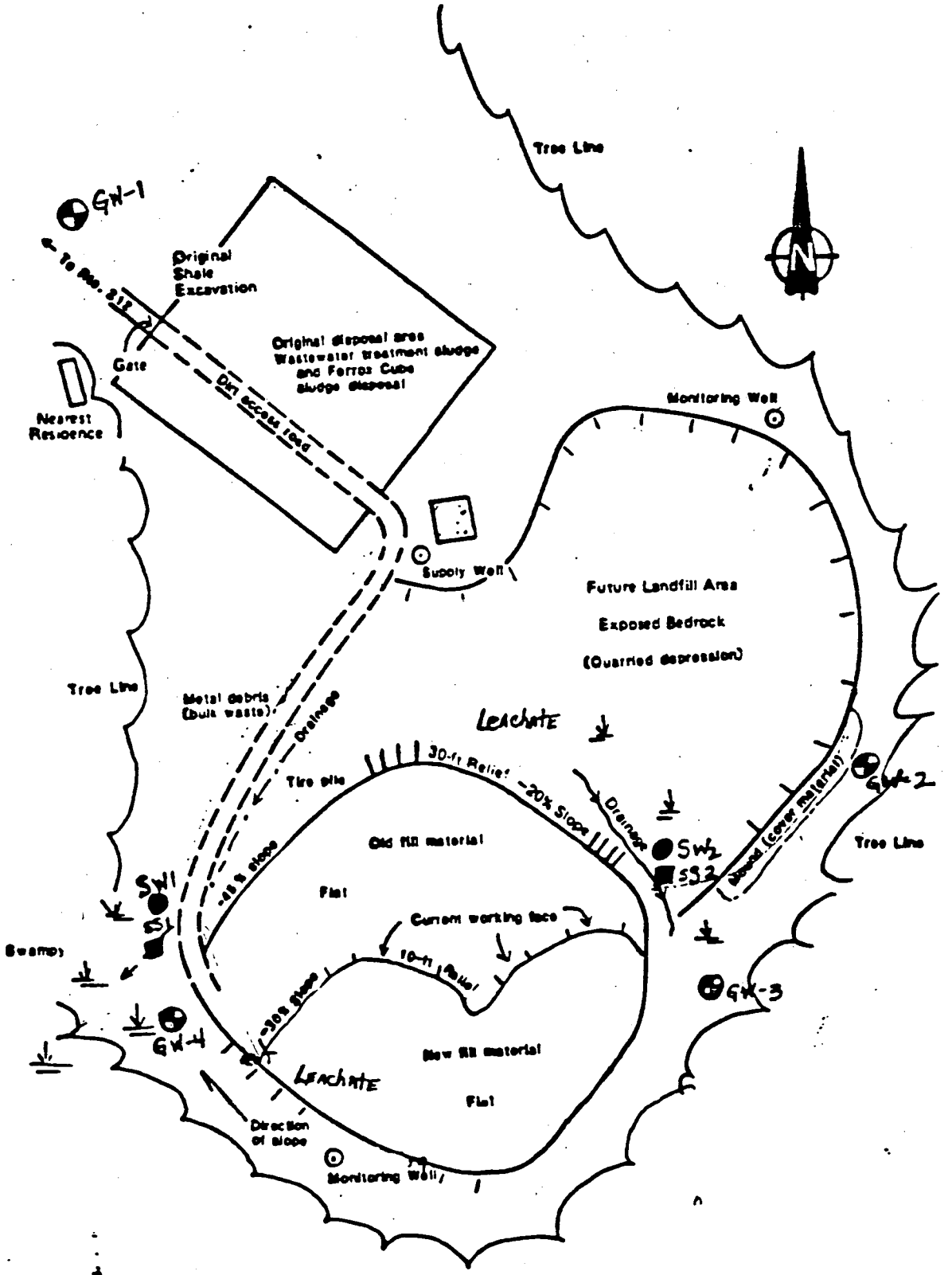


Figure 2. Site sketch. Town of Saugerties Landfill, 23 April 1986. (Not to scale.)

Figure 1.

II. SITE RECONNAISSANCE REPORT

Drilling Rig Access to Well Location(s)

Drilling rig can access all well locations through landfill's main road.

Useable Potable Water Source

Permission granted. Location will be determined by Contact Person.

Contact Person:

Ms. Gloria Shovel
Town Supervisor
Main Street, Saugerties,
NY 12477
(914) 246-5657

Placement of Drilling Cuttings

It is not recommended that well cuttings and water from monitoring well installation and development be drummed. Regular human traffic is not expected near the locations of the monitoring wells.

Changes to Site Sketch

None.

Other Relevant Information

It is expected that wells will be completed in the shale/sandstone bedrock. Appropriate drilling equipment should be provided.

II. Site Specific Sampling Order
Field Data Sheet

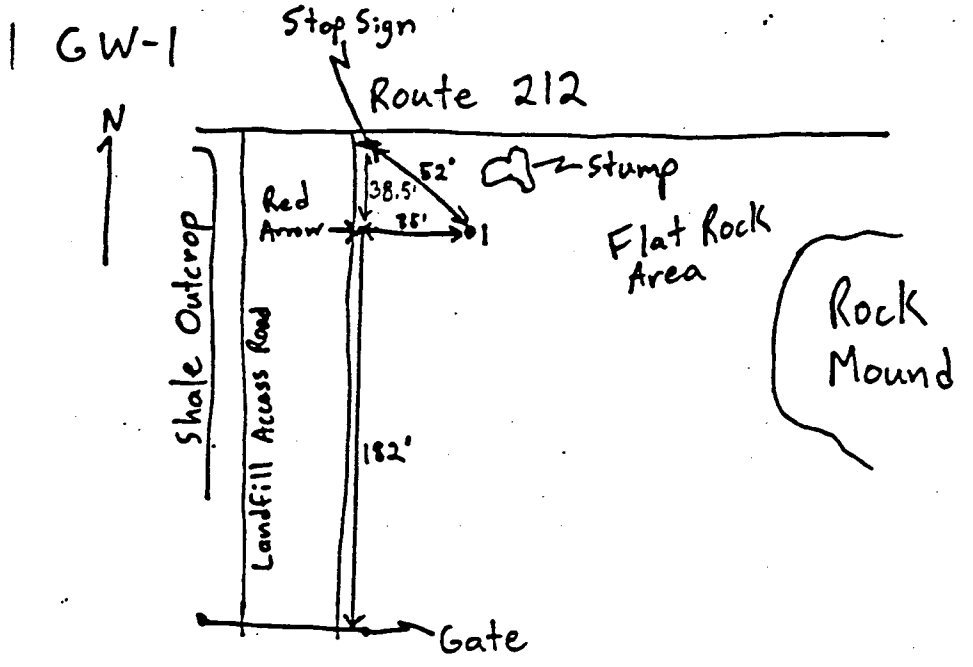
Site Name: Saugatuck Landfill

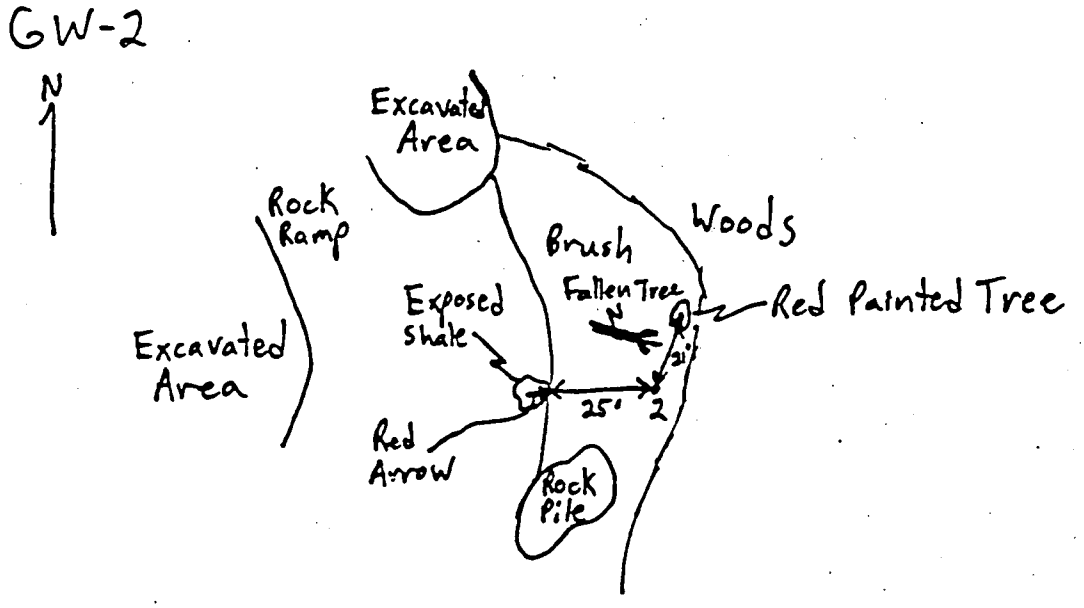
Date:

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										
2	field blank										
3	GW-1	bailer				X					
4	GW-4	"				X					
5	GW-3	"				X					
6	GW-3	"				X					Duplicate GW-3
7	GW-2	"				X					
8	SW-1	wheaton								X	From on site drainage ditch
9	SS-1	Grab					X				"
10	SW-2	wheaton								X	From on site drainage ditch
11	SS-2	Grab					X				"
12	LS-1	Glass Bottle							X		if Observed
13	LS-2	Glass Bottle							X		" "

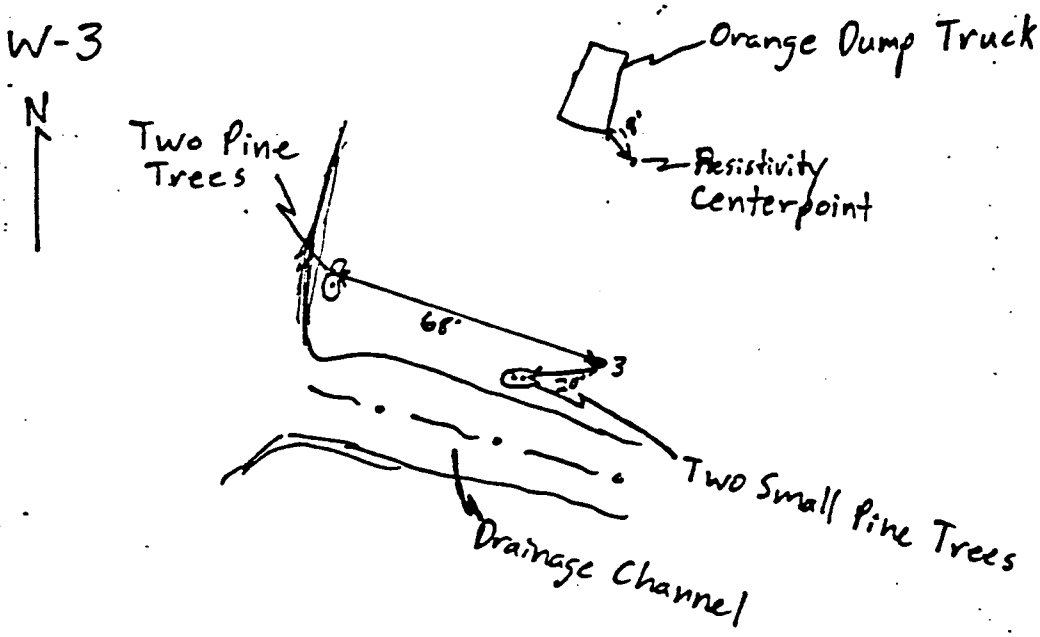




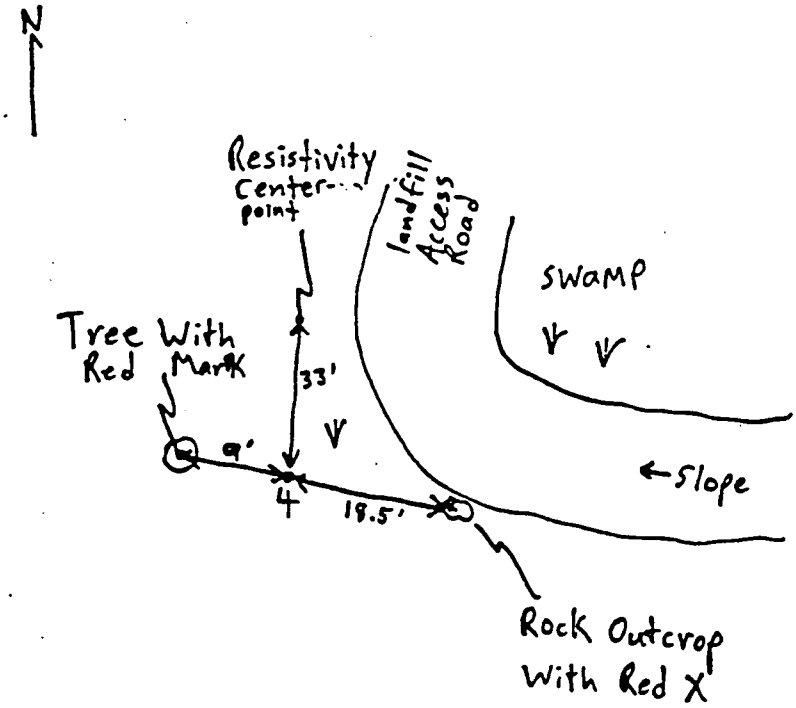
Saugerties Landfill
DETAILS

Figure 2

GW-3



GW-4



Saugerties Landfill

Figure 3
DETAILS

e Coordinates:

atitude: 42° 02' 30"
ongitude: 74° 04' 30"

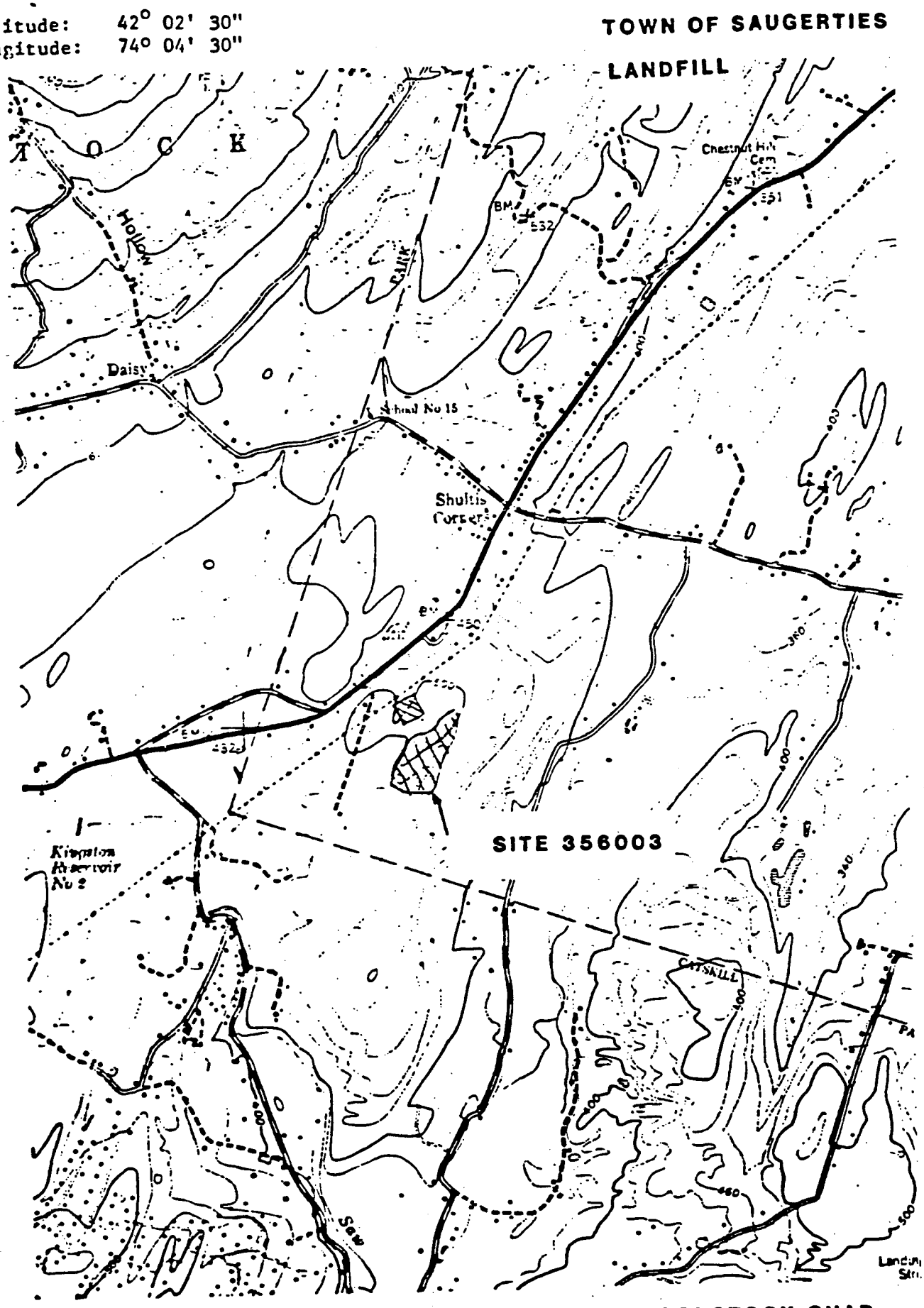
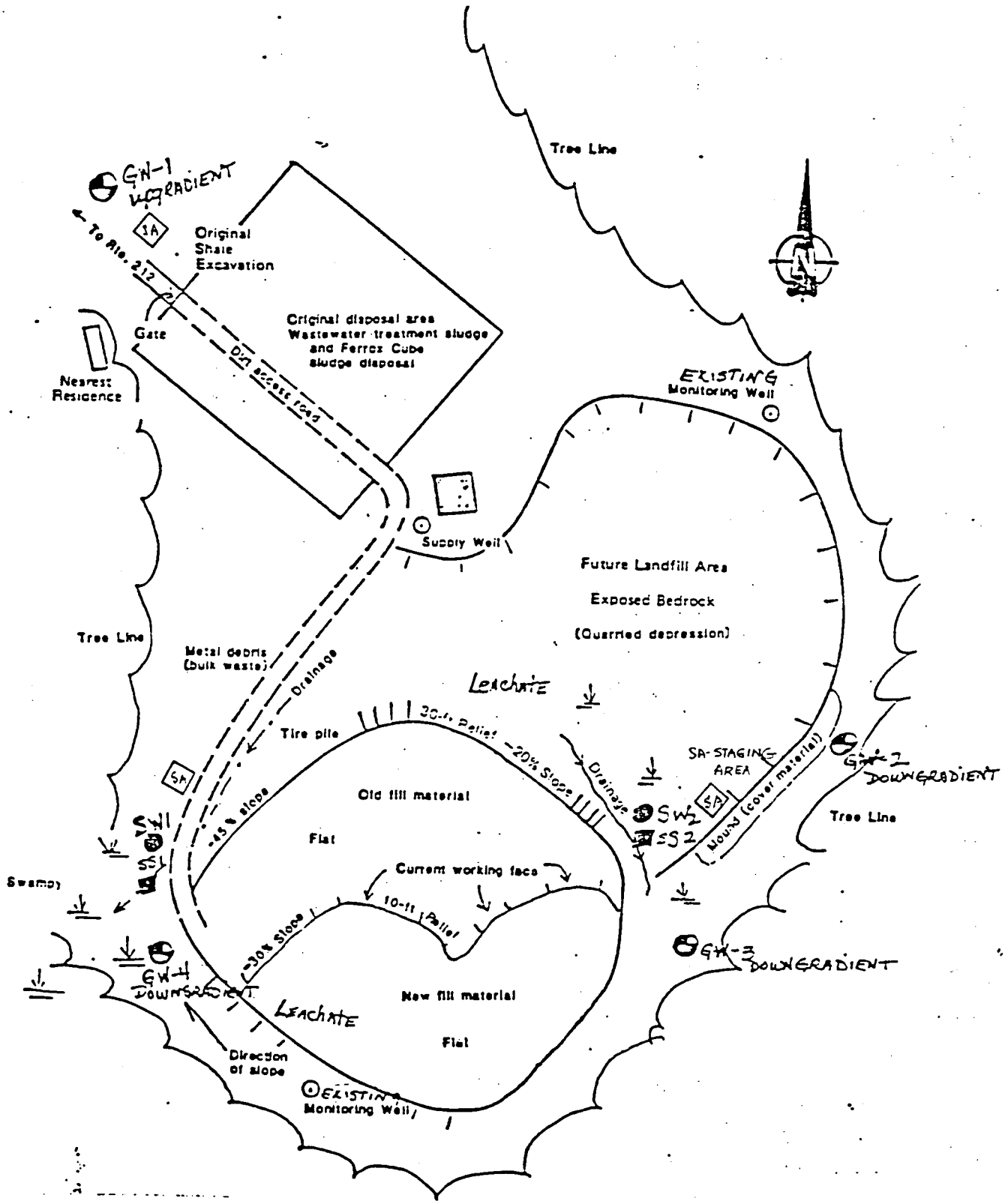


Figure 1 Scale 1:24,000 A-22

III. SITE SKETCH



SITE SKETCH

Saugerties Landfill #356003
Town of Saugerties, Ulster County

IV. GEOPHYSICAL REPORT

RECEIVED
ENVIRONMENTAL
SCIENCE DEPARTMENT
OCT 21 1988
GIBBS & HILL INC.

CONSULTING GROUND-WATER
GEOLOGISTS AND ENGINEERS
ROUX ASSOCIATES INC
THE HUNTINGTON ATRIUM
775 PARK AVENUE
SUITE 255
HUNTINGTON, NEW YORK 11743

Geophysical Survey
Phase II Investigations
Saugerties landfill
Town of Saugerties/Ulster County
Site ID #356003

Prepared For
Gibbs & Hill

October 1988

Prepared By

ROUX ASSOCIATES, INC.
Huntington Atrium
775 Park Avenue
Suite 255
Huntington, New York 11743

CONTENTS

FIGURES

Following Page

TABLES

INTRODUCTION

Geophysical surveys were conducted at the Saugerties Landfill site on August 30 and 31, 1988 to characterize subsurface conditions. A magnetometer was used at proposed monitoring well locations to detect ferromagnetic objects which might be encountered during drilling. A resistivity survey was performed to determine the depth to the water table and to locate anomalies which could indicate ground-water quality changes resulting from the landfill. A terrain conductivity survey was performed to characterize shallow subsurface conditions.

METHODS OF INVESTIGATION

Magnetometer

The Schonstedt Model GA-52B flux-gate magnetometer used for the survey provides a continuous audio signal which increases from the idling frequency of 40 H_z as surface and/or subsurface ferromagnetic material is approached.

The well locations were furnished by the NYSDEC as shown on Figure 1. At each proposed well location, an area of approximately 300 square feet was screened in detail with the magnetometer. If no detections of ferromagnetic material were made within the survey area, the location center was marked with red spray paint indicating the proposed well number. If detections were made, the surrounding area was screened until a clear location was found. Distances from permanent site markers were recorded before leaving the area.

Terrain Conductivity

A Geonics Model EM-31D non-contacting terrain conductivity meter was used to locate anomalies in ground conductivity. The instrument has a nominal operational depth of about six meters. Measurements, given in millimhos per meter, are influenced by shallow materials more strongly than by those located deeper.

The survey was conducted with the instrument set up to record the quadrature component of the magnetic field. The instrument was calibrated according to the manufacturers specifications prior to the survey. A 30 foot data measurement spacing pattern was referenced to permanent site locations so that the survey may be reproduced if necessary. To detect nearby lateral changes in conductivity, two measurements were taken at each grid node, perpendicular to each other.

Resistivity

A Bison 2350B resistivity meter was used to measure earth resistivity with the Lee electrode arrangement. The instrument was calibrated according to the manufacturers specifications prior to the survey. Soundings were performed using ten foot electrode spacing increments from 10 feet to 40 feet.

DISCUSSION OF RESULTS

Magnetometer

A magnetometer survey was conducted at the locations of the proposed monitoring wells to detect potential drilling obstructions. No buried ferromagnetic anomalies were detected at the proposed well locations (Figures 2 through 4).

Terrain Conductivity

The EM-31 is a geophysical instrument which induces a magnetic field to characterize terrain conductivity. The instrument will respond to changes in geology, ground-water quality and man-made conductive objects to a depth of about six meters. Interpretation of the data is limited because information regarding these factors was not available.

Seven terrain conductivity surveys were conducted using a 30 foot spacing between measurements. Measurement locations were tied to existing site markers so that the survey could be reproduced at a later date if necessary.

Measurement locations are shown on Figure 2 and data are presented in Tables 1 through 7. Figures 5 through 8 show plotted EM-31 data.

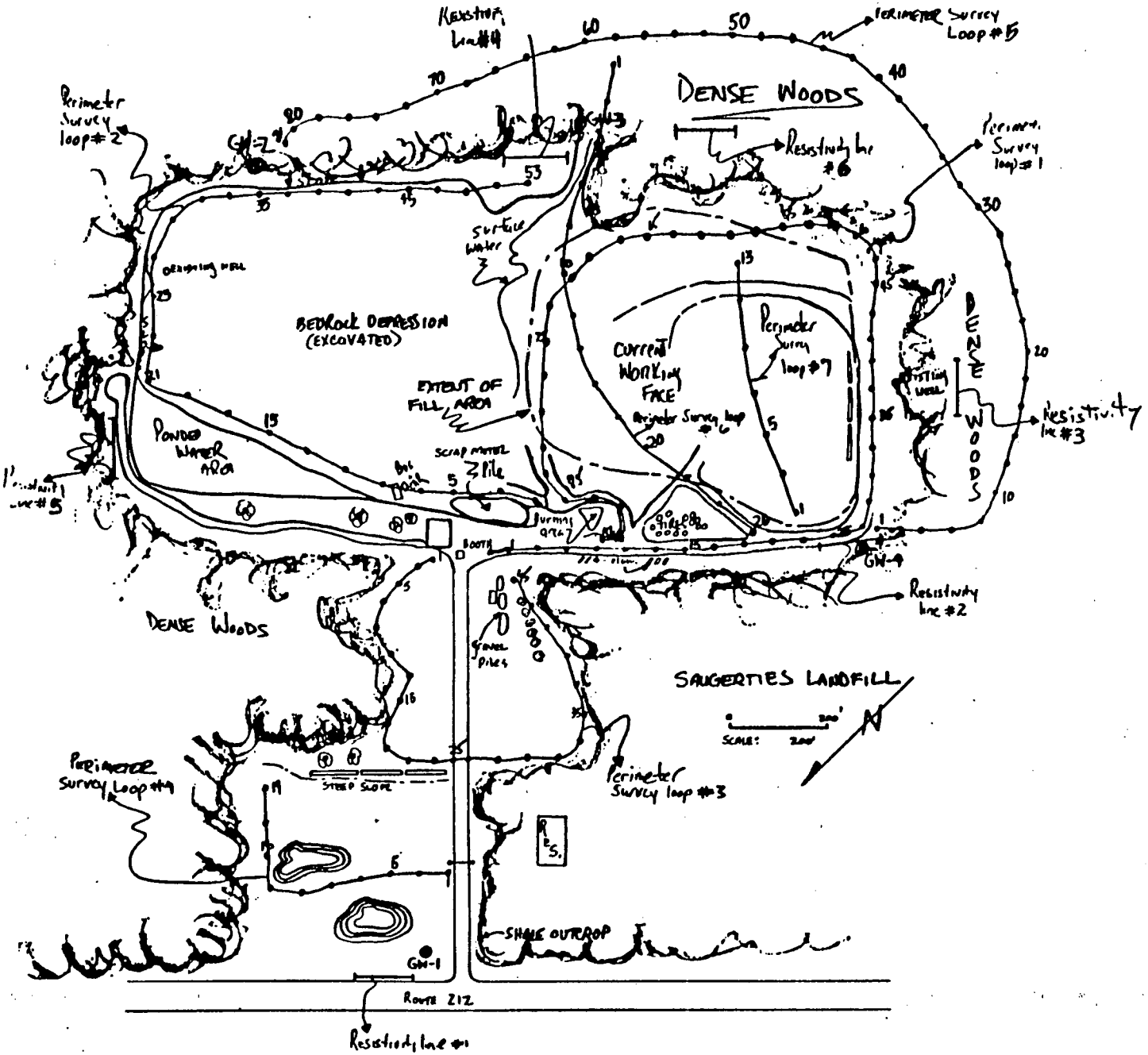
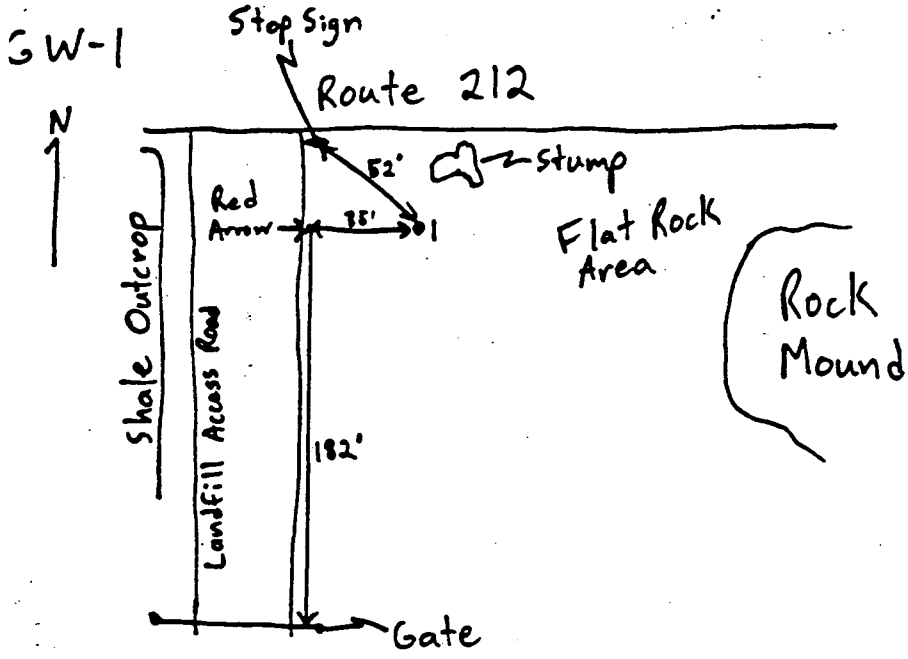
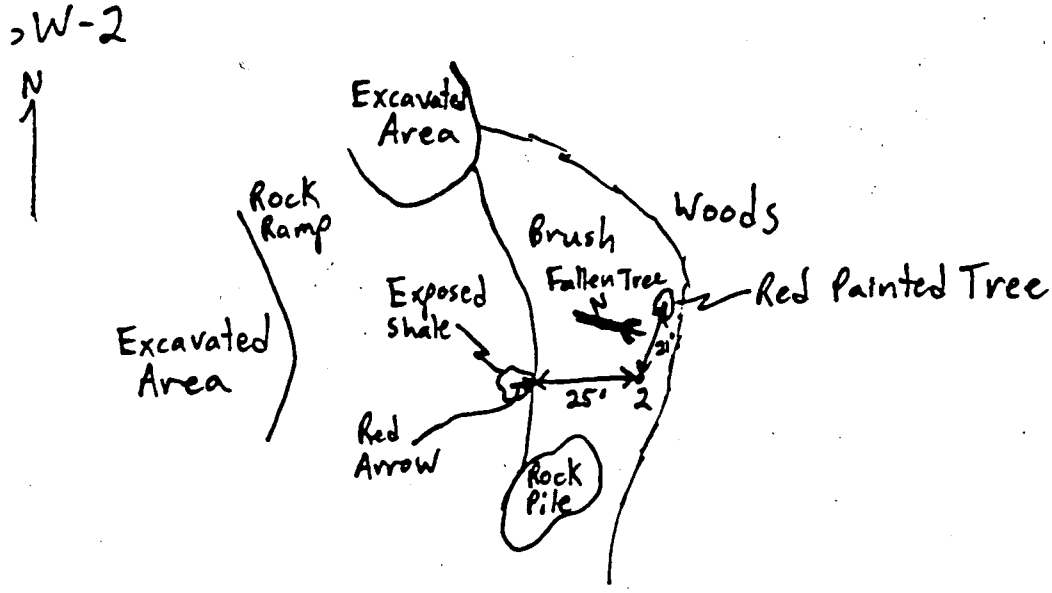

DENSE WOODS
Perimeter Survey Loop #5
Perimeter Survey loop #2
Resistivity line #4
Perimeter Survey loop #1
Resistivity line #6
BEDROCK DEPRESSION (EXCAVATED)
EXTENT OF FILL AREA
CURRENT WORKING FACE
Perimeter Survey loop #7
Perimeter Survey loop #6
PONDED WATER AREA
SCRAP METAL PILE
DENSE WOODS
Resistivity line #3
Resistivity line #5
Resistivity line #2
DENSE WOODS
SAUGERTIES LANDFILL
Perimeter Survey Loop #4
Perimeter Survey loop #3
STEEP SLOPE
SHALE OUTCROP
GW-1
ROUTE 212
Resistivity line #1

Figure 2.

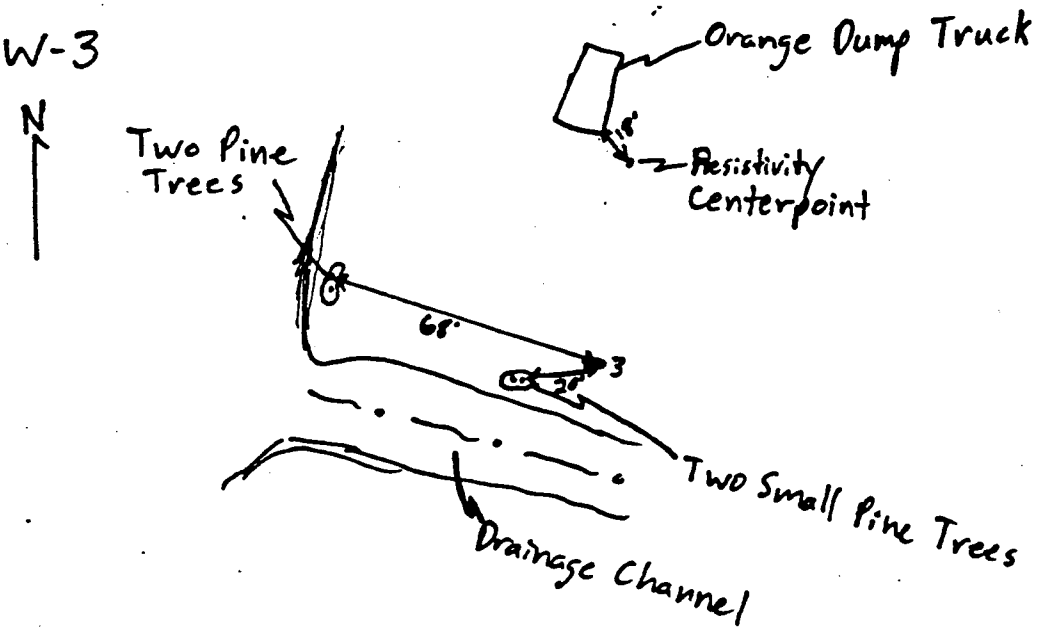




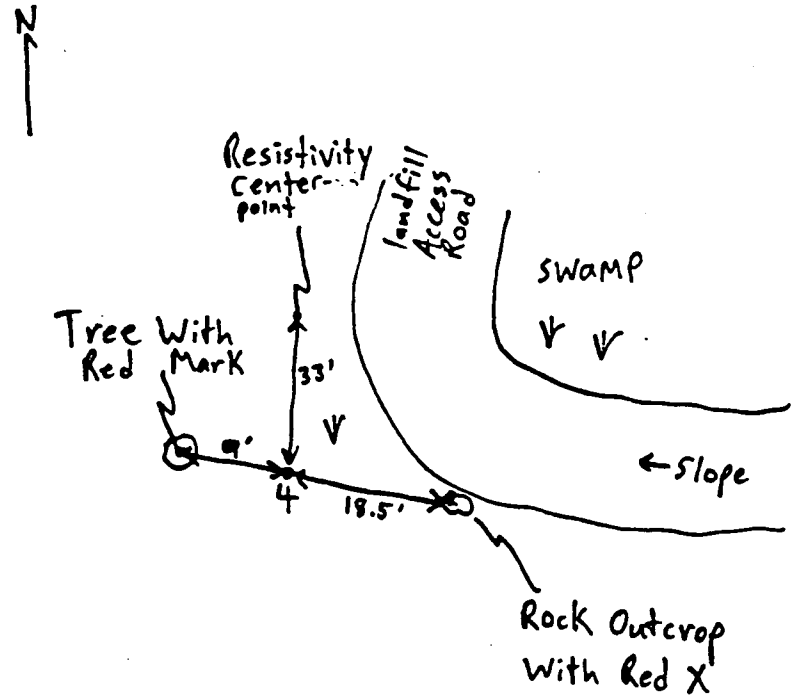
Saugerties Landfill

Figure 3.

GW-3



GW-4



Saugerties Landfill

Figure 4.

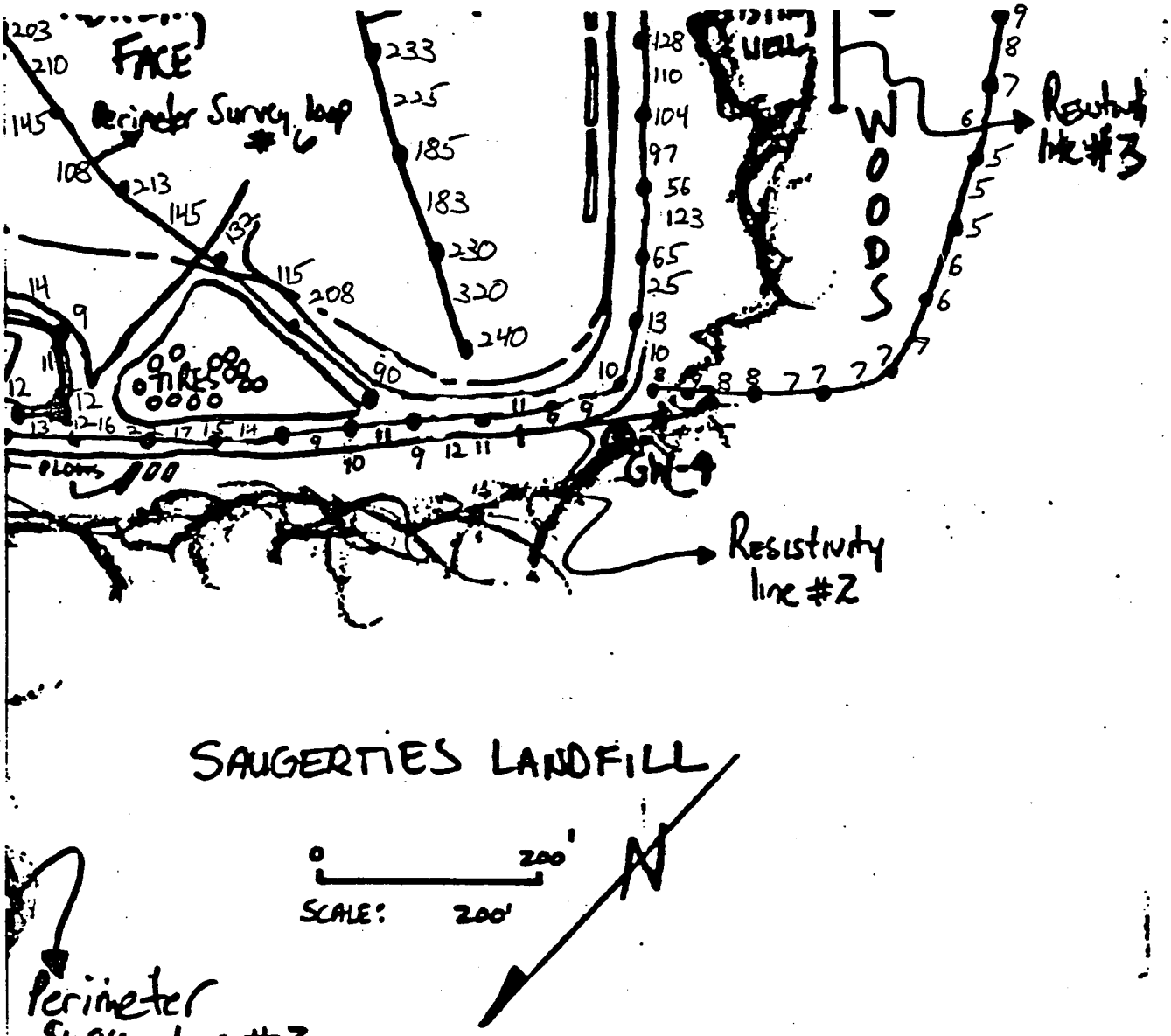

FACE
Perimeter Survey loop #1
WOODS
Resistivity line #3
Resistivity line #2
SAUGERTIES LANDFILL
SCALE: 200'
Perimeter Survey loop #3

Figure 5.

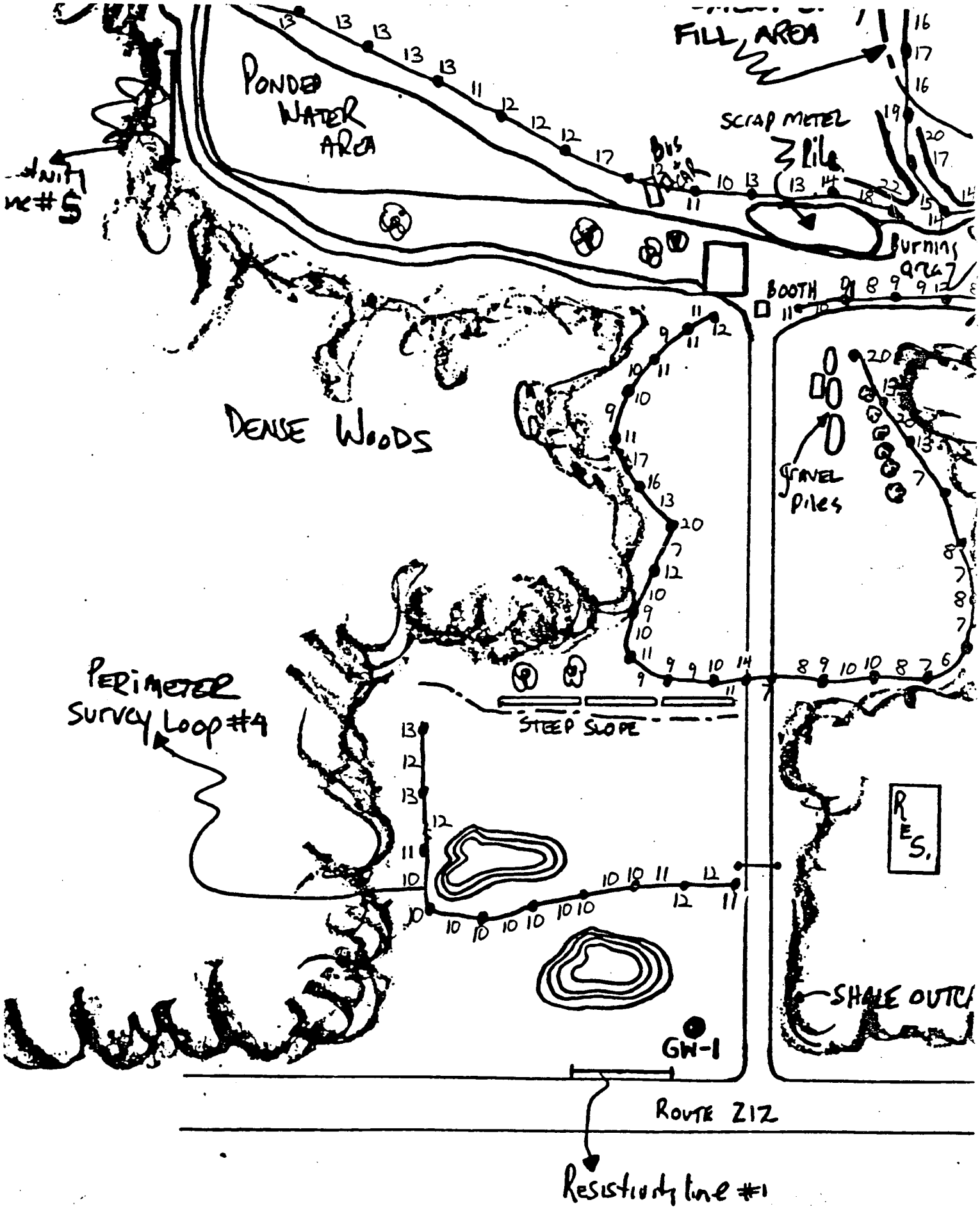

FILL AREA
PONDED WATER AREA
SCRAP METEL
Burning area
BOOTH
DENSE WOODS
Gravel piles
PERIMETER SURVEY LOOP #9
STEEP SLOPE
RES.
SHALE OUTC
GW-1
ROUTE 212
Resistivity line #1

Figure 6.

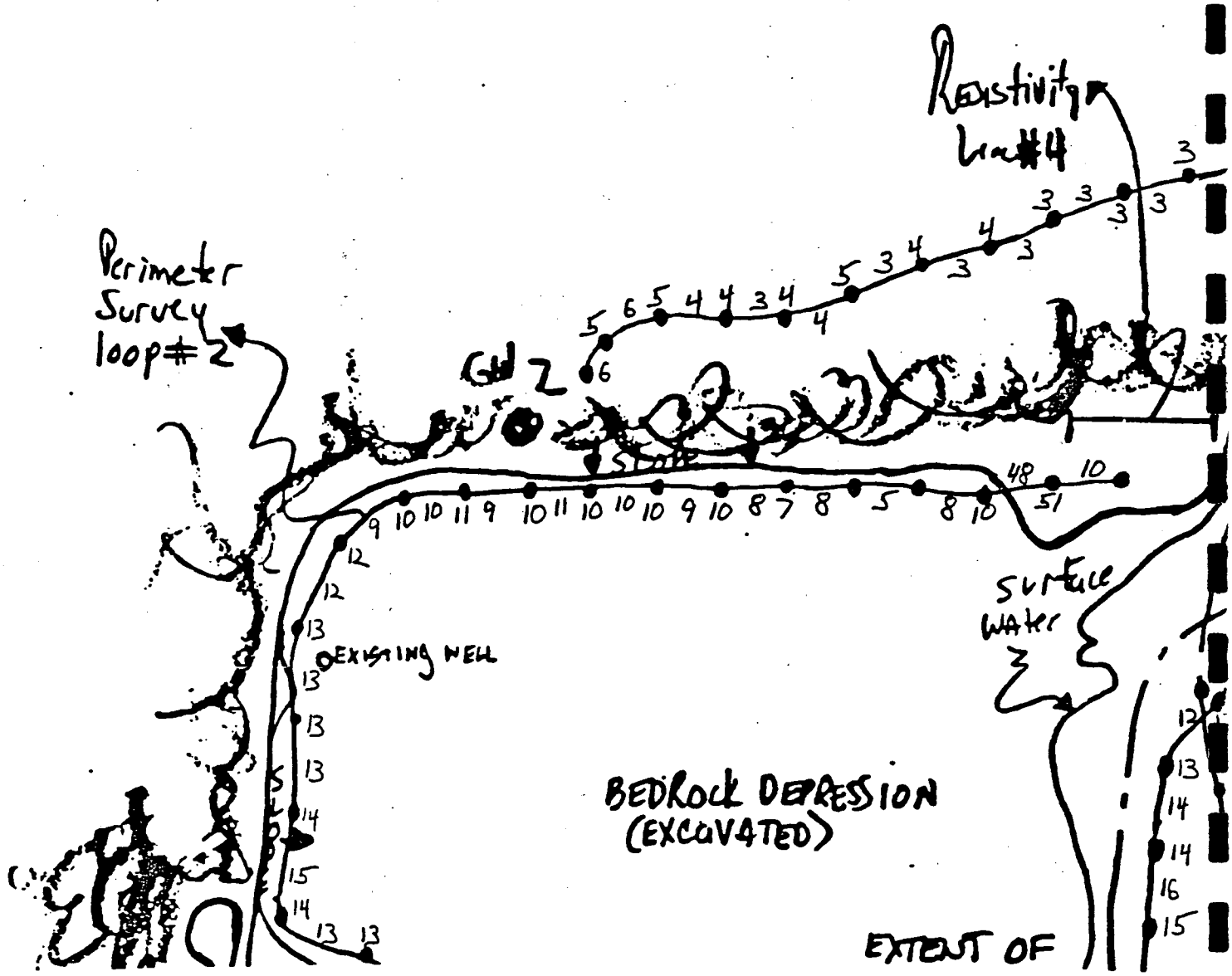

Resistivity Line #4
Perimeter Survey loop #2
GW 2
EXISTING WELL
BEDROCK DEPRESSION (EXCAVATED)
SURFACE WATER
EXTENT OF

Figure 7.

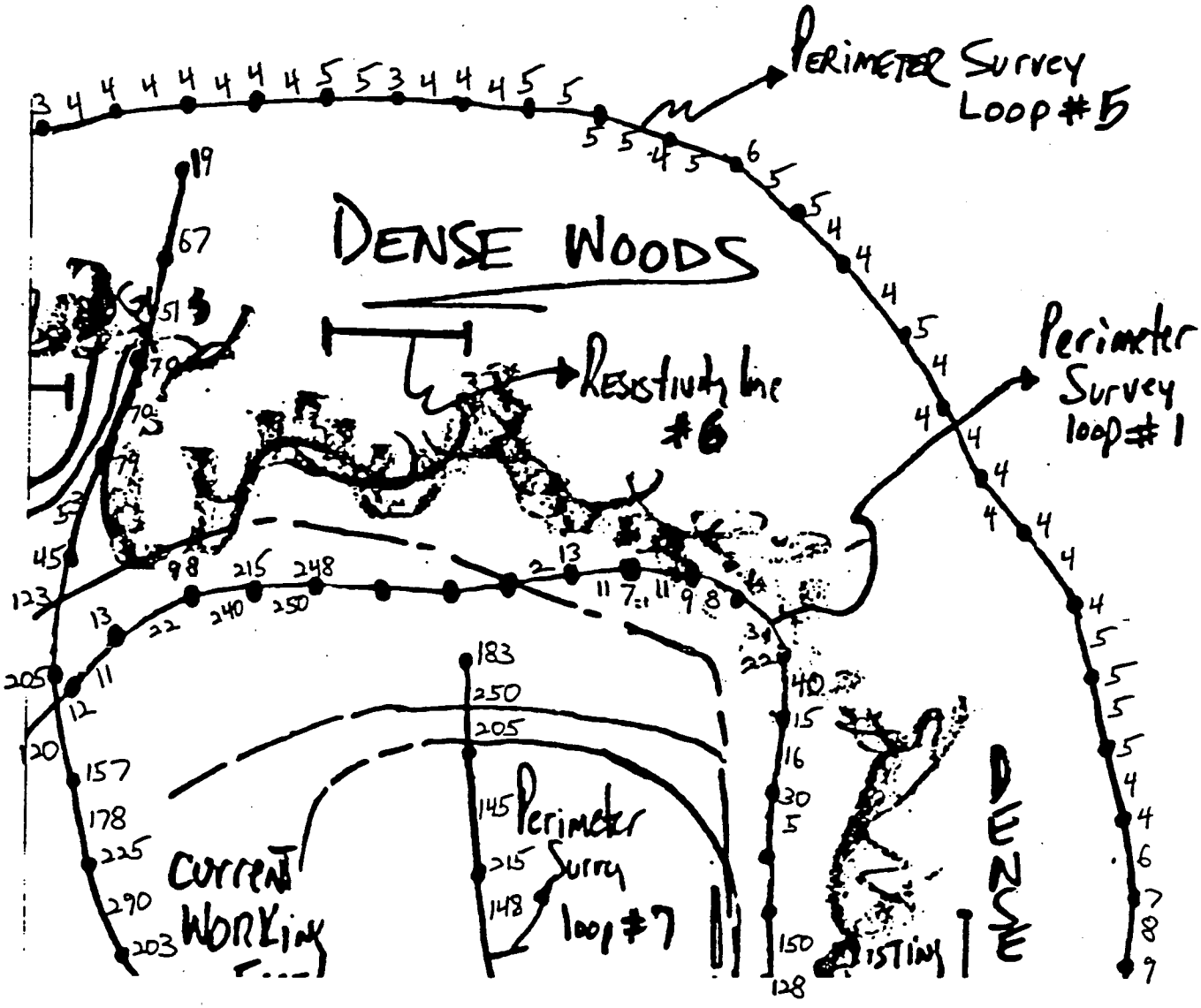

Perimeter Survey Loop #5
DENSE WOODS
Resistivity line #6
Perimeter Survey loop #1
CURRENT WORKING
Perimeter Survey loop #7
DENSE

Figure 8.

Table 1.

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 8/30/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #1

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
1	1.10	30	11.00	1.00	30	10.00	10.50
2	1.00	30	10.00	0.91	10	9.10	9.55
3	0.90	10	9.00	0.91	10	9.10	9.05
4	0.83	10	8.30	0.83	10	8.30	8.30
5	0.88	10	8.80	0.92	10	9.20	9.00
6	0.84	10	8.40	0.88	10	8.80	8.60
7	1.05	30	10.50	1.25	30	12.50	11.50
8	0.82	10	8.20	0.80	10	8.00	8.10
9	0.84	10	8.40	0.84	10	8.40	8.40
10	1.30	30	13.00	1.20	30	12.00	12.50
11	1.20	30	12.00	1.20	30	12.00	12.00
12	1.50	30	15.00	1.65	30	16.50	15.75
13	2.35	30	23.50	1.95	30	19.50	21.50
14	1.70	30	17.00	1.75	30	17.50	17.25
15	1.55	30	15.50	1.45	30	14.50	15.00
16	1.35	30	13.50	1.45	30	14.50	14.00
17	-	-	-	-	-	-	-
18	0.92	10	9.20	0.91	10	9.10	9.15
19	1.00	30	10.00	0.91	10	9.10	9.55
20	1.15	30	11.50	1.10	30	11.00	11.25
21	0.93	10	9.30	0.91	10	9.10	9.20
22	1.25	30	12.50	1.20	30	12.00	12.25
23	1.10	30	11.00	1.00	30	10.00	10.50
24	1.25	30	12.50	0.92	10	9.20	10.85
25	0.95	10	9.50	0.93	10	9.30	9.40
26	0.93	10	9.30	0.82	10	8.20	8.75
27	0.88	10	8.80	1.05	30	10.50	9.65
28	1.05	30	10.50	1.00	30	10.00	10.25
29	1.20	30	12.00	1.35	30	13.50	12.75
30	2.45	30	24.50	2.55	30	25.50	25.00

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 1. (cont.)

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 8/30/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #1

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
31	0.55	100	55.00	0.74	100	74.00	64.50
32	1.15	300	115.00	1.30	300	130.00	122.50
33	0.58	100	58.00	0.53	100	53.00	55.50
34	1.10	300	110.00	0.84	100	84.00	97.00
35	1.25	300	125.00	0.82	100	82.00	103.50
36	1.15	300	115.00	1.05	300	105.00	110.00
37	1.30	300	130.00	1.25	300	125.00	127.50
38	1.45	300	145.00	1.55	300	155.00	150.00
39	-	-	-	0.52	10	5.20	-
40	-	-	-	0.38	100	38.00	-
41	-	-	-	-	-	-	-
42	0.70	10	7.00	0.21	10	2.10	4.55
43	2.80	30	28.00	0.31	100	31.00	29.50
44	1.25	30	12.50	1.90	30	19.00	15.75
45	1.86	10	18.60	1.10	30	11.00	14.80
46	0.32	100	32.00	0.48	100	48.00	40.00
47	2.30	30	23.00	2.15	30	21.50	22.25
48	0.45	10	4.50	1.00	3	1.00	2.75
49	-	-	-	-	-	-	-
50	0.85	10	8.50	0.82	10	8.20	8.35
51	0.84	10	8.40	0.86	10	8.60	8.50
52	1.25	30	12.50	0.90	10	9.00	10.75
53	0.83	10	8.30	0.48	30	4.80	6.55
54	1.20	30	12.00	1.00	30	10.00	11.00
55	1.20	30	12.00	1.40	30	14.00	13.00
56	1.75	3	1.75	2.35	3	2.35	2.05
57	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-
59	-	-	-	0.57	10	5.70	-
60	-	-	-	-	-	-	-

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 1. (cont.)

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 8/30/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #1

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
61	-	-	-	-	-	-	-
62	-	-	-	-	-	-	-
63	2.45	300	245.00	2.50	300	250.00	247.50
64	2.50	300	250.00	2.50	300	250.00	250.00
65	2.10	300	210.00	2.20	300	220.00	215.00
66	2.40	300	240.00	2.40	300	240.00	240.00
67	0.98	100	98.00	0.97	100	97.00	97.50
68	2.45	30	24.50	1.95	30	19.50	22.00
69	1.40	30	14.00	1.10	30	11.00	12.50
70	1.00	30	10.00	1.25	30	12.50	11.25
71	1.10	30	11.00	1.35	30	13.50	12.25
72	1.20	30	12.00	1.15	30	11.50	11.75
73	1.35	30	13.50	1.30	30	13.00	13.25
74	1.35	30	13.50	1.40	30	14.00	13.75
75	1.40	30	14.00	1.40	30	14.00	14.00
76	1.60	30	16.00	1.50	30	15.00	15.50
77	1.50	30	15.00	1.50	30	15.00	15.00
78	1.60	30	16.00	1.55	30	15.50	15.75
79	1.65	30	16.50	1.70	30	17.00	16.75
80	1.60	30	16.00	1.65	30	16.50	16.25
81	1.85	30	18.50	1.85	30	18.50	18.50
82	2.00	30	20.00	1.95	30	19.50	19.75
83	1.85	30	18.50	1.55	30	15.50	17.00
84	1.50	30	15.00	1.45	30	14.50	14.75
85	1.45	30	14.50	1.40	30	14.00	14.25
86	1.40	30	14.00	1.40	30	14.00	14.00
87	1.40	30	14.00	1.35	30	13.50	13.75
88	1.40	30	14.00	1.35	30	13.50	13.75
89	0.67	10	6.70	1.20	30	12.00	9.35
90	1.05	30	10.50	1.05	30	10.50	10.50

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 1. (cont.)

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 8/30/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #1

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
91	1.10	30	11.00	1.20	30	12.00	11.50
92	1.15	30	11.50	1.15	30	11.50	11.50

DATA POINTS 17,39-41,49,57-62 - METER READINGS WERE OFF SCALE IN THE NEGATIVE DIRECTION AT THE 1000 METER SCALE.

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 2.

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 8/30/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #2

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
1	2.00	30	20.00	2.45	30	24.50	22.25
2	1.70	30	17.00	1.85	30	18.50	17.75
3	1.35	30	13.50	1.40	30	14.00	13.75
4	1.30	30	13.00	1.35	30	13.50	13.25
5	1.30	30	13.00	1.35	30	13.50	13.25
6	0.95	30	9.50	1.10	30	11.00	10.25
7	1.15	30	11.50	1.10	30	11.00	11.25
8	1.20	30	12.00	1.25	30	12.50	12.25
9	1.75	30	17.50	-	-	-	-
10	1.90	30	19.00	1.45	30	14.50	16.75
11	1.20	30	12.00	1.20	30	12.00	12.00
12	1.15	30	11.50	1.15	30	11.50	11.50
13	1.20	30	12.00	1.20	30	12.00	12.00
14	1.05	30	10.50	1.20	30	12.00	11.25
15	1.25	30	12.50	1.25	30	12.50	12.50
16	1.25	30	12.50	1.25	30	12.50	12.50
17	1.25	30	12.50	1.30	30	13.00	12.75
18	1.25	30	12.50	1.25	30	12.50	12.50
19	1.25	30	12.50	1.25	30	12.50	12.50
20	1.25	30	12.50	1.25	30	12.50	12.50
21	1.35	30	13.50	1.35	30	13.50	13.50
22	1.45	30	14.50	1.45	30	14.50	14.50
23	1.40	30	14.00	1.30	30	13.00	13.50
24	1.30	30	13.00	1.25	30	12.50	12.75
25	1.30	30	13.00	1.20	30	12.00	12.50
26	1.25	30	12.50	1.25	30	12.50	12.50
27	1.35	30	13.50	1.30	30	13.00	13.25
28	1.25	30	12.50	1.20	30	12.00	12.25
29	1.15	30	11.50	1.15	30	11.50	11.50
30	0.95	10	9.50	0.91	10	9.10	9.30

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 2. (cont.)

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 8/30/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #2

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
31	1.00	30	10.00	1.00	30	10.00	10.00
32	1.05	30	10.50	1.00	30	10.00	10.25
33	1.10	30	11.00	1.05	30	10.50	10.75
34	0.96	10	9.60	0.92	10	9.20	9.40
35	0.97	10	9.70	0.93	10	9.30	9.50
36	1.10	30	11.00	1.05	30	10.50	10.75
37	1.00	30	10.00	1.00	30	10.00	10.00
38	1.00	30	10.00	0.90	10	9.00	9.50
39	0.98	10	9.80	0.92	10	9.20	9.50
40	0.91	10	9.10	0.85	10	8.50	8.80
41	1.05	30	10.50	1.00	30	10.00	10.25
42	0.86	10	8.60	0.80	10	8.00	8.30
43	0.73	10	7.30	0.69	10	6.90	7.10
44	0.83	10	8.30	0.81	10	8.10	8.20
45	-	-	-	-	-	-	-
46	0.49	10	4.90	0.48	10	4.80	4.85
47	1.05	30	10.50	-	-	-	-
48	0.86	10	8.60	0.80	10	8.00	8.30
49	1.05	30	10.50	0.99	10	9.90	10.20
50	0.42	100	42.00	0.54	100	54.00	48.00
51	0.51	100	51.00	0.50	100	50.00	50.50
52	0.86	10	8.60	1.10	30	11.00	9.80
53	-	-	-	1.90	3	1.90	-

DATA POINTS 9,45,47,53 - METER READINGS WERE OFF SCALE IN THE NEGATIVE DIRECTION AT THE 1000 METER SCALE.

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 3.

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 8/30/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #3

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
1	1.20	30	12.00	1.10	30	11.00	11.50
2	1.10	30	11.00	1.10	30	11.00	11.00
3	1.10	30	11.00	1.00	30	10.00	10.50
4	0.89	10	8.90	0.90	10	9.00	8.95
5	1.10	30	11.00	1.05	30	10.50	10.75
6	0.98	10	9.80	1.10	30	11.00	10.40
7	1.00	30	10.00	1.00	30	10.00	10.00
8	0.91	10	9.10	0.90	10	9.00	9.05
9	1.10	30	11.00	1.00	30	10.00	10.50
10	1.70	30	17.00	1.75	30	17.50	17.25
11	1.50	30	15.00	1.60	30	16.00	15.50
12	1.35	30	13.50	1.30	30	13.00	13.25
13	2.20	30	22.00	1.85	30	18.50	20.25
14	0.91	10	9.10	0.46	10	4.60	6.85
15	0.87	10	8.70	1.45	30	14.50	11.60
16	1.00	30	10.00	0.97	10	9.70	9.85
17	0.89	10	8.90	0.82	10	8.20	8.55
18	1.05	30	10.50	1.00	30	10.00	10.25
19	1.05	30	10.50	1.05	30	10.50	10.50
20	0.85	30	8.50	0.85	30	8.50	8.50
21	0.87	30	8.70	0.89	10	8.90	8.80
22	0.95	30	9.50	0.90	30	9.00	9.25
23	1.00	30	10.00	0.95	30	9.50	9.75
24	1.10	30	11.00	1.05	30	10.50	10.75
25	1.30	30	13.00	1.40	30	14.00	13.50
26	0.74	10	7.40	0.74	10	7.40	7.40
27	0.76	10	7.60	0.78	10	7.80	7.70
28	0.92	10	9.20	0.89	10	8.90	9.05
29	0.85	30	8.50	1.05	30	10.50	9.50
30	0.75	30	7.50	1.25	30	12.50	10.00

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 3. (cont.)

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 8/30/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #3

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
31	0.76	10	7.60	0.79	10	7.90	7.75
32	0.72	10	7.20	0.74	10	7.40	7.30
33	0.62	10	6.20	0.64	10	6.40	6.30
34	0.59	10	5.90	0.62	10	6.20	6.05
35	0.65	10	6.50	0.67	10	6.70	6.60
36	0.73	10	7.30	0.79	10	7.90	7.60
37	0.69	10	6.90	0.68	10	6.80	6.85
38	0.78	10	7.80	0.74	10	7.40	7.60
39	-	-	-	0.40	3	0.40	-
40	2.45	3	2.45	-	-	-	-
41	0.68	10	6.80	0.71	10	7.10	6.95
42	2.00	30	20.00	0.69	10	6.90	13.45
43	2.35	30	23.50	1.70	30	17.00	20.25
44	1.25	30	12.50	1.40	30	14.00	13.25
45	1.60	30	16.00	2.30	30	23.00	19.50

DATA POINTS 39,40 - METER READINGS WERE OFF SCALE IN THE NEGATIVE DIRECTION AT THE 1000 METER SCALE.

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 4.

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 8/30/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #4

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
1	1.10	30	11.00	1.05	30	10.50	10.75
2	1.20	30	12.00	1.20	30	12.00	12.00
3	1.20	30	12.00	1.20	30	12.00	12.00
4	1.05	30	10.50	1.05	30	10.50	10.50
5	1.00	30	10.00	1.00	30	10.00	10.00
6	1.00	30	10.00	1.00	30	10.00	10.00
7	1.00	30	10.00	1.05	30	10.50	10.25
8	1.00	30	10.00	1.05	30	10.50	10.25
9	1.00	30	10.00	1.00	30	10.00	10.00
10	1.00	30	10.00	1.00	30	10.00	10.00
11	1.00	30	10.00	1.00	30	10.00	10.00
12	1.00	30	10.00	1.00	30	10.00	10.00
13	0.95	10	9.50	0.95	30	9.50	9.50
14	0.97	10	9.70	0.99	10	9.90	9.80
15	1.05	30	10.50	1.10	30	11.00	10.75
16	1.15	30	11.50	1.15	30	11.50	11.50
17	1.25	30	12.50	1.35	30	13.50	13.00
18	1.20	30	12.00	1.20	30	12.00	12.00
19	1.40	30	14.00	1.25	30	12.50	13.25

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 5.

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 9/1/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #5

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
1	0.85	10	8.50	0.84	10	8.40	8.45
2	0.86	10	8.60	0.85	10	8.50	8.55
3	0.82	10	8.20	0.79	10	7.90	8.05
4	0.77	10	7.70	0.76	10	7.60	7.65
5	0.73	10	7.30	0.70	10	7.00	7.15
6	0.73	10	7.30	0.71	10	7.10	7.20
7	0.75	10	7.50	0.74	10	7.40	7.45
8	0.73	10	7.30	0.70	10	7.00	7.15
9	0.72	10	7.20	0.70	10	7.00	7.10
10	0.60	10	6.00	0.60	10	6.00	6.00
11	0.55	10	5.50	0.56	10	5.60	5.55
12	0.52	10	5.20	0.51	10	5.10	5.15
13	0.54	10	5.40	0.51	10	5.10	5.25
14	0.55	10	5.50	0.54	10	5.40	5.45
15	0.64	10	6.40	0.61	10	6.10	6.25
16	0.70	10	7.00	0.69	10	6.90	6.95
17	0.80	10	8.00	0.81	10	8.10	8.05
18	0.93	10	9.30	0.90	10	9.00	9.15
19	0.80	10	8.00	0.78	10	7.80	7.90
20	0.71	10	7.10	0.71	10	7.10	7.10
21	0.57	10	5.70	0.55	10	5.50	5.60
22	0.45	10	4.50	0.44	10	4.40	4.45
23	0.44	10	4.40	0.44	10	4.40	4.40
24	0.50	10	5.00	0.49	10	4.90	4.95
25	0.52	10	5.20	0.50	10	5.00	5.10
26	0.55	10	5.50	0.54	10	5.40	5.45
27	0.48	10	4.80	0.47	10	4.70	4.75
28	0.44	10	4.40	0.43	10	4.30	4.35
29	0.40	10	4.00	0.40	10	4.00	4.00
30	0.40	10	4.00	0.40	10	4.00	4.00

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 5. (cont.)

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 9/1/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #5

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
31	0.40	10	4.00	0.40	10	4.00	4.00
32	0.40	10	4.00	0.38	10	3.80	3.90
33	0.39	10	3.90	0.37	10	3.70	3.80
34	0.37	10	3.70	0.36	10	3.60	3.65
35	0.36	10	3.60	0.35	10	3.50	3.55
36	0.34	10	3.40	0.73	10	7.30	5.35
37	0.38	10	3.80	0.38	10	3.80	3.80
38	0.42	10	4.20	0.39	10	3.90	4.05
39	0.43	10	4.30	0.42	10	4.20	4.25
40	0.46	10	4.60	0.45	10	4.50	4.55
41	0.49	10	4.90	0.47	10	4.70	4.80
42	0.62	10	6.20	0.63	10	6.30	6.25
43	0.53	10	5.30	0.53	10	5.30	5.30
44	0.48	10	4.80	0.41	10	4.10	4.45
45	0.47	10	4.70	0.46	10	4.60	4.65
46	0.47	10	4.70	0.45	10	4.50	4.60
47	0.45	10	4.50	0.45	10	4.50	4.50
48	0.45	10	4.50	0.45	10	4.50	4.50
49	0.46	10	4.60	0.43	10	4.30	4.45
50	0.42	10	4.20	0.42	10	4.20	4.20
51	0.41	10	4.10	0.41	10	4.10	4.10
52	0.33	10	3.30	0.34	10	3.40	3.35
53	0.36	10	3.60	0.63	10	6.30	4.95
54	0.36	10	3.60	0.63	10	6.30	4.95
55	0.37	10	3.70	0.36	10	3.60	3.65
56	0.39	10	3.90	0.39	10	3.90	3.90
57	0.42	10	4.20	0.42	10	4.20	4.20
58	0.44	10	4.40	0.45	10	4.50	4.45
59	0.43	10	4.30	0.43	10	4.30	4.30
60	0.40	10	4.00	0.40	10	4.00	4.00

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 5. (cont.)

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 9/1/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #5

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
61	0.40	10	4.00	0.39	10	3.90	3.95
62	0.33	10	3.30	0.32	10	3.20	3.25
63	0.32	10	3.20	0.32	10	3.20	3.20
64	0.30	10	3.00	0.30	10	3.00	3.00
65	0.29	10	2.90	0.28	10	2.80	2.85
66	0.30	10	3.00	0.30	10	3.00	3.00
67	0.31	10	3.10	0.33	10	3.30	3.20
68	0.37	10	3.70	0.33	10	3.30	3.50
69	0.34	10	3.40	0.34	10	3.40	3.40
70	0.37	10	3.70	0.37	10	3.70	3.70
71	0.31	3	0.31	0.49	10	4.90	2.61
72	0.47	10	4.70	0.47	10	4.70	4.70
73	0.40	10	4.00	0.40	10	4.00	4.00
74	0.37	10	3.70	0.37	10	3.70	3.70
75	0.33	10	3.30	0.32	10	3.20	3.25
76	0.34	10	3.40	0.36	10	3.60	3.50
77	0.42	10	4.20	0.43	10	4.30	4.25
78	0.48	10	4.80	0.47	10	4.70	4.75
79	0.56	10	5.60	0.54	10	5.40	5.50
80	0.49	10	4.90	0.48	10	4.80	4.85
81	0.60	10	6.00	0.60	10	6.00	6.00

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 6.

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 9/1/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #6

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
1	1.50	30	15.00	2.30	30	23.00	19.00
2	0.64	100	64.00	0.70	100	70.00	67.00
3	0.54	100	54.00	0.48	100	48.00	51.00
4	0.76	100	76.00	0.63	100	63.00	69.50
5	0.68	100	68.00	0.71	100	71.00	69.50
6	0.78	100	78.00	0.80	100	80.00	79.00
7	0.57	100	57.00	0.48	100	48.00	52.50
8	0.44	100	44.00	0.45	100	45.00	44.50
9	1.25	300	125.00	1.20	300	120.00	122.50
10	1.70	300	170.00	2.40	300	240.00	205.00
11	1.10	300	110.00	1.30	300	130.00	120.00
12	1.80	300	180.00	1.35	300	135.00	157.50
13	1.70	300	170.00	1.85	300	185.00	177.50
14	2.20	300	220.00	2.30	300	230.00	225.00
15	2.90	300	290.00	2.90	300	290.00	290.00
16	2.15	300	215.00	1.90	300	190.00	202.50
17	2.15	300	215.00	2.05	300	205.00	210.00
18	1.50	300	150.00	1.40	300	140.00	145.00
19	2.15	30	21.50	1.95	300	195.00	108.25
20	2.35	300	235.00	1.90	300	190.00	212.50
21	1.40	300	140.00	1.50	300	150.00	145.00
22	1.35	300	135.00	1.30	300	130.00	132.50
23	1.10	300	110.00	1.20	300	120.00	115.00
24	1.95	300	195.00	2.20	300	220.00	207.50
25	-	-	-	-	-	-	-
26	0.79	100	79.00	1.00	300	100.00	89.50

DATA POINT 25 - METER READING OFF SCALE IN THE NEGATIVE DIRECTION FOR THE 1000 METER SCALE READING.

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Table 7.

TERRAIN CONDUCTIVITY DATA SHEET

GEONICS EM31 - QUADRATURE-PHASE COMPONENT SURVEY

CLIENT - GIBBS & HILL OPERATOR(S)- DAY, SHEEHAN

SURVEY DATE - 9/1/88

LOCATION -SAUGERTIES LANDFILL NYSDEC # 356003

COMMENTS -WEATHER - MILD, SUNNY

PERIMETER SURVEY LOOP #7

DATA POINT NAME	"p"(1) METER READING	METER SCALE	"p" READING (mmhos/m)	"t"(2) METER READING	METER SCALE	"t" READING (mmhos/m)	AVERAGE READING (mmhos/m)
1	2.45	300	245.00	2.35	300	235.00	240.00
2	0.34	1000	340.00	0.30	1000	300.00	320.00
3	2.35	300	235.00	2.25	300	225.00	230.00
4	1.70	300	170.00	1.95	300	195.00	182.50
5	1.75	300	175.00	1.95	300	195.00	185.00
6	2.50	300	250.00	2.00	300	200.00	225.00
7	2.15	300	215.00	2.50	300	250.00	232.50
8	1.35	300	135.00	1.60	300	160.00	147.50
9	2.20	300	220.00	2.10	300	210.00	215.00
10	1.90	300	190.00	1.00	300	100.00	145.00
11	2.05	300	205.00	2.05	300	205.00	205.00
12	2.60	300	260.00	2.40	300	240.00	250.00
13	2.00	300	200.00	1.65	300	165.00	182.50

(1) - READING TAKEN WITH INSTRUMENT AXIS IN A NORTH-SOUTH DIRECTION.
(2) - READING TAKEN WITH INSTRUMENT AXIS IN AN EAST-WEST DIRECTION.

Assuming that the depth to ground water as reported by the NYSDEC is accurate, the EM-31 data most likely reflect conditions in the unsaturated zone.

The conductivity survey data obtained from the landfill perimeter were uniform and generally less than 20 mmhos/m. Data from the current working face area were uniformly higher and suggest that the fill material has a higher conductance than the native soils.

EM-31 data for the western portion of the site are presented on Figure 5. Measurements along the perimeter of the working face area ranged from 5 to 22 mmhos/m. Those taken at the interior of the working face area were uniformly higher, ranging from 13 to 320 mmhos/m. Measurement 25 from survey loop 6 and measurement 17 from loop 1 showed instrument response typically observed near buried or surface metal objects.

EM-31 data for the northern portion of the site are presented on Figure 6. The measurements are relatively uniform ranging from 6 to 22 mmhos/m. Measurement 9 from survey loop 2 and measurements 39 and 40 from loop 3 showed conductivity measurements typically observed near buried or surface metal objects.

EM-31 data for the eastern portion of the site are presented on Figure 7. Measurements ranged from 3 to 51 mmhos/m in this area with only two greater than 16 mmhos/m. Measurements 45, 47, 53 from survey loop 2 showed instrument response typically observed near buried or surface metal objects.

EM-31 data for the southern portion of the site are presented on Figure 8. Measurements along the perimeter of the area ranged from 3 to 9 mmhos/m while those taken during survey 6 and survey 7 were higher, ranging to 290 mmhos/m. Measurements 39-41, 49, 57-62, from survey loop 1 showed conductivity measurements typically observed near buried or surface metal objects.

Resistivity

The resistivity survey was conducted using six multi-depth soundings. Locations and orientations of electrode arrays are shown on Figure 2. Data are presented in Tables 8 through 13 and Figures 9 through 14.

Depth to groundwater was projected in the Phase II Work Plan to be about 20 feet below ground surface.

The purpose of conducting the resistivity soundings was to locate horizontal and vertical variations which may indicate changes in ground-water quality due to the landfill. Landfill leachate will typically result in decreased resistivity in the saturated zone.

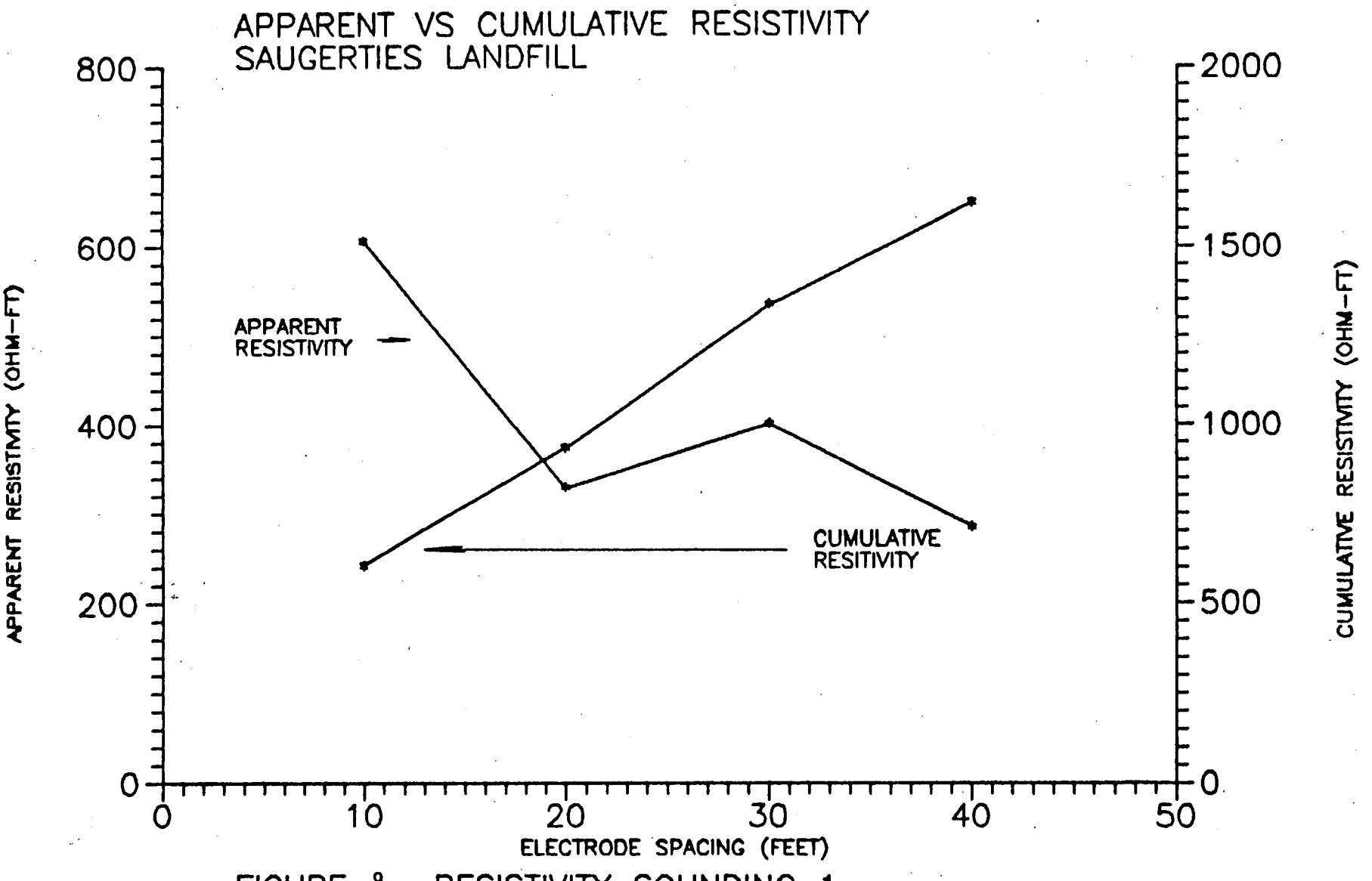


FIGURE 9. RESISTIVITY SOUNDING 1

95-A

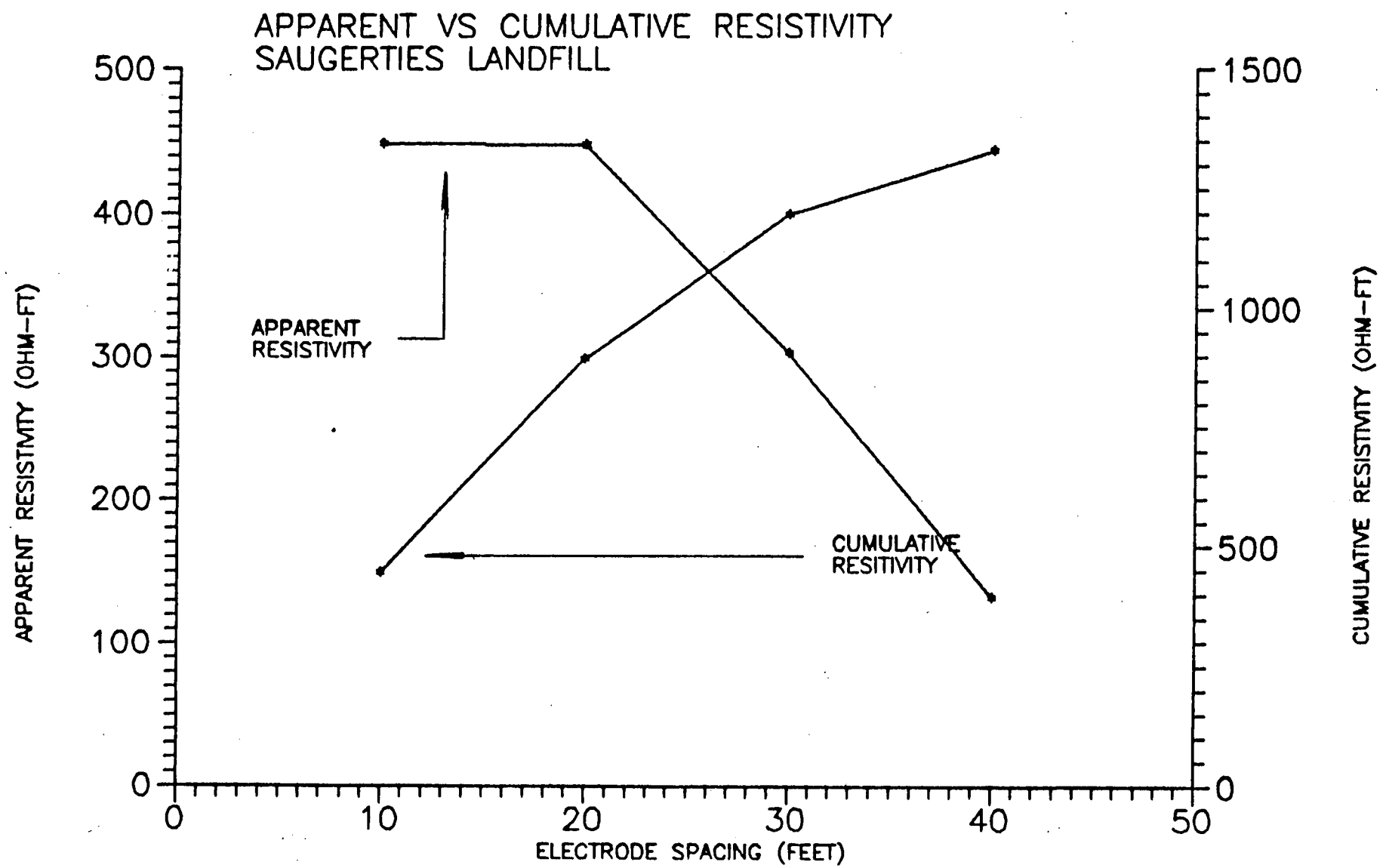


FIGURE 10. RESISTIVITY SOUNDING 2

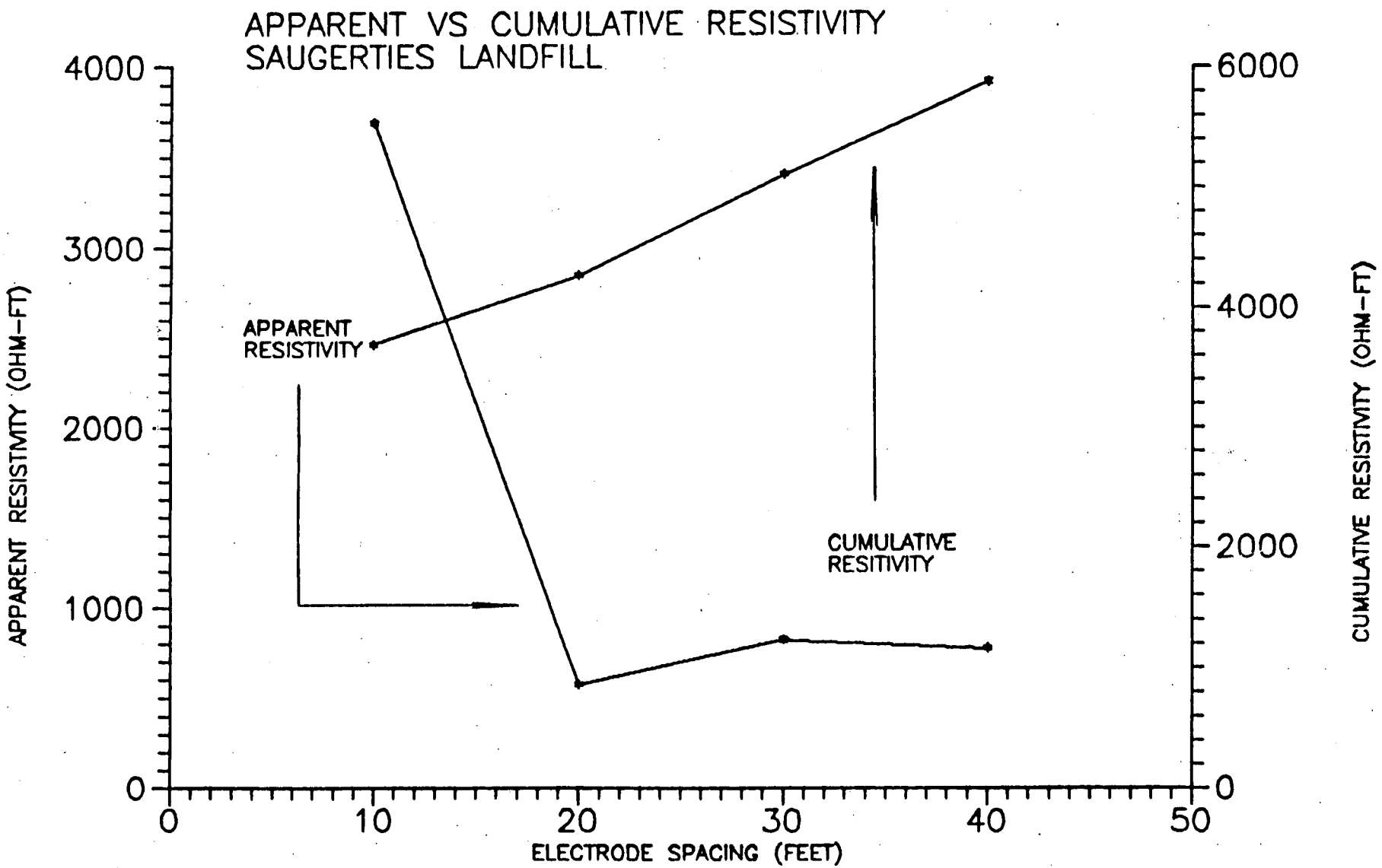


FIGURE 11. RESISTIVITY SOUNDING 3

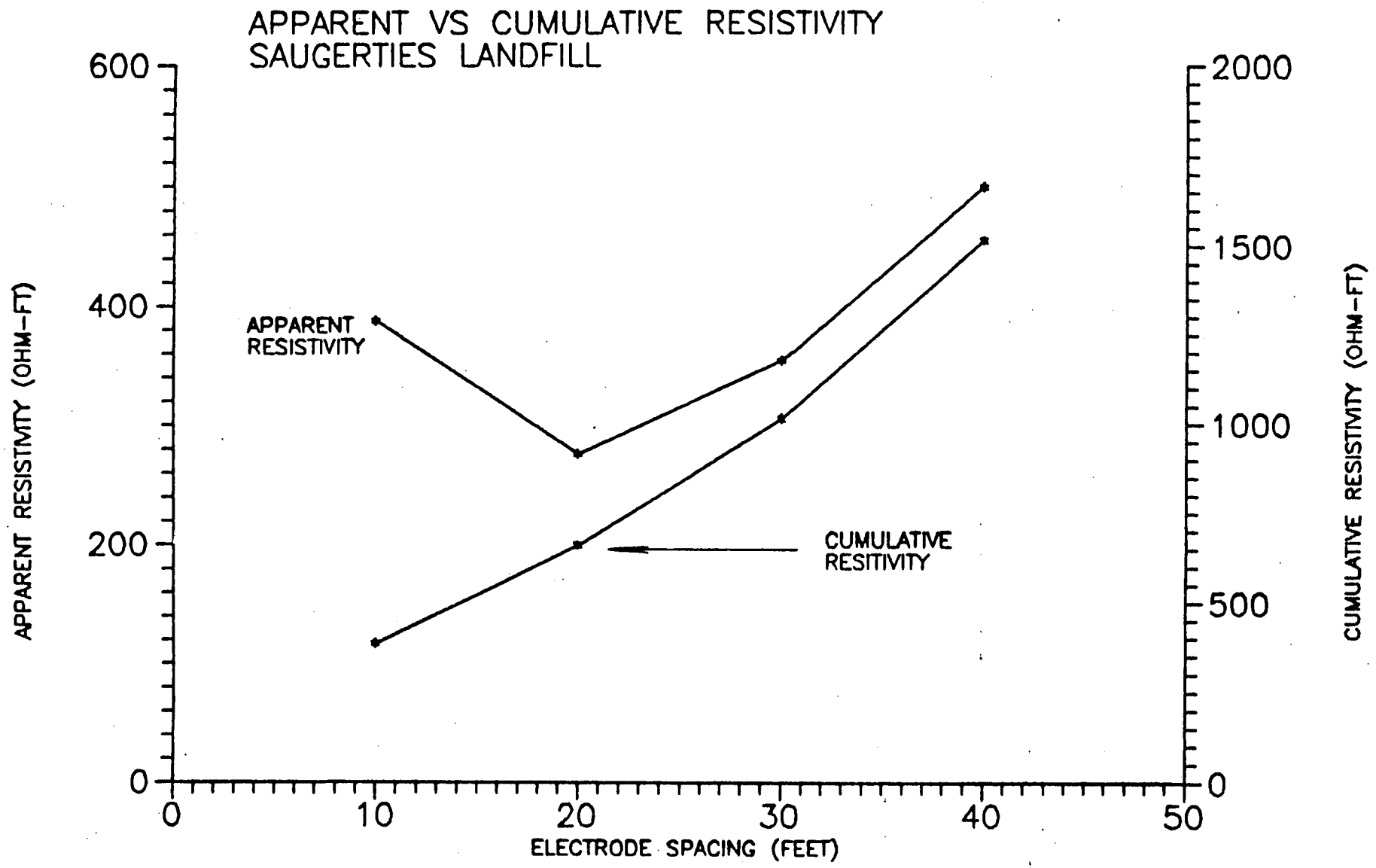


FIGURE 12. RESISTIVITY SOUNDING 4

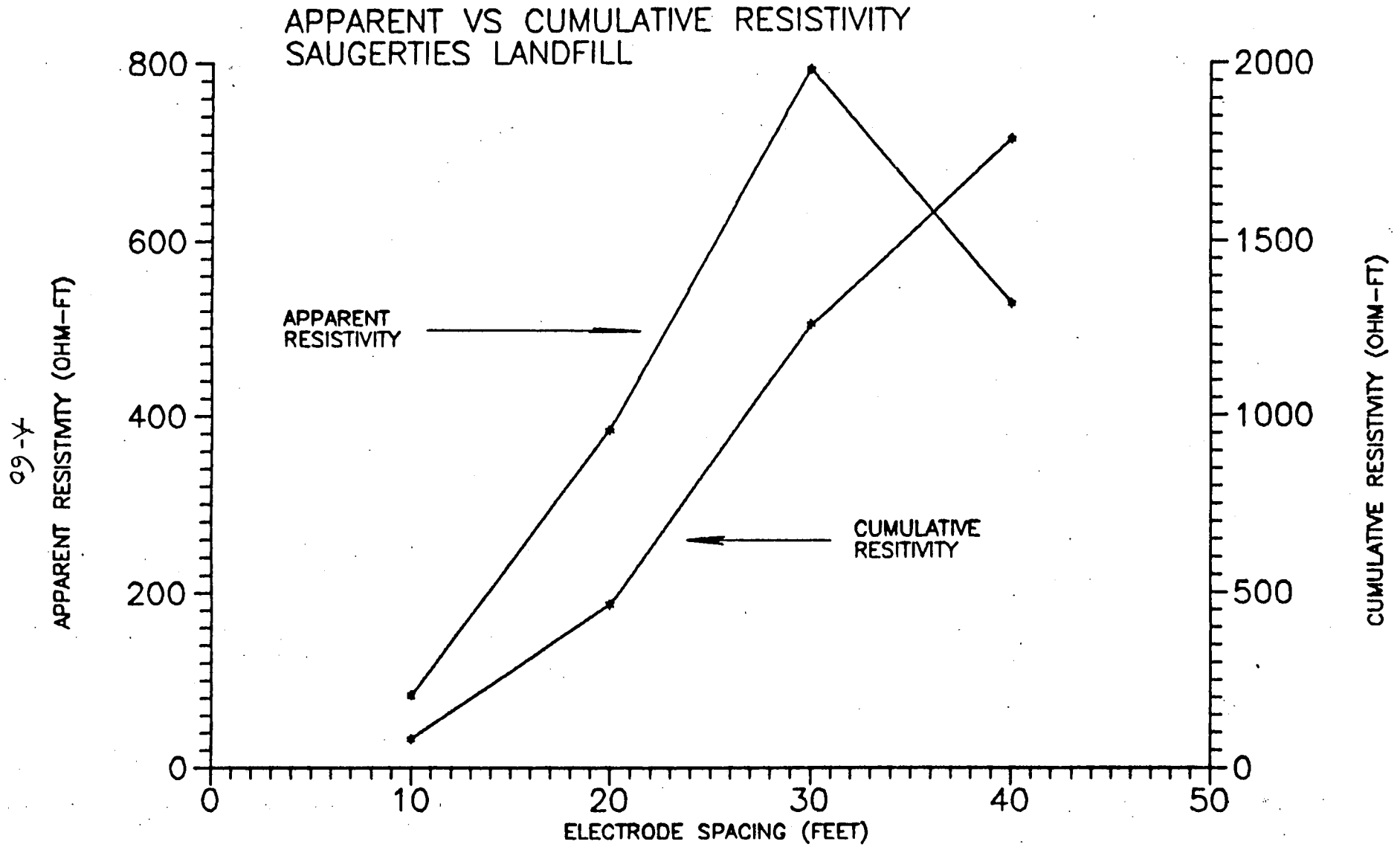


FIGURE 13. RESISTIVITY SOUNDING 5

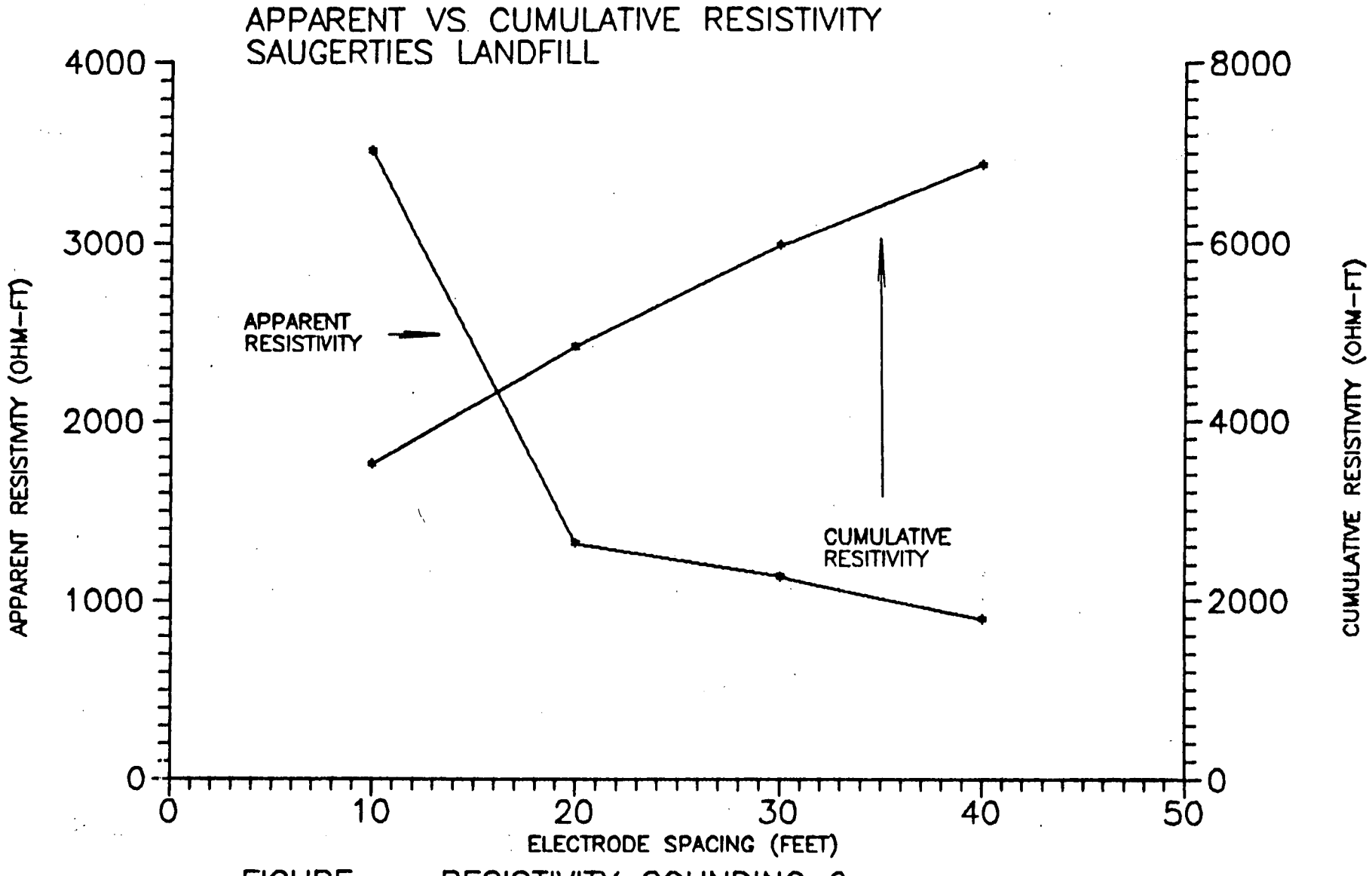


FIGURE 14. RESISTIVITY SOUNDING 6

Table 8.

RESISTIVITY DATA SHEET

SOUNDING SURVEY
RISON 2350-B (WENNER ARRAY - LEE ELECTRODE ARRANGEMENT)

APPARENT RESISTIVITY = K(V/I)
(K = 2 a)

CLIENT - GIBBS AND HILL, INC. OPERATOR - BAY, SHEEHAN

DATE - AUGUST 30, 1988 ARRAY AZIMUTH SEE ATTACHED FIGURE

LOCATION - SAUGERTIES LANDFILL, SOUNDING # 1

COMMENTS - LOCATION OF CENTER ELECTRODE: SHOWN ON THE ATTACHED SITE FIGURE.

WEATHER: WARM, SUNNY

	LEE LEFT			LEE RIGHT			FULL			
[a] ELECTRODE SPACING (FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	CUMULATIVE RESISTIVITY (OHM-FT)
10	363	0.10	363	202	0.10	202	607	0.10	607	607
20	714	0.01	143	922	0.01	184	165	0.10	330	937
30	683	0.01	205	634	0.01	190	134	0.10	402	1,339
40	354	0.01	142	514	0.01	206	712	0.01	285	1,624

Table 9.

RESISTIVITY DATA SHEET

SOUNDING SURVEY
BISON 2350-B (WENNER ARRAY - LEE ELECTRODE ARRANGEMENT)

APPARENT RESISTIVITY = K(V/I)
(K = 2 a)

CLIENT - GIBBS AND HILL, INC.

OPERATOR - DAY, SHEEHAN

DATE - AUGUST 31, 1988

ARRAY AZIMUTH SEE ATTACHED FIGURE

LOCATION - SAUGERTIES LANDFILL, SOUNDING # 2

COMMENTS - LOCATION OF CENTER ELECTRODE: SHOWN ON THE ATTACHED SITE FIGURE.

WEATHER: WARM, SUNNY

	LEE LEFT			LEE RIGHT			FULL			
[a] ELECTRODE SPACING X (FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	CUMULATIVE RESISTIVITY (OHM-FT)
10	229	0.10	229	222	0.10	222	449	0.10	449	449
20	112	0.10	224	112	0.10	224	224	0.10	448	897
30	650	0.01	195	761	0.01	228	101	0.10	303	1,200
40	181	0.01	72	562	0.01	225	329	0.01	132	1,332

Table 10.

RESISTIVITY DATA SHEET

SOUNDING SURVEY
BISON 2350-B (WENNER ARRAY - LEE ELECTRODE ARRANGEMENT)

APPARENT RESISTIVITY = K(V/I)
(K = 2 a)

CLIENT - GIBBS AND HILL, INC. OPERATOR - DAY, SHEEHAN

DATE - AUGUST 31, 1988 ARRAY AZIMUTH SEE ATTACHED FIGURE

LOCATION - SAUGERTIES LANDFILL, SOUNDING # 3

COMMENTS - LOCATION OF CENTER ELECTRODE: SHOWN ON THE ATTACHED SITE FIGURE.

WEATHER: WARM, SUNNY

	LEE LEFT			LEE RIGHT			FULL			
[a] ELECTRODE SPACING (FT)	[2 V/I] DIAL READING (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	CUMULATIVE RESISTIVITY (OHM-FT)
10	239	1.00	2,390	112	1.00	1,120	370	1.00	3,700	3,700
20	290	0.10	580	189	0.10	378	289	0.10	578	4,278
30	159	0.10	477	179	0.10	537	276	0.10	828	5,106
40	967	0.01	387	138	0.10	552	194	0.10	776	5,882

Table 11.

RESISTIVITY DATA SHEET

SOUNDING SURVEY
BISON 2350-B (WENNER ARRAY - LEE ELECTRODE ARRANGEMENT)

APPARENT RESISTIVITY = K(V/I)
(K = 2 a)

CLIENT - GIBBS AND HILL, INC. OPERATOR - BAY, SHEEHAN

DATE - AUGUST 31, 1988 ARRAY AZIMUTH SEE ATTACHED FIGURE

LOCATION - SAUGERTIES LANDFILL, SOUNDING # 4

COMMENTS - LOCATION OF CENTER ELECTRODE: SHOWN ON THE ATTACHED SITE FIGURE.

WEATHER: WARM, SUNNY

	LEE LEFT			LEE RIGHT			FULL			
[a] ELECTRODE SPACING (FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	CUMULATIVE RESISTIVITY (OHM-FT)
10	152	0.001	2	242	0.001	2	388	0.10	388	388
20	699	0.010	140	654	0.010	131	138	0.10	276	664
30	673	0.010	202	447	0.010	134	118	0.10	354	1,018
40	686	0.010	274	541	0.010	216	125	0.10	500	1,518

Table 12.

RESISTIVITY DATA SHEET

SOUNDING SURVEY
BISON 2350-B (WENNER ARRAY - LEE ELECTRODE ARRANGEMENT)

APPARENT RESISTIVITY = K(V/I)
(K = 2 a)

CLIENT - GIBBS AND HILL, INC. OPERATOR - BAY, SHEEHAN

DATE - AUGUST 31, 1988 ARRAY AZIMUTH SEE ATTACHED FIGURE

LOCATION - SAUGERTIES LANDFILL, SOUNDING # 5

COMMENTS - LOCATION OF CENTER ELECTRODE: SHOWN ON THE ATTACHED SITE FIGURE.

WEATHER: WARM, SUNNY

	LEE LEFT			LEE RIGHT			FULL			
[a] ELECTRODE SPACING (FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING X (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	CUMULATIVE RESISTIVITY (OHM-FT)
10	473	0.01	47	126	0.10	126	828	0.01	83	83
20	829	0.01	166	108	0.10	216	192	0.10	384	467
30	650	0.01	195	210	0.10	630	264	0.10	792	1,259
40	523	0.01	209	720	0.01	288	132	0.10	528	1,787

Table 13.

RESISTIVITY DATA SHEET

SOUNDING SURVEY
BISON 2350-B (WENNER ARRAY - LEE ELECTRODE ARRANGEMENT)

APPARENT RESISTIVITY = K(V/I)
(K = 2 a)

CLIENT - GIBBS AND HILL, INC. OPERATOR - DAY, SHEEHAN

DATE - AUGUST 31, 1988 ARRAY AZIMUTH SEE ATTACHED FIGURE

LOCATION - SAUGERTIES LANDFILL, SOUNDING # 6

COMMENTS - LOCATION OF CENTER ELECTRODE: SHOWN ON THE ATTACHED SITE FIGURE.

WEATHER: WARM, SUNNY

	LEE LEFT			LEE RIGHT			FULL			
[a] ELECTRODE SPACING (FT)	X [2 V/I] DIAL READING (OHMS)	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING (OHMS) X	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	[2 V/I] DIAL READING (OHMS) X	SCALE MULT. =	[2 a(V/I)] APPARENT RESISTIVITY (OHM-FT)	CUMULATIVE RESISTIVITY (OHM-FT)
10	150	1.00	1,500	186	1.00	1,860	352	1.00	3,520	3,520
20	340	0.10	680	293	0.10	586	662	0.10	1,324	4,844
30	178	0.10	534	168	0.10	504	380	0.10	1,140	5,984
40	118	0.10	472	938	0.01	375	224	0.10	896	6,880

The highest resistivity measurements were obtained at soundings 3 and 6 which are located in the presumed downgradient direction. Resistivity of the saturated zone can be represented as an average of the 30 and 40 foot electrode spacing measurements. The lowest average resistivity for this interval was recorded at sounding 2.

The resistivity data may reflect several factors such as lithology and water quality. The horizontal distributions for the average of the 30 and 40 foot electrode spacing measurements may be due to lithologic variations across the site. They may also reflect ground-water quality, or they could be influenced by areal changes in depth to the water table across the site. Under the last assumption, sounding 6 would have the greatest thickness of unsaturated material, sounding 1, the least. It is likely that several of these factors are influencing the resistivity data.

Sounding 1 was conducted along Route 212 near the proposed location for GW-1 which is, according to the NYSDEC work plan, located in the upgradient direction with respect to ground-water flow. The data show a decreasing trend with depth and measurements ranged from 607 ohm-ft to 285 ohm-ft.

Sounding 2 data show a decreasing trend with depth ranging from 449 ohm-ft to 132 ohm-ft. This sounding is located near the site proposed by NYSDEC for GW-4.

Sounding 3 is situated in a presumably cross gradient area to the south west of the working face area readings fluctuated. There is a sharp decline between the 10 and 20 foot electrode spacings followed by somewhat stable measurements. Apparent resistivities ranged from 3,700 ohm-ft to 578 ohm-ft.

Sounding 4 is, along with sounding 6, located in the presumed downgradient direction. Apparent resistivities, which showed no trend with depth, ranged from 276 ohm-Ft to 500 ohm-ft.

Sounding 5 is oriented approximately perpendicular to the ground-water flow gradient reported by the NYSDEC in the phase II work plan and is located in the eastern portion of the site near a ponded water area. There was an increase in resistivity between the 10 and 20 foot electrode spacing followed by stabization measurements ranged from 83 ohm-ft to 792 ohm-ft.

Sounding 6 showed a decreasing trend with depth. Readings ranged from 3,520 ohm-ft to 896 ohm-ft.

The resistivity data do not suggest that a conductive ground-water plume is present at the site. Therefore, the direction of ground water flow cannot be inferred.

SUMMARY OF FINDINGS

1) Results of the geophysical survey indicate that there are no buried ferromagnetic objects in the vicinity of the proposed monitoring wells.

2) The terrain conductivity data identified the extent of fill material and located various sites where buried metallic objects may be located.

3) The resistivity data could not be used to identify a conductive ground-water plume. As a result, the data could not be used to infer the direction of ground-water flow.

Respectfully Submitted,
ROUX ASSOCIATES, INC.

Peter C. Breen
Hydrogeologist

Paul H. Roux
President

V. DRILLING PROTOCOLS

The monitoring wells will be drilled in the following order:

(1) GW-1
(2) GW-2
(3) GW-3
(4) GW-4

See Appendix A for drilling protocols.

VI. SAMPLING PROTOCOLS

OTHER SAMPLES

SPLIT SPOON SAMPLES

A maximum of one split spoon sample will be taken from each monitoring well for chemical analysis. The selection of each sample will be determined as follows:

1. A PID reading shall be recorded for each split spoon sample from each well.

2. If the PID reading of the sample is less than 5.0 ppm then the sample shall be discarded in the same manner as the drilling cuttings.

   If the PID reading of the sample is greater than or equal to 5.0 ppm then the sample shall be placed in an appropriate container for possible chemical analysis.

3. If all samples obtained from the installation of a well have PID readings less than 5.0 ppm then no sample from that well shall be submitted to the laboratory for chemical analysis.

   If one sample obtained from the installation of a well has a PID reading greater than or equal to 5.0 ppm then that sample from that well shall be submitted to the laboratory for chemical analysis.

   If more than one sample obtained from the installation of a well have PID readings greater than or equal to 5.0 ppm then that sample from that well that had the greatest reading shall be submitted to the laboratory for chemical analysis. All other samples shall be discarded in the same manner as the drilling cuttings.

Those samples sent to the laboratory for analysis shall not be accompanied by a trip or field blank. The laboratory analysis of these samples shall not include a matrix spike or duplicate.

GRAIN SIZE SAMPLES

One soil sample shall be collected from each monitoring well to be analyzed for grain size distribution. These samples shall be taken from the last spilt spoon sample of each well.

VII. HEALTH & SAFETY PLAN

V. SITE SPECIFIC HEALTH AND SAFETY PLAN

A. GENERAL INFORMATION

SITE NAME: Saugerties Landfill NY ID. NO.: 356 003

LOCATION: Town of Saugerties

CONTACT NAME: Ms Gloria Shevel, Town Supervisor

ADDRESS: Main St., Saugerties, NY 12477

PHONE NO: (914) 246-5657

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: The 15- acre active municipal landfill. There are also few industries that dump in the landfill The landfill in not allowed to accept hazardous industrial wastes or septic sludges

PHASE I COMPLETED: YES X NO _____

STATUS: ACTIVE X INACTIVE _____ UNKNOWN _____

POSSIBLE CONTAMINANTS: Iron, Manganese and Zinc

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: 25 ft around monitoring wells

Site Secured Yes ____ No X

Sketch attached Yes X No _____

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: Kingston Hospital

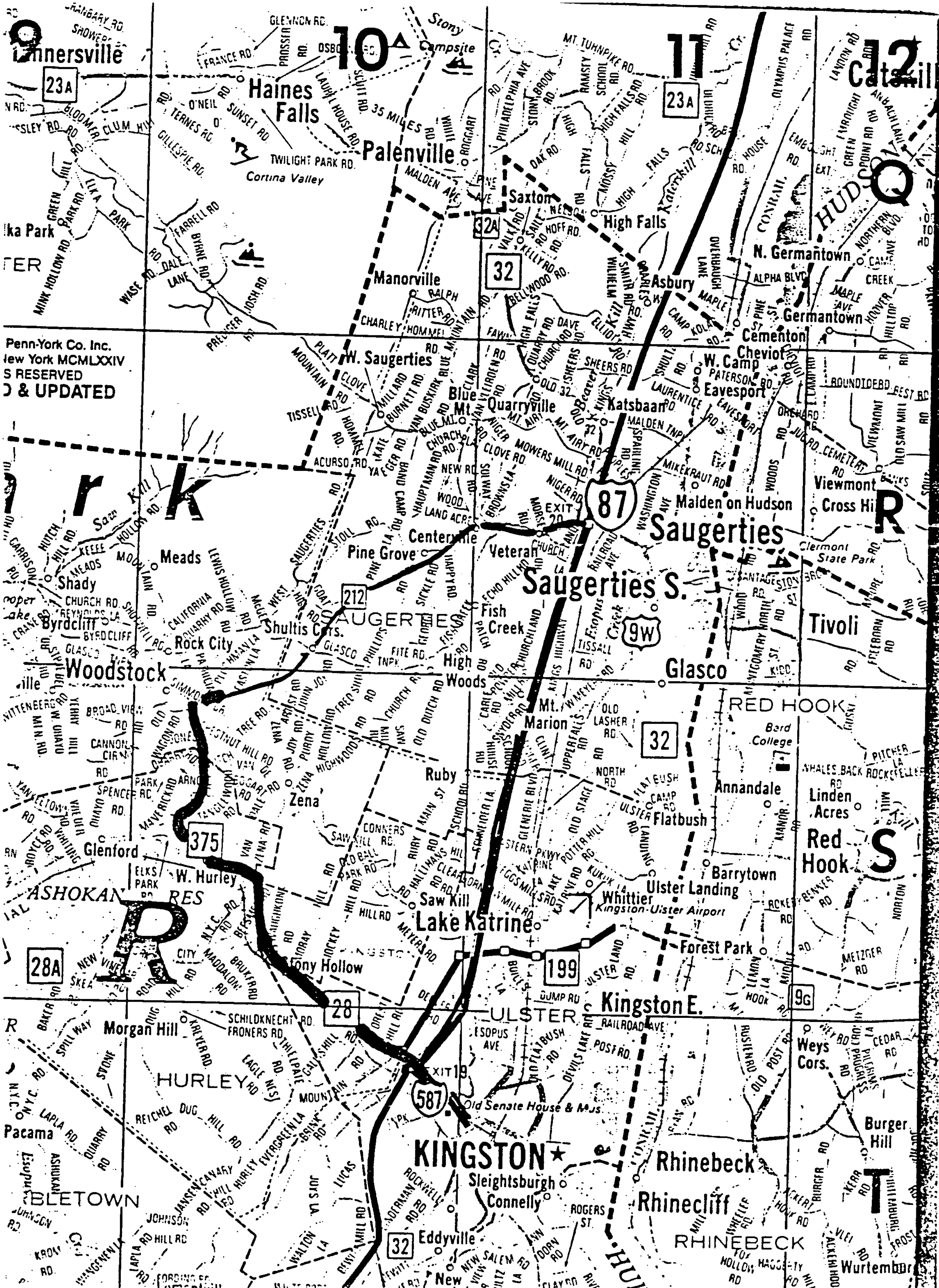
Has the hospital been contacted? Yes X No ____
Do they handle chemical accidents? Yes X No ____
Do they have an emergency room? Yes X No ____
What are business hours? 24 HRS
General telephone: (914) 331-3131
Emergency room telephone: ____
Location: 396 Broadway, Kingston

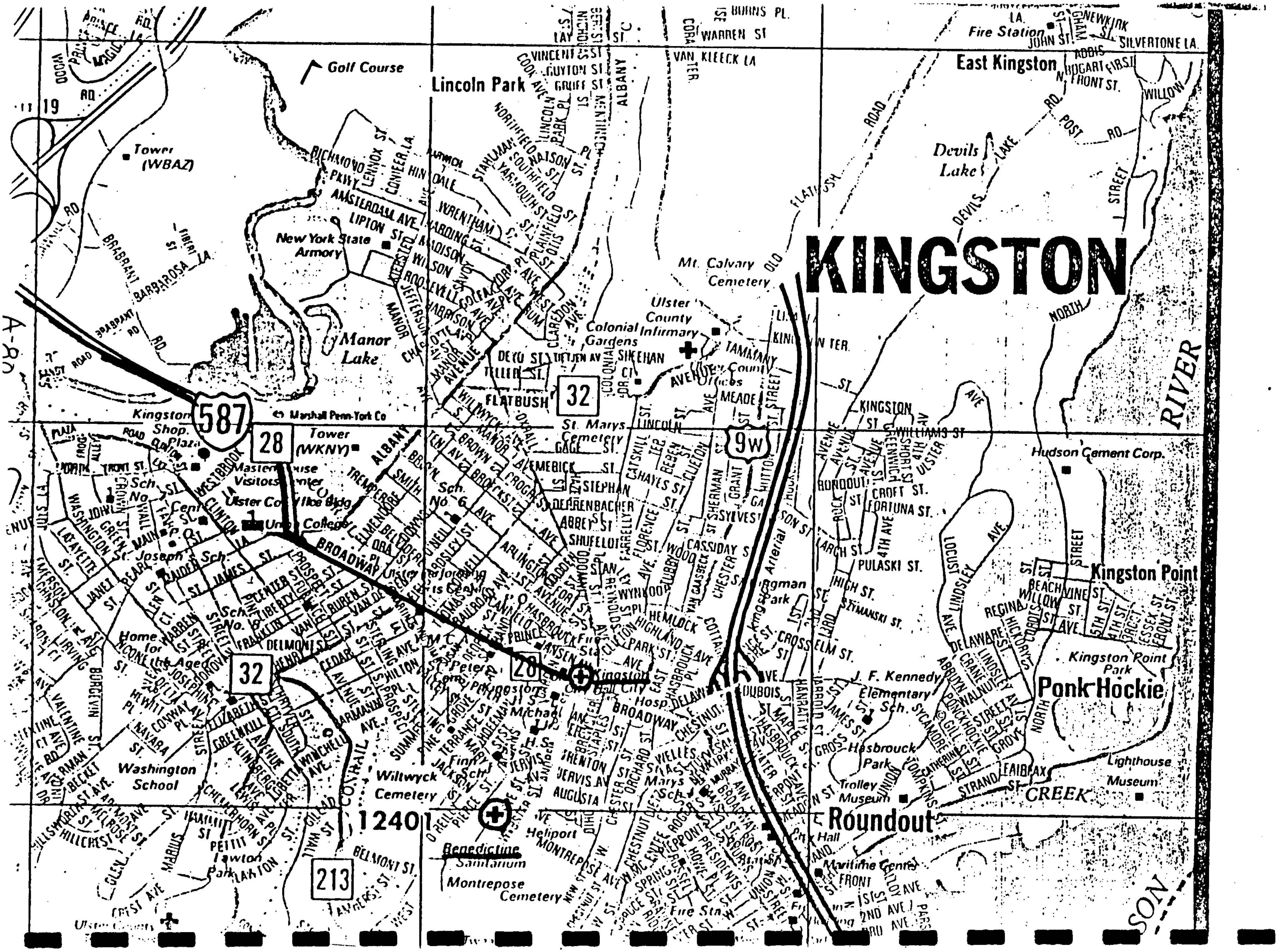
Site to hospital route: Take Rt 212 W. To 32. Take RT 375 To RT 28 East and proceed on RT 28 East To Kingston.

Is the route map attached: Yes X No ____
Nearest Site Phone Location: Landfill Office
Phone Direction/Map Attached: Yes ____ No X

	Phone No.
• Ambulance	246-5660
• Police	246-9800
• Fire Department	331-1813
• Posion 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


9
10
11
12
Haines Falls
Palenville
Saxton
High Falls
Manorville
Asbury
N. Germantown
Germantown
Cementon
Cheviot
W. Camp
Eavesport
W. Saugerties
Blue Mt.
Quarryville
Katsbaan
Malden on Hudson
Viewmont
Cross Hill
Saugerties
Clermont State Park
Centerville
Veteran
Pine Grove
Saugerties S.
Meads
Shady
Byrdcliff
Shultis Cors.
Rock City
Woodstock
Fish Creek
High Woods
Glasco
Tivoli
RED HOOK
Bard College
Mt. Marion
Ruby
Zena
Annandale
Linden Acres
Flatbush
Red Hook
Glenford
W. Hurley
Barrytown
Ulster Landing
Whittier
Kingston-Ulster Airport
Saw Kill
Lake Katrine
Forest Park
Stony Hollow
Kingston E.
Morgan Hill
HURLEY
Weys Cors.
Old Senate House & Mus.
KINGSTON
Rhinebeck
Sleightsburgh
Connelly
Rhinecliff
Eddyville
RHINEBECK
Pacama
Burger Hill
Wurtemburg
Cortina Valley
Campsite
Penn-York Co. Inc.
New York MCMLXXIV
S RESERVED
D & UPDATED
ASHOKAN RES
SAUGERTIES
ULSTER
23A
32A
32
87
212
9W
375
28A
28
199
9G
587
EXIT 20
EXIT 19


KINGSTON
Golf Course
Lincoln Park
East Kingston
Fire Station
Devils Lake
Tower (WBAZ)
New York State Armory
Manor Lake
Mt. Calvary Cemetery
Ulster County Infirmary
Colonial Gardens
FLATBUSH
587
28
32
9W
213
Tower (WKNY)
Kingston Shop. Plaza
St. Marys Cemetery
© Marshall Penn-York Co
Hudson Cement Corp.
RIVER
Kingston Point
Kingston Point Park
Ponk Hockie
BROADWAY
J. F. Kennedy Elementary Sch.
Hasbrouck Park
Lighthouse Museum
Trolley Museum
CREEK
Roundout
Maritime Center
Washington School
Wiltwyck Cemetery
12401
Heliport
Benedictine Sanitarium
Montrepose Cemetery
CONRAIL

APPENDIX B

TEST BORINGS AND MONITORING WELLS

B.1 PROCEDURES

1. Drilling and Well Installation

Monitoring wells were drilled and installed to provide data pertinent to both water chemistry and characterization of the stratigraphy and groundwater regime at the site. Drilling was performed by Empire Soil Investigation, Inc. Monitoring well MW-1 was installed at presumed upgradient location. This well was drilled to provide a representative sample of the groundwater flowing into the area. Three additional monitoring wells were drilled to monitor downgradient flow direction and water quality.

Monitoring wells were installed by drilling a 6-inch roller bit socket for 5 feet then a 3-inch Nx coring for the remaining depth. The Nx core drilling was continued until enough pores were opened in the well to provide us with sufficient water for sampling. The construction of each well consisted of a 3-inch diameter Nx core portion of the rock well at the bottom and the rest was constructed of a 4-inch flush joint PVC riser in the 6-inch socket extended 2 ½ feet above the ground surface. Subsequently each well socket was packed with ¼-inch size bentonite pellets up to 2 feet. The remaining annular space was filled with a cement/bentonite grout. Steel protective casing

(with locking cap) was set over each monitoring well riser and secured into the ground with 18"x18" sand/cement concrete pad. The concrete pad was provided with a slope to drain surface runoff. See Appendix B.2 for schematic diagram of each well.

Nx coring samples were collected for the purpose of rock characterization. Rock sample descriptions and their recovery records for all wells are shown in the boring logs (Appendix B).

Each well was developed by pumping out the groundwater to remove a maximum practical quantity of sediment and other fine particles deposited during the drilling process in order to revive the original condition of the rock formation and to produce satisfactory sediment-free water for sampling purposes. Each well was developed for a minimum of 30 minutes. A nephelometer was used to measure the clarity level of groundwater during development. The result of turbidity is given in drilling summary sheets. The complete drilling data is summarized in drilling the logs.

Inertial Pump

The pump is composed of a one-piece molded ABS plastic body foot valve, 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 in pulses and ultimately discharge at the surface.

2. Slug Test

The slug test was performed to determine in situ hydraulic conductivity values. 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 disposable propylene suspension cord filled with distilled water.

The rate of the groundwater level change was recorded by measuring the depth to the water below the top of the casing after the start of the test until the original level of the water table was 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 were 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

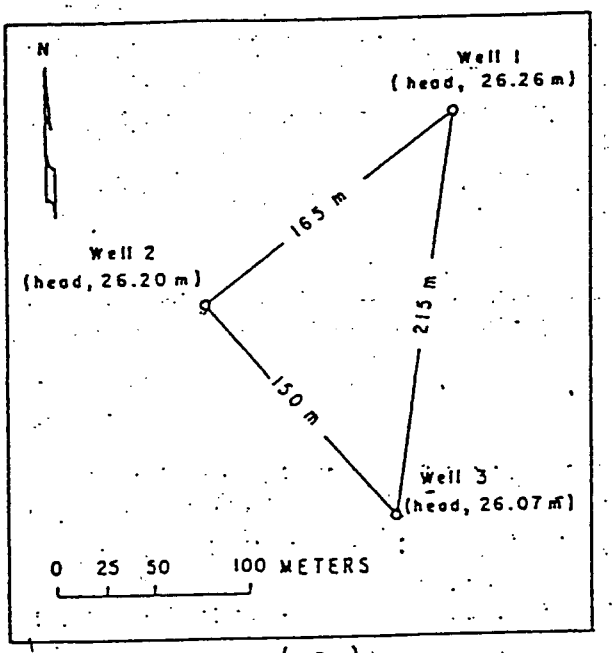
h= water level at time t, cm

t= elapsed time, sec.

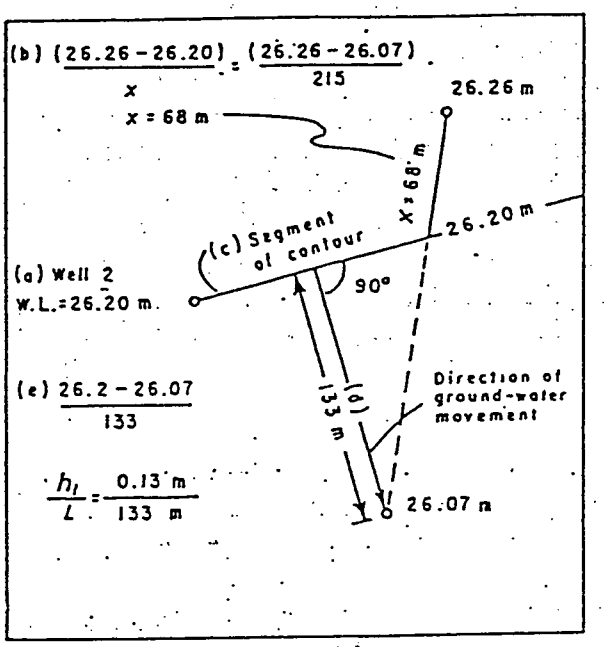
(R. Allan Freeze and J.A. Cherry, Groundwater, Prentice Hall Inc., pg. 339)

Determination of Groundwater Flow Direction

The following diagrams present the triangulation method for determinating groundwater flow direction.



(2)



(3)

Both the direction of ground-water movement and the hydraulic gradient can be determined if the following data are available for three wells located in any triangular arrangement such as that shown on sketch 2:

1. The relative geographic position of the wells.
2. The distance between the wells.
3. The total head at each well.

Steps in the solution are outlined below and illustrated in sketch 3:

a. Identify the well that has the intermediate water level (that is, neither the highest head nor the lowest head).

b. Calculate the position between the well having the highest head and the well having the lowest head at which the head is the same as that in the intermediate well.

c. Draw a straight line between the intermediate well and the point identified in step *b* as being between the well having the highest head and that having the lowest head. This line represents a segment of the water-level contour along which the total head is the same as that in the intermediate well.

d. Draw a line perpendicular to the water-level contour and through either the well with the highest head or the well with the lowest head. This line parallels the direction of ground-water movement.

e. Divide the difference between the head of the well and that of the contour by the distance between the well and the contour. The answer is the hydraulic gradient.

(Source: US Dept. of the Interior, US Geological Survey, Water Supply Paper 2220, pp. 11)

B.2 RESULTS

DRILLING SUMMARY REPORT

Site Name: Saugerties Landfill
Site ID No.: 356003
Date: 2/6/89 to 2/21/89
Present: M. Valentino (G&H)

WELL SUMMARY

1. Relocation of Well

MW-1	No Change
MW-2	No Change
MW-3	No Change
MW-4	No Change

2. Well Data

Well No.	Boring Depth (ft.)	Depth to Water (ft.)* (1)	(2)
MW-1	27.00	8.98	9.67
MW-2	28.67	16.50	16.83
MW-3	27.58	12.30	12.84
MW-4	26.67	7.50	9.65
MW-N	Unknown	--	3.03
MW-S	Unknown	--	1.14

* Depth to water refers to feet below surface
(1) Measured on 2/29/89
(2) Measured on 1/12/90

3. Well Development

Each well developed more than 1 hour by an inertial pump.

4. In-Situ Conductivity Test

Well No.	Conductivity, cm/sec.
MW-1	9×10^{-3}
MW-2	7×10^{-2}
MW-3	1×10^{-1}
MW-4	8×10^{-2}

BORING LOG

Sheet of

PROJECT: PROJECT NO. BORING NO. MW-1

Location: Saugerties Coord: Ground Elev:

Contractor: Date Started: 2/6/89 G.W.L. Hour: Date:

Inspector: Date Completed: 2/8/89 G.W.L. 9'-3" Hour: Date:

Notes:

Depth Ft.	Elev. Ft.	Sample Type & No.	Test Type & No.	Blows Casing Per Ft.	Blows Sampler 6"	Blows Sampler 6"	Recovery %	ROD %	H-Nu	Graphic Symbol	Description and Remarks
0		SS-1							0.2		6" boring down to 5 ft. Cuttings were red then turned to green. No sample taken.
5		SS-2					33"		0.2		Green friable shale w/some red. Some red clay present.
10		SS-3					55"		0.2		Red shale mixed with some green shale.
15		SS-4					60"		0.2		Red shale with some green shale Fractured areas are not stained. Possible water bearing zone.
20		SS-5					57"		0.2		Red shale w/two 3" clay seams.
25		SS-6					40"		0.2		Gray-green shale w/one clay seam
27											
0											
5											
0											

I.D. Casing	Wgt. Hammer on Casing	Material Notations
I.D. Spoon	Wgt. Hammer on Spoon	
Type Core Drill	Drop Hammer on Casing	
Core Dia.	Drop Hammer on Spoon	
Sample & Test Notations		

Gibbs & Hill, Inc.

BORING LOG

Sheet of

PROJECT: PROJECT NO. BORING NO. MW-2

Location: Saugerties Coord: Ground Elev:

Contractor: Date Started: 2/9/89 G.W.L. Hour: Date:

Inspector: Date Completed: 2/13/89 G.W.L. 18'3" Hour: Date: 2/13/89

Notes:

Depth Ft.	Elev. Ft.	Sample Type & No.	Test Type & No.	Blows Casing Per Ft.	Blows Sampler 6"	Blows Sampler 6"	Recovery %	RQD %	H-Nu	Graphic Symbol	Description and Remarks
0		SS-1					30"		0.2		Red shale with some green coloring.
		SS-2					3"		0.2		Red shale
5		SS-3					21"		0.2		Fractured pieces of green shale
		SS-4					32"		0.2		Fractured green shale, fractures iron stained.
		SS-5					32"		0.2		Fractured red shale
10		SS-6					56"		0.2		Fractured red shale w/some clay seams.
15		SS-7					50"		0.2		Fractured green shale becoming red at 17'
		SS8					30"		0.2		Fractured red pieces of shale becoming fractured green shale at 20'
20		SS-9					12"		0.2		Fractured green shale becoming red
		SS-10					60"		0.2		Fractured red shale Last 8" - red sandstone
25											
28'-8"											
0											Note 6" ϕ 5 foot depth rock socket was drilled
5											
0											

I.D. Casing	Wgt. Hammer on Casing	Material Notations
I.D. Spoon	Wgt. Hammer on Spoon	
Type Core Drill	Drop Hammer on Casing	
Core Dia.	Drop Hammer on Spoon	
Sample & Test Notations		

Gibbs & Hill, Inc

BORING LOG

Sheet of

PROJECT: PROJECT NO. BORING NO. MW-3

Location: Saugerties Coord: Ground Elev:

Contractor: Date Started: 2/14/89 G.W.L. Hour: Date:

Inspector: Date Completed: 2/17/89 G.W.L. 15'-3" Hour: Date: 2/17/8

Notes:

Depth Ft.	Elev. Ft.	Sample Type & No.	Test Type & No.	Blows Casing Per Ft.	Blows Sampler 6"	Blows Sampler 6"	Recovery %	RQD %	H-NU	Graphic Symbol	Description and Remarks
0		SS-1			11	21	12"		0.2	GM	Angular red shale in a silty clay matrix.
					19	19					
5		SS-2			2	4	1"		0.2	GM	Red shale rock w/ small plastic pieces - moist.
					8	6					Refusal at 9'-6"
0									0.2		Roller bit 6"ϕ 5 foot deep rock socket.
15		SS-3					30"		0.2		Red shale
20		SS-4					60"		0.2		Red competent shale - first 23" then red-green sandy shale
25		SS-5					60"		0.2		Red shaley sand - first foot then some thin green shale layers are present.
27'-7"											
0											
5											
0											

I.D. Casing	Wgt. Hammer on Casing	Material Notations
I.D. Spoon	Wgt. Hammer on Spoon	
Type Core Drill	Drop Hammer on Casing	
Core Dia.	Drop Hammer on Spoon	
Sample & Test Notations		

Gibbs & Hill, Inc

BORING LOG

Sheet of

PROJECT: PROJECT NO. BORING NO. MW-4

Location: Saugerties Coord: Ground Elev:

Contractor: Date Started: 2/16/89 G.W.L. Hour: Date:

Inspector: Date Completed: 2/20/89 G.W.L. 10'-5" Hour: Date: 2/20/87

Notes:

Depth Ft.	Elev. Ft.	Sample Type & No.	Test Type & No.	Blows Casing Per Ft.	Blows Sampler 6"	Blows Sampler 6"	Recovery %	RQD %	Drilling Rate Min./Ft.	Graphic Symbol	Description and Remarks
0		SS-1			6 34	42 100	18"		0.2		Weathered red shale fragments in a silty clayey matrix
5											Rollerbit 6"ϕ 5 foot deep hole
		SS-2					4"		0.2		Green shale
10		SS-3					18"		0.2		Green shale fragments becoming progressively red.
12-6"											
13-4"		SS-4					10"		0.2		Red fractured shale
15		SS-5					52"		0.2		Green and red fractured shale fractures iron stained
17'-4"											
20		SS-6					60"		0.2		Red fractured shale bottom 3" are green shale
22'-4"											
25		SS-7					54"		0.2		Dark blue - grey shale (first 3") then green - red shale becoming all red.
26'-8"											
0											
5											
0											

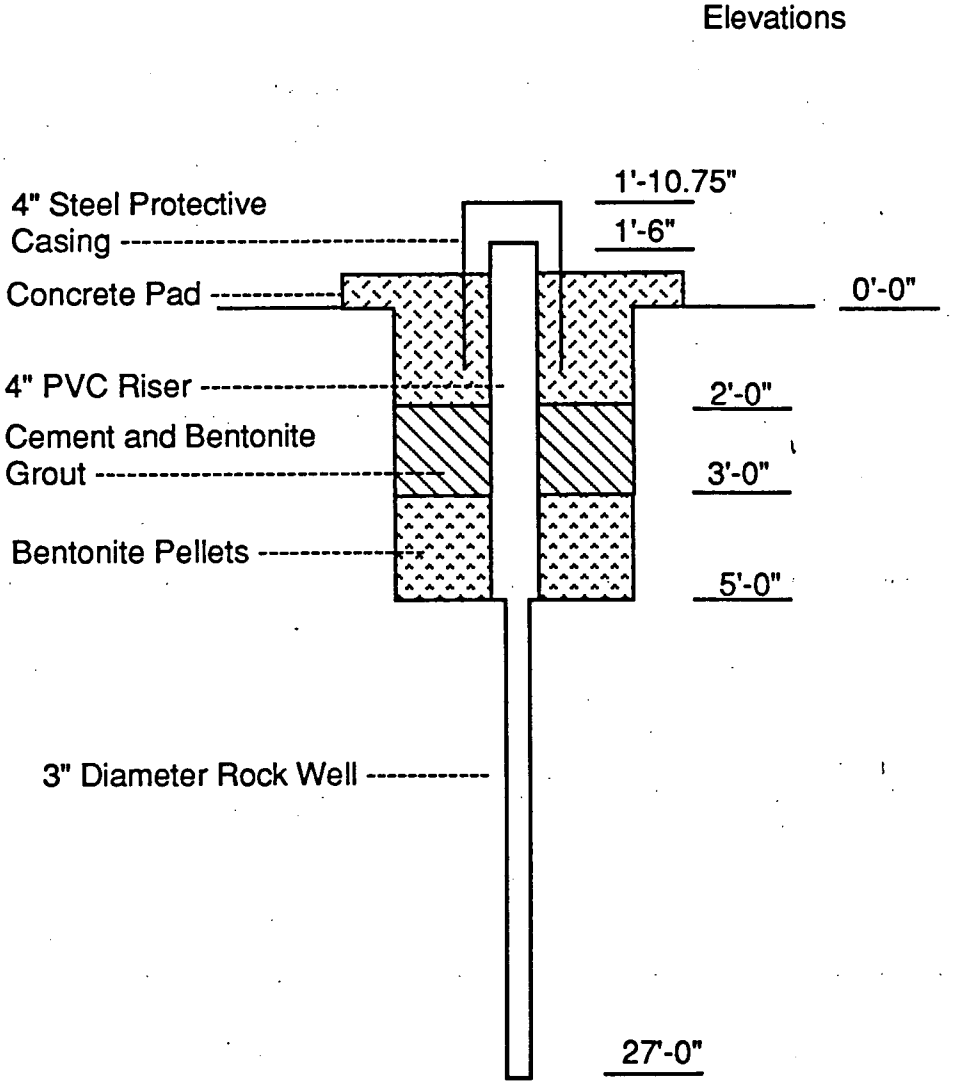
I.D. Casing	Wgt. Hammer on Casing	Material Notations
I.D. Spoon	Wgt. Hammer on Spoon	
Type Core Drill	Drop Hammer on Casing	
Core Dia.	Drop Hammer on Spoon	
Sample & Test Notations		

Gibbs & Hill, Inc.

BEDROCK WELL CONSTRUCTION SCHEMATIC

Site Saugerties Landfill
Well No. MW-1
Date Installed 2/8/89

Water Level from
Top of Casing 10'-5.5"
Date 3/1/89 Time _____

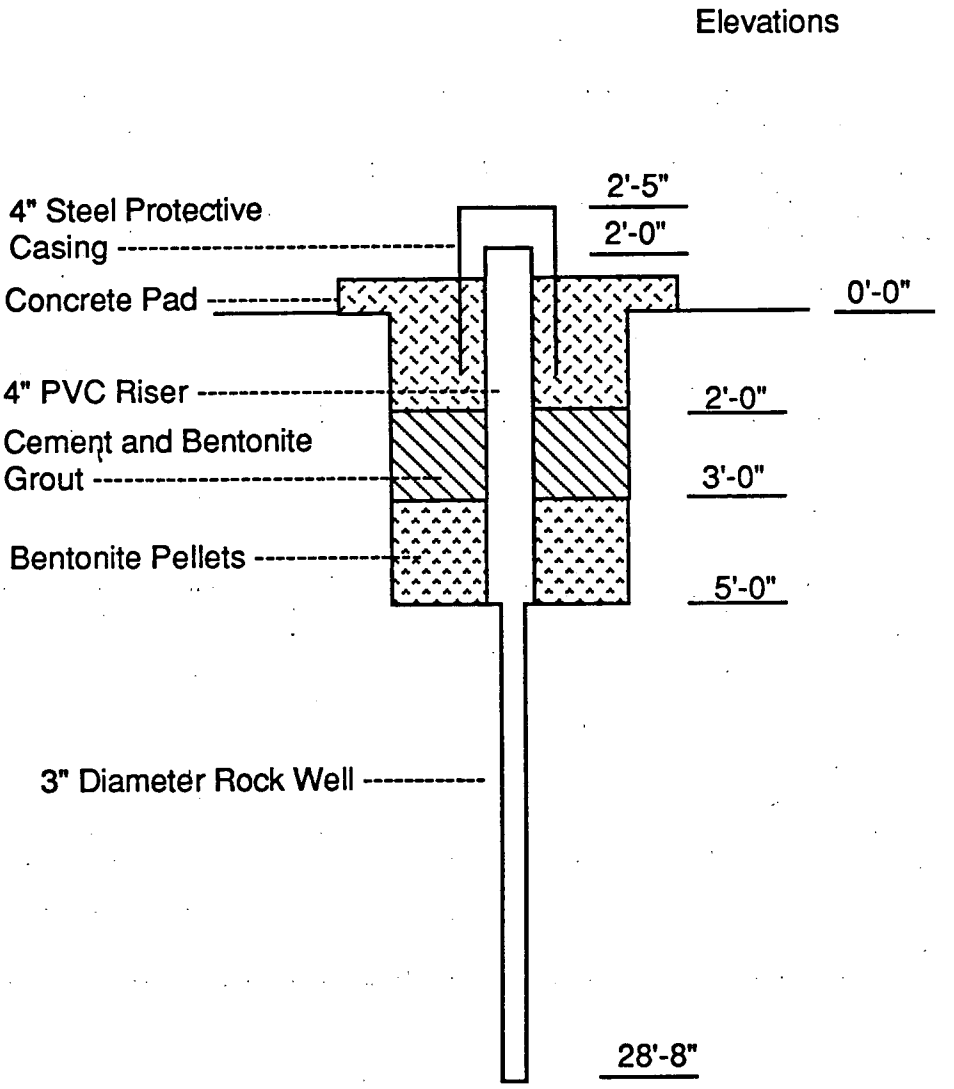


Gibbs & Hill, Inc.

BEDROCK WELL CONSTRUCTION SCHEMATIC

Site Saugerties Landfill
Well No. MW-2
Date Installed 2/13/89

Water Level from
Top of Casing 18'-6.75"
Date 2/29/89 Time _____

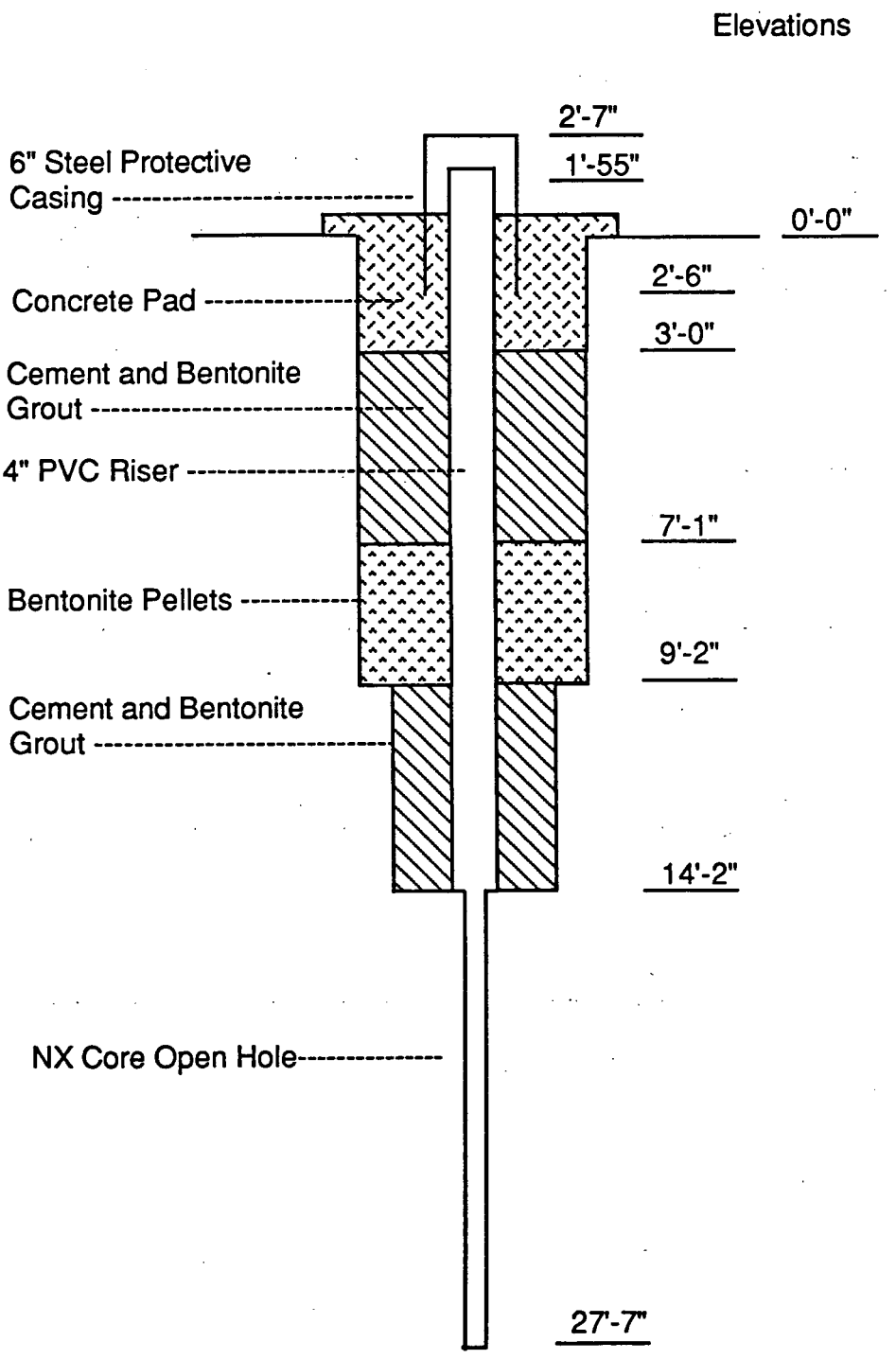


Gibbs & Hill, Inc.

OVERBURDEN/BEDROCK WELL CONSTRUCTION SCHEMATIC

Site Saugerties Landfill
Well No. MW-3
Date Installed 2/17/89

Water Level from
Top of Casing 14'-11"
Date 2/28/89 Time _____

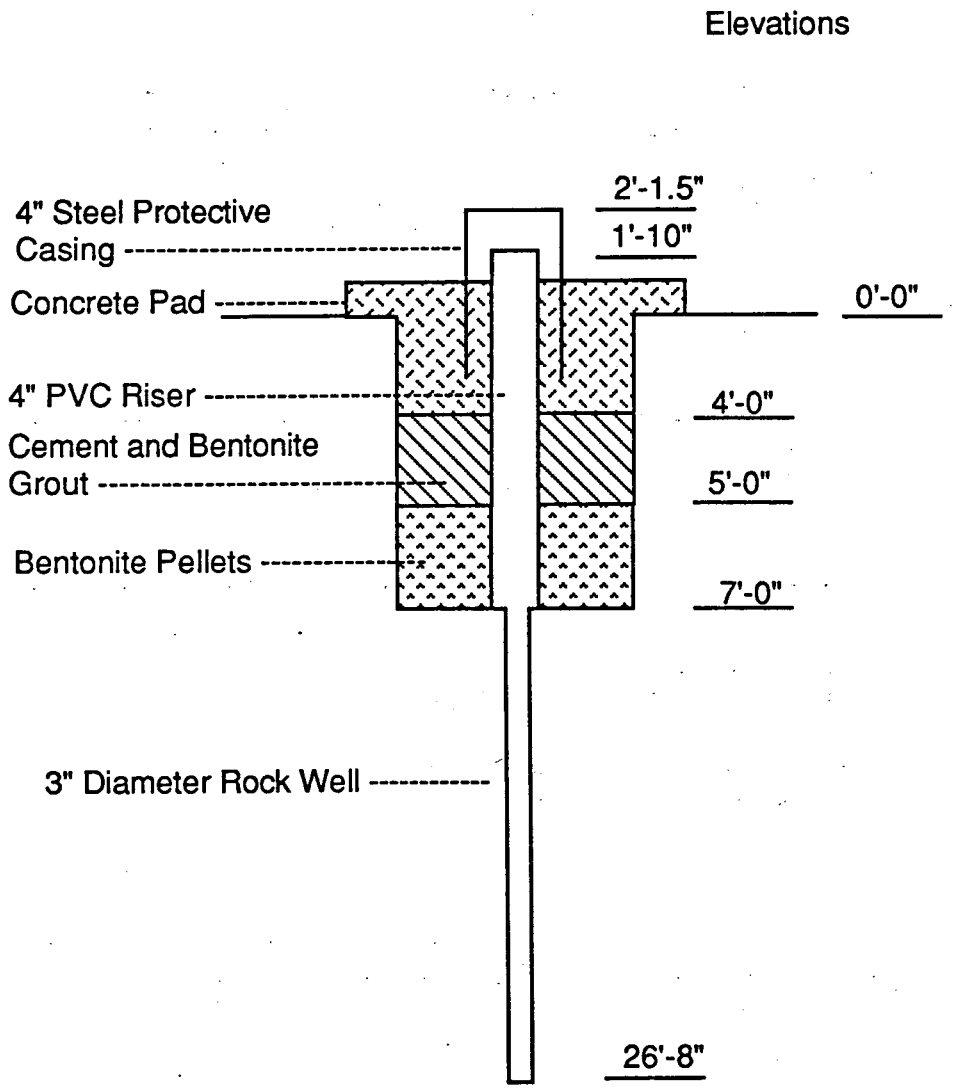


Gibbs & Hill, Inc.

BEDROCK WELL CONSTRUCTION SCHEMATIC

Site Saugerties Landfill
Well No. MW-4
Date Installed 2/20/89

Water Level from
Top of Casing 9'-6.75"
Date 3/1/89 Time _____



Gibbs & Hill, Inc.

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

SUBJECT: Determination of Permeability of Soil in-Situ | DATE OF TEST: WELL NO.:

REF.: J. Cherry & R. Freeze, GROUNDWATER, Prentice-Hall, 1979. | TYPE OF TEST: Bail Test

METHOD:

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

K = permeability (cm/sec)
r = radius of standpipe (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 $(H-h)/(H-H_o) = 0.37$ from best fit line obtained from test data. (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 = 10.16 cm.
L = 612.8 cm.
R = 7.62 cm.
T_o = 41 sec.

CALCULATION:

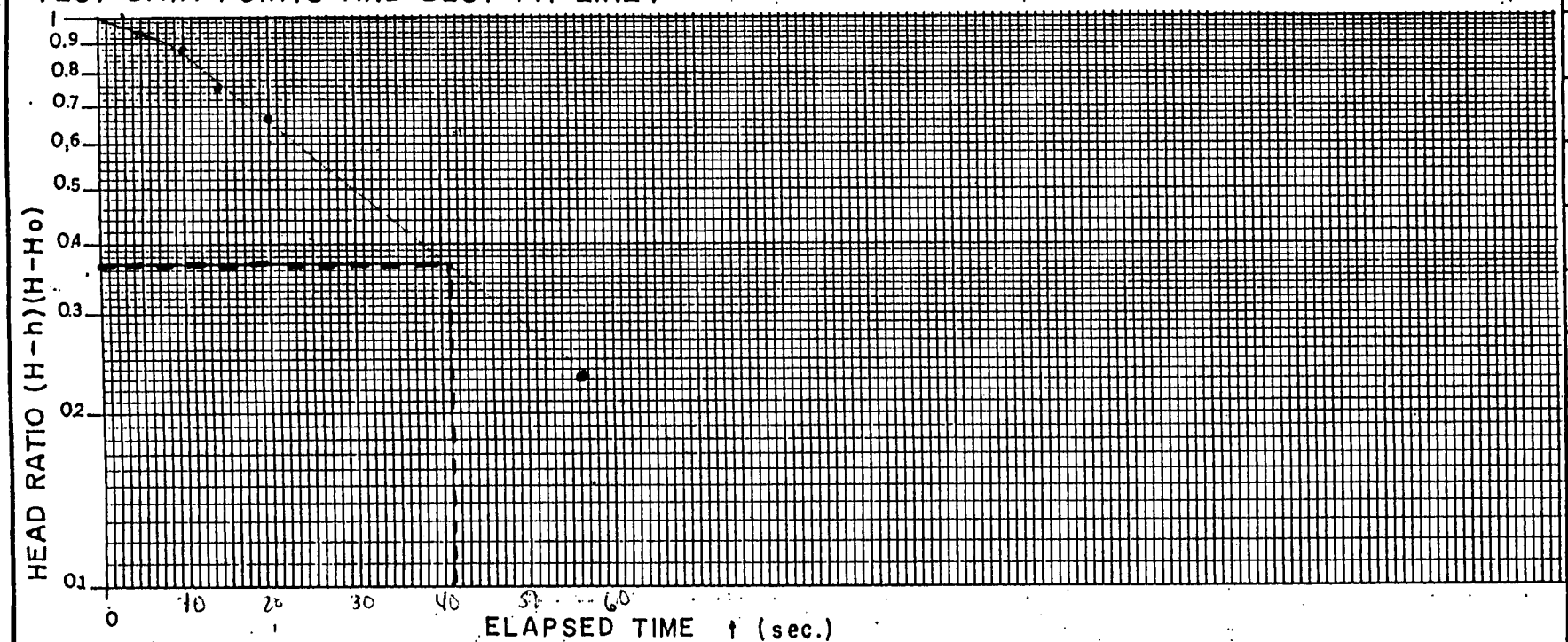
$$K = \frac{(10.16)^2 \ln (612.8/7.62)}{2(612.8)(41)}$$

$$= 9.0 \times 10^{-3} \text{ cm/sec}$$

TEST DATA:

t	$\frac{(H-h)}{(H-H_o)}$
5	0.94
10	0.88
15	0.75
20	0.65
55	0.23

TEST DATA POINTS AND BEST-FIT LINE:



B-12

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

SITE NAME: Saugerties Landfill

SUBJECT: Determination of Permeability of Soil in-Situ

DATE OF TEST: 2/28/89 WELL NO.: MW-2

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

TYPE OF TEST: Bail (Rising Head)

METHOD:

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

K = permeability (cm/sec)

r = radius of standpipe (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 = 10.16 cm.

L = 647.7 cm.

R = 7.62 cm.

To = 5 sec.

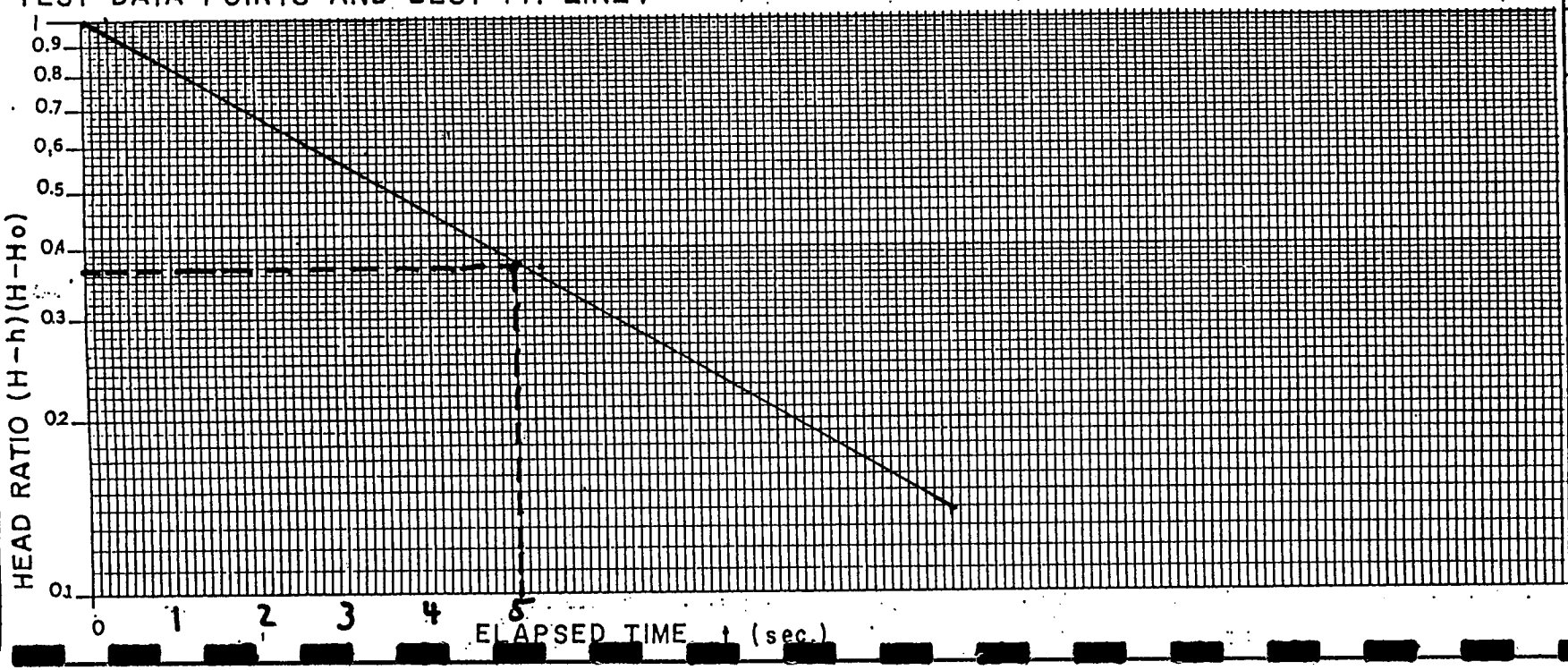
CALCULATION:

$$K = \frac{(10.16)^2 \ln (647.7/7.62)}{2(647.7)(5)}$$

$$= 7.0 \times 10^{-2} \text{ cm/sec}$$

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

TEST DATA POINTS AND BEST-FIT LINE:



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

SITE NAME: Saugerties Landfill

SUBJECT: Determination of Permeability of Soil in-Situ

DATE OF TEST: 2/28/89 WELL NO.: MW-3

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

TYPE OF TEST: Bail (Rising Head)

METHOD:

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

K = permeability (cm/sec)

r = radius of standpipe (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 = 10.16 cm.

L = 325.12 cm.

R = 7.62 cm.

To = 5 sec.

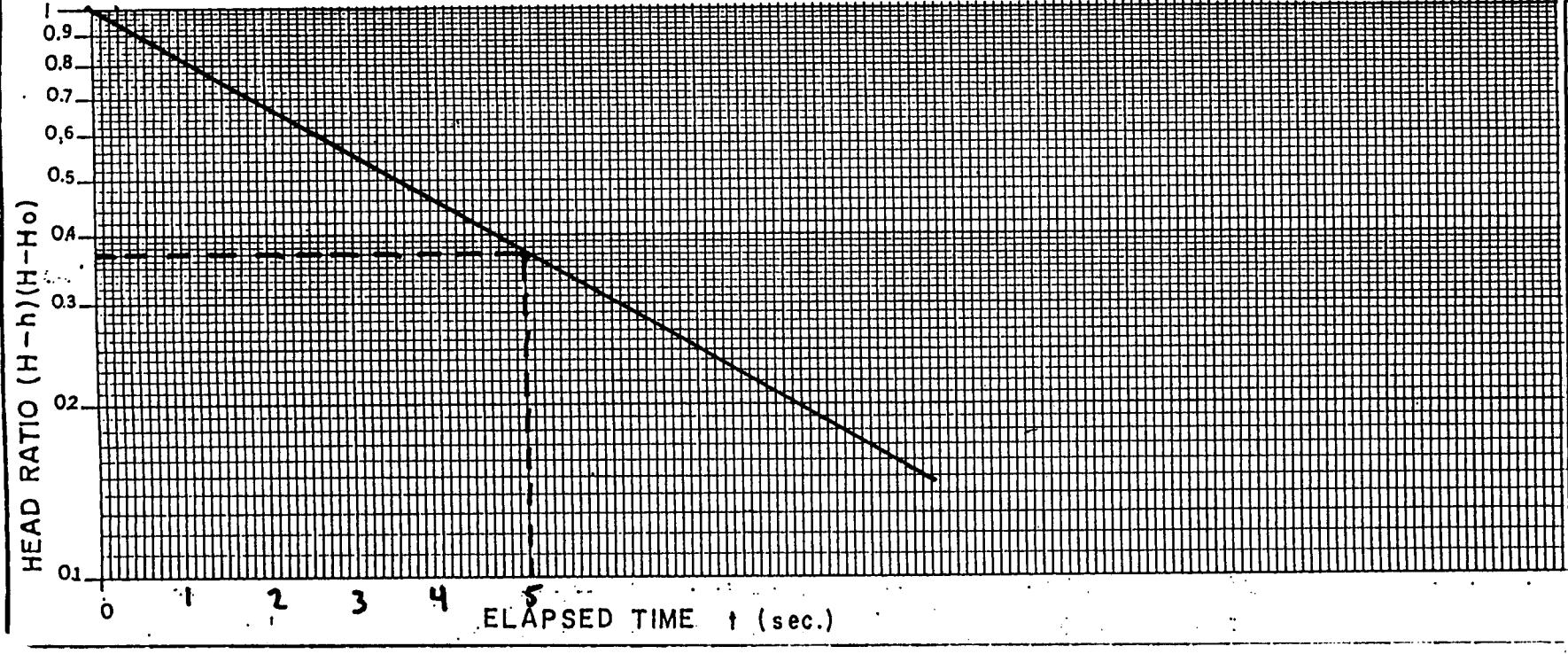
CALCULATION:

$$K = \frac{(10.16)^2 \ln (325.12/7.62)}{2(325.12)(5)} \quad 3.05$$

$$= 1.2 \times 10^{-1} \text{ cm/sec}$$

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

TEST DATA POINTS AND BEST-FIT LINE:



B-19

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

SITE NAME: Saugerties Landfill

SUBJECT: Determination of Permeability of Soil in-Situ

DATE OF TEST: 3/1/84 WELL NO.: MW-4

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

TYPE OF TEST: Bail (Rising Head)

METHOD:

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

K = permeability (cm/sec)

r = radius of standpipe (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 = 10.16 cm.

L = 534.7 cm.

R = 7.62 cm.

T_o = 5 sec.

CALCULATION:

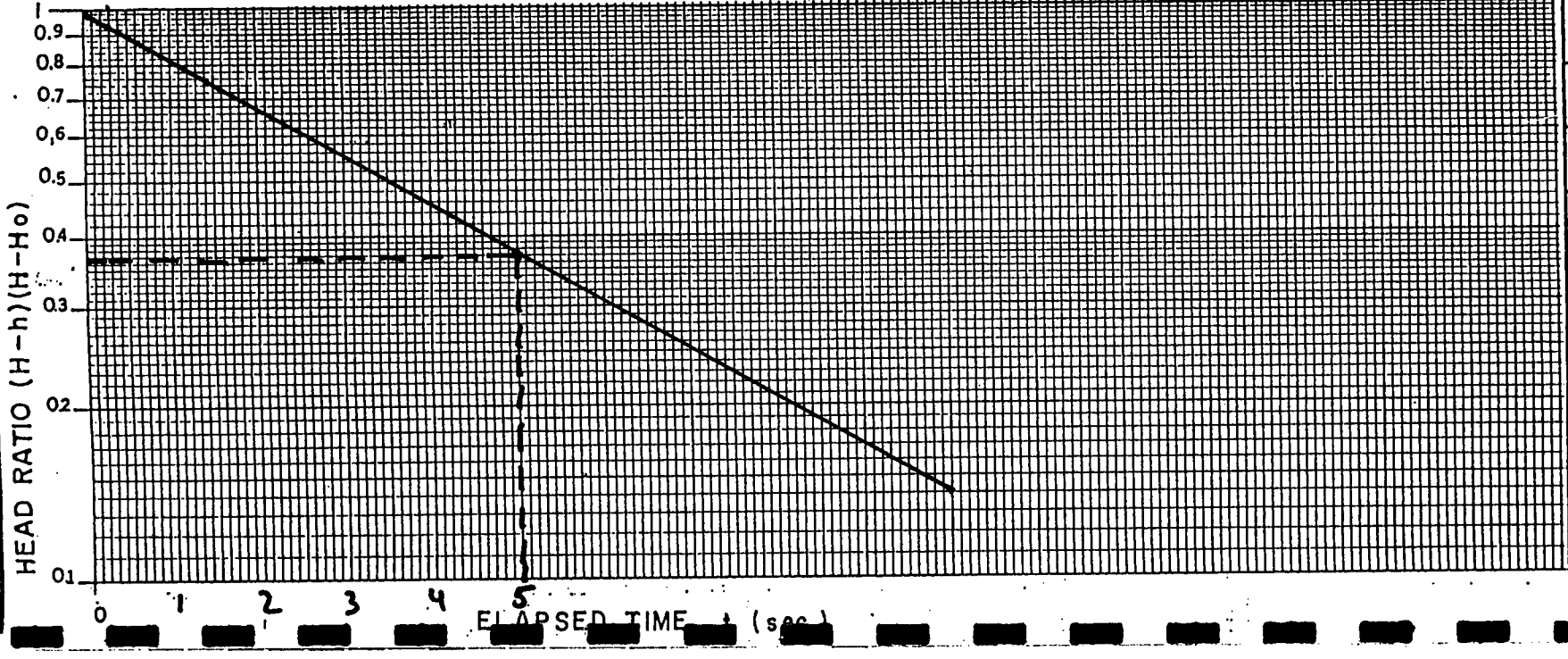
$$K = \frac{(10.16)^2 \ln (534.7/7.62)}{2(534.7)(5)}$$

$$= 8.2 \times 10^{-2} \text{ cm/sec}$$

TEST DATA:

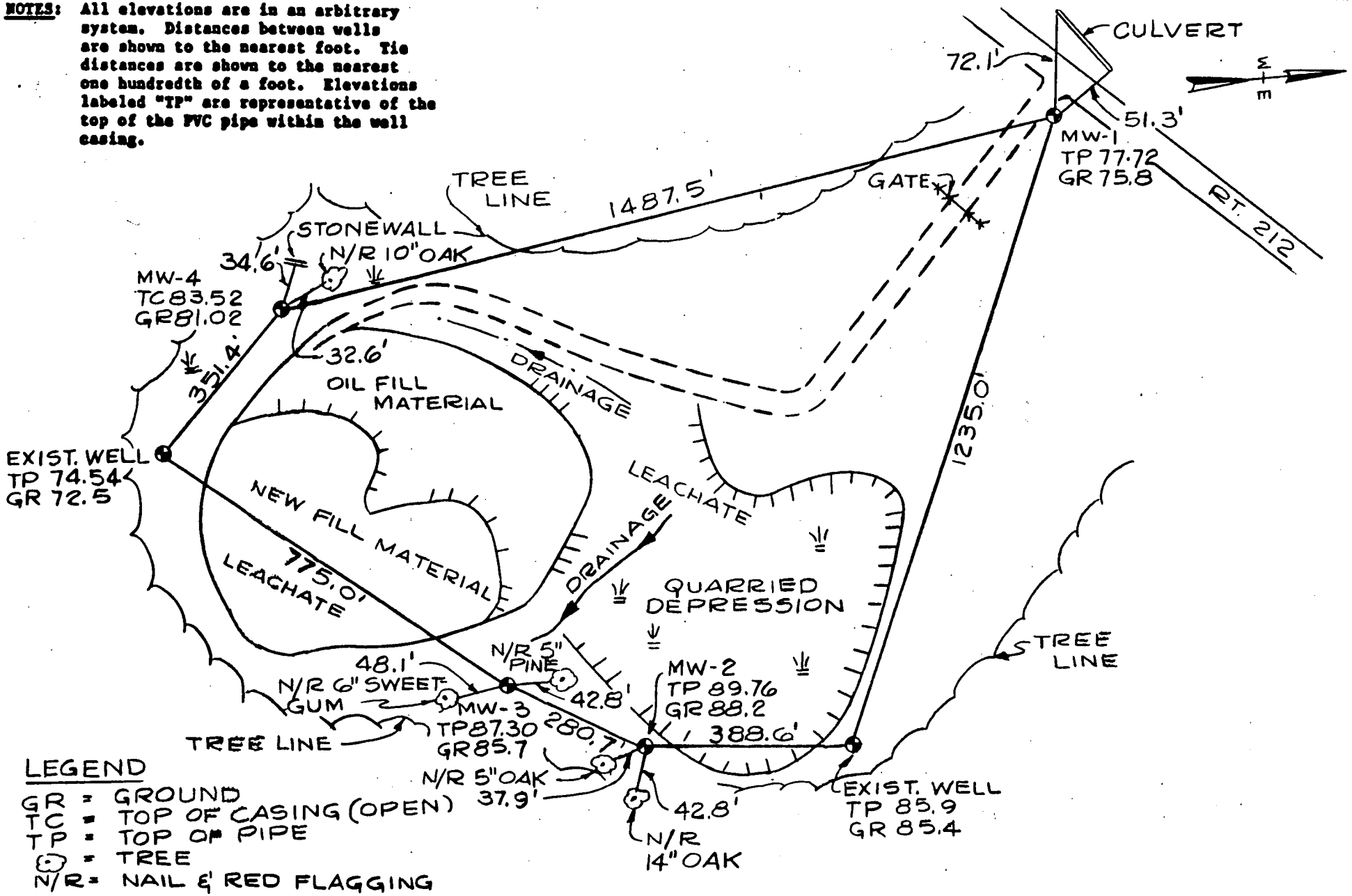
t	(H-h)/(H-Ho)
0	1
5	0.37

TEST DATA POINTS AND BEST-FIT LINE:



R-20

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 "TP" are representative of the top of the PVC pipe within the well casing.



LEGEND

GR = GROUND
TC = TOP OF CASING (OPEN)
TP = TOP OF PIPE
⊙ = TREE
N/R = NAIL & RED FLAGGING

SAUGERTIES LANDFILL
NYCDEC #356003

STORCH ASSOCIATES | 30 JERICHO EXECUTIVE PLAZA JERICHO, N.Y. 11753

B-21

APPENDIX C

SAMPLING AND ANALYSES

C.1 PROCEDURES

1. Sampling Methodology

The sampling plan was prepared by Gibbs & Hill, Inc. as 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 that the 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 the cleaning procedure outlined on 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.
- Before sampling, four well volumes were evacuated from each well. Dedicated teflon bailer with disposable polypropylene suspension cords was used for well evacuations and to collect the samples. Care was taken to minimize the potential for volatilization during the transfer of the sample from the bailer to the bottle for VOA. 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 $4^{o}C$ and delivered to the laboratory within 48 hours.

Cleaning Procedure

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

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. Air dry
7. Distilled water rinse

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

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 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 airborne 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 those 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 sample analyses were performed by H2M Laboratory following the procedures outlined in the New York State Contract Laboratory Protocol (CLP) of November 1987. The analyses included are the following:

- TCL (Target Compound List) Inorganics - Preparation and analysis of inorganic compounds using the specified CLP methods. The analyses are performed on unfiltered samples. Results of the 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 ten 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 HSL 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 groundwater sample for each site by the laboratory to confirm the integrity of all sampling and analytical activities.
- For organic analyses, CLP requires at least one spiked sample analysis and one spiked 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

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 any blank associated with the samples:

- For all pollutants, the method blank must contain less than Contract Required Quantitation Limits (CRQL) of any single pollutant and less than the Instrument Detection Limit (IDL) of any simple 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 ten times the amount in any blank for common lab contaminants (methylene chloride, acetone, toluene, 2-butanone, and common phthalate esters) or five times the amount for other compounds.

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

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

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

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 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.

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

4. 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 drilling activities. Prior to daily activities, PID measurements were taken along the perimeter of the site and readings were logged. Background levels remained at 0.2 ppm.

All cuttings were monitored with a PID to assess potential for high levels of volatile organic contamination. The results of these readings are attached with the boring log of each well. No reading was measured in excess of 0.2 ppm.

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. During the drilling procedure, each soil sample was tested by holding the probe at approximately 1 inch from the soil sample. Readings were registered when the instrument stabilized. In all monitoring events, the readings were at the background level.

C.2 RESULTS

SAMPLING SUMMARY REPORT

Site Name: Saugerties Landfill
Site ID No.: 356003
Date: February 29, 1989
Samplers: A. Kostic/A. Longoria
Weather: Cold, around 30°F

FIELD TEST DATA

Well No.	Temp.°C	Cond. umho/cm.	pH	Remarks
MW-1	12	200	8.10	Cloudy, no odor
MW-2	14	400	6.50	Cloudy, no odor
MW-3	14	400	6.30	Cloudy, no odor
MW-4	9	90	6.30	Cloudy, no odor

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

OBG
LABORATORIES, INC.

June 19, 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 Saugerties Landfill Site on 2-2-89, 2-28-89 and 3-1-89. 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-1	953771/953778	X	X	X	X	X
GW-2	953772/953779	X	X	X	X	X
GW-3	953773/953780	X	X	X	X	X
GW-4	953774/953781	X	X	X	X	X
GW-5	953775/953782	X	X	X	X	X
Field Blank	953776/953783	X	X	X	X	X
Trip Blank	953777	X				
SW-1	952426/952428	X	X	X	X	X
SW-2	952427/952429	X	X	X	X	X
SD-1	952430/952432	X	X	X	X	X
SD-2	952431/952433	X	X	X	X	X
Trip Blank	952434	X				

The data packages were received at OBG Laboratories, Inc. on May 23, 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.

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.

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

DATA REPORTING QUALIFIERS

Value - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit). The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J - Indicates as estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g.: If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J).

C - This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10 ng/ul in the final extract should be confirmed by GC/MS.

B - This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

D - This flag identifies compounds whose concentrations are outside the calibration range of the analysis. If one or more compounds have a response greater than full scale, the extract must be diluted and reanalyzed, according to the specifications in Exhibit D. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I the diluted sample shall have the "DL" suffix appended to the sample number. Compounds whose concentrations are above the calibration range of the first analysis shall be flagged with "D" on the Form I from that first analysis. Compounds identified in that first analysis but below the calibration range of the second analysis shall be flagged "D" on the Form I for the second analysis. The contractor shall report the results of at most two analyses, one with the "DL" suffix, and one without the suffix.

H2M LABS, INC.

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

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QUALIFIERS FOR METALS ANALYSIS

E - The reported value is estimated because of the presence of interference. An explanatory note is included in the case narrative.

M - Duplicate injection precision not met.

N - Matrix spiked sample recovery not within control limits.

S - The reported value was determined by the Method of Standard Additions (MSA).

+ - Correlation coeffiecient for the MSA is less than 0.995.

W - Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.

* - Duplicate analysis not within control limits.

Concentration Qualifiers.

B - Entered if the reported value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).

U - Entered if the analyte was analyzed for but not detected, less than the IDL.

H2M LABS, INC.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

CASE NARRATIVE FOR VOLATILE ORGANICS
Saugerties Landfill
SDG# [illegible] 2/3/89

All quality control and calibration requirements for this data package were met.

Due to the nature of the standards used, o-xylene was used to quantitate total xylenes in all standards and samples.

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: 5/11/89

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

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

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

Matrix Spike - Sample No.: SW-1 Saugetier Level: Low

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	0	41	82	61-145
Trichloroethene	50	2	41	78	71-120
Benzene	50	0	45	89	76-127
Toluene	50	3	47	88	76-125
Chlorobenzene	50	0	46	92	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	43	86	5	14	61-145
Trichloroethene	50	39	74	5	14	71-120
Benzene	50	43	86	3	11	76-127
Toluene	50	46	86	2	13	76-125
Chlorobenzene	50	44	88	4	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: _____

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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.: SD-1 Level: Low

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	81	0	55	68	59-172
Trichloroethene	81	0	58	72	62-137
Benzene	81	0	65	80	66-142
Toluene	81	0	55	68	59-139
Chlorobenzene	81	0	53	66	60-133

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENTRATION (ug/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	89	59	66	3	22	59-172
Trichloroethene	89	57	64	12	24	62-137
Benzene	89	64	72	11	21	66-142
Toluene	89	62	70	3	21	59-139
Chlorobenzene	89	54	61	10	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: _____

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE METHOD BLANK SUMMARY

Lab Name: H2M LABS, INC.
Lab File ID: PU9712
Date Analyzed: 02/06/89
Matrix: (soil/water) WATER
Instrument ID: OWA-1

Gibbs & Hill
Lab Sample ID:
Time Analyzed: 13:55
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	SW-1 Saugerties	952426	PU9717	17:17
02	SW-1 SaugertiesMS	952426MS	PU9718	17:56
03	SW-1 SaugertiesMSD	952426MSD	PU9719	18:44
04	SW-2 Saugerties	952427	PU9720	19:40
05	Trip Blank	952434	PU9721	20:25
06				
07				
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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

VOLATILE METHOD BLANK SUMMARY

Lab Name: H2M LABS, INC. | Gibbs & Hill
Lab File ID: FU9724 | Lab Sample ID:
Date Analyzed: 02/07/89 | Time Analyzed: 17:54
Matrix: (soil/water) SOIL | Level: (low/med) Low
Instrument ID: OWA-1

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

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	SD-1	952430	FU9725	18:36
02	SD-1MS	952430MS	FU9726	19:19
03	SD-1MSD	952430MSD	FU9727	20:01
04	SD-2	952431	FU9728	20:44
05				
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COMMENTS:

H2M LABS, INC.

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs, Inc. Contract: Gibbs & Hill SW-1 Saugerties
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: Water Lab Sample ID: 952426
Sample wt/vol: 5 ml Lab File ID: PU9717
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

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	5	U
67-64-1	Acetone	10	U
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	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	2	J
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: 5/5/89

John J. Molloy, P.E.
Laboratory Director

16

H2M LABS, INC.

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Contract: Gibbs & Hill SW-1 Saugerties
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: WATER Lab Sample ID: 952426
Sample wt/vol: 5 ml Lab File ID: PU9717
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

Number of TICs found: 2

CAS Number	Compound Name	RT	Estimated Conc. ug/l	Q
109999	Tetra hydro furan	3:03	25	J
1066406	Trimethyl silanol	11:24	7	J

Date Reported: 5/5/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs, Inc. Contract: Gibbs & Hill SW-2 Saugerties
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: Water Lab Sample ID: 952427
Sample wt/vol: 5 ml Lab File ID: PU9720
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

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	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	10	U
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: 5/5/89

John J. Molloy, P.E.
Laboratory Director

18

H2M LABS, INC.

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

Lab Name: H2M Labs, Inc. Contract: Gibbs & Hill SW-2 Saugerties
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: WATER Lab Sample ID: 952427
Sample wt/vol: 5 ml Lab File ID: FU9720
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

Number of TICs found: 0

CAS Number	Compound Name	RT	Estimated Conc. ug/l	Q
	No TIC's Found			

Date Reported: 5/5/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs. Inc. Contract: Gibbs & Hill Trip Blank
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: Water Lab Sample ID: 952434
Sample wt/vol: 5 ml Lab File ID: PU9721
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

C.A.S. Number	Compound	Concentration Unit: ug/kg	
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	10	U
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: 5/5/89

John J. Molloy, P.E.
Laboratory Director

20

H2M LABS, INC.

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Lab Name: H2M Labs. Inc. Contract: Gibbs & Hill Trip Blank
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: WATER Lab Sample ID: 952434
Sample wt/vol: 5 ml Lab File ID: FU9721
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

Number of TICs found: 0

CAS Number	Compound Name	RT	Estimated Conc. ug/l	Q
	No TIC's Found			

Date Reported: 5/5/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs, Inc. Contract: Gibbs & Hill SD-1
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: SOIL Lab Sample ID: 952430
Sample wt/vol: 4.68g Lab File ID: FU9725
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. 38 Date Analyzed: 2/7/89
Column: (pack/cap) Pack Date Factor: 1

C.A.S. Number	Compound	Concentration Unit: ug/kg	
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	37	
67-64-1	Acetone	52	
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	9	U
75-34-3	1,1-Dichloroethane	9	U
540-59-0	1,2-Dichloroethene (total)	9	U
67-66-3	Chloroform	9	U
107-02-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	17	U
71-55-6	1,1,1-Trichloroethane	12	
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	17	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1,2-Dichloropropane	9	U
10061-02-6	cis-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-01-5	trans-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	17	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1,1,2,2,Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Xylene (total)	9	U

Date Reported: 5/5/89

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. Contract: Gibbs & Hill SD-1
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: SOIL Lab Sample ID: 952430
Sample wt/vol: 4.68g Lab File ID: FU9725
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/7/89
Column: (pack/cap) Pack Date Factor: 1

Number of TICs found: 3

CAS Number	Compound Name	RT	Estimated Conc. ug/kg	Q
	Unknown	8:27	51	J
	Unknown	14:57	46	J
	Unknown	23:36	1100	J

Date Reported: 5/5/89

John J. Molloy, P.E.
Laboratory Director

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs, Inc. Contract: Gibbs & Hill SD-2
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: SOIL Lab Sample ID: 952431
Sample wt/vol: 4.55g Lab File ID: PU9728
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. 13 Date Analyzed: 2/7/89
Column: (pack/cap) Pack Date Factor: 1

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	25	
67-64-1	Acetone	43	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-02-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	3	
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-02-6	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-01-5	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2,Tetrachloroethane	6	U
108-88-3	Toluene	3	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

Date Reported: 5/5/89

John J. Molloy, P.E.
Laboratory Director

24

H2M LABS, INC.

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

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs, Inc. Contract: Gibbs & Hill SW-1 Saugerties MS
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: WATER Lab Sample ID: 952426MS
Sample wt/vol: 5 ml Lab File ID: PU9718
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

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	5	U
67-64-1	Acetone	10	U
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	10	U
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

* Spiked compound

Date Reported: 5/5/89

John J. Molloy, P.E.
Laboratory Director

155

H2M LABS, INC.

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

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs. Inc. Contract: Gibbs & Hill SW-1 Saugerties MSD
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: WATER Lab Sample ID: 952426MSD
Sample wt/vol: 5 ml Lab File ID: FU9719
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

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	5	U
67-64-1	Acetone	10	U
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	10	U
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

* Spiked compound

Date Reported: 5/5/89

John J. Molloy, P.E.
Laboratory Director

159

H2M LABS, INC.

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

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs, Inc. Contract: Gibbs & Hill VBLK
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: WATER Lab Sample ID:
Sample wt/vol: 5 ml Lab File ID: PU9713
Level: (low/med) Low Date Received: --
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

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	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	10	U
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: 5/5/89

John J. Molloy, P.E.
Laboratory Director

135

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. Contract: Gibbs & Hill VBLK
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: WATER Lab Sample ID: --
Sample wt/vol: 5 ml Lab File ID: PU9713
Level: (low/med) Low Date Received: --
% Moisture: not dec. Date Analyzed: 2/6/89
Column: (pack/cap) Pack Date Factor: 1

Number of TICs found: 0

CAS Number	Compound Name	RT	Estimated Conc. ug/l	Q
	No TIC's Found			

Date Reported: 5/5/89

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. Contract: Gibbs & Hill SD-2
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: SOIL Lab Sample ID: 952431
Sample wt/vol: 4.55g Lab File ID: FU9728
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. Date Analyzed: 2/7/89
Column: (pack/cap) Pack Date Factor: 1

Number of TICs found: 2

CAS Number	Compound Name	RT	Estimated Conc. ug/kg	Q
	Uknown	14:57	26	JB
	Unknown	22:24	15	J

Date Reported: 5/5/89

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

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs, Inc. Contract: Gibbs & Hill VBLK
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: Soil Lab Sample ID:
Sample wt/vol: 5 g. Lab File ID: PU9724
Level: (low/med) Low Date Received: --
% Moisture: not dec.: 0 Date Analyzed: 2/7/89
Column: (pack/cap) Pack Date Factor: 1

C.A.S. Number	Compound	Concentration Unit: ug/kg	
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	5	U
67-64-1	Acetone	10	U
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	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: 5/5/89

John J. Molloy, P.E.
Laboratory Director

144

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. Contract: Gibbs & Hill VBLK
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: SOIL Lab Sample ID: --
Sample wt/vol: 5 g. Lab File ID: PU9724
Level: (low/med) Low Date Received: --
% Moisture: not dec.: 0 Date Analyzed: 2/7/89
Column: (pack/cap) Pack Date Factor: 1

Number of TICs found: 5

CAS Number	Compound Name	RT	Estimated Conc. ug/kg	Q
1066406	*Trimethyl silanol	10:36	5	J
	Unknown amine	13:36	9	J
	Unknown hydrocarbon	14:57	9	J B
	Unknown	18:12	9	J
	Unknown	23:06	8	J

* May be from the column.

Date Reported: 5/5/89

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

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs, Inc. Contract: Gibbs & Hill SD-1 MS
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: SOIL Lab Sample ID: 95243DMS
Sample wt/vol: 4.98 Lab File ID: PU9726
Level: (low/med) Low Date Received: 2/7/89
% Moisture: not dec. 38 Date Analyzed: 2/7/89
Column: (pack/cap) Pack Date Factor: 1

C.A.S. Number	Compound	Concentration Unit: ug/kg	
74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl Chloride	16	U
75-00-3	Chloroethane	16	U
75-09-2	Methylene Chloride	25	
67-64-1	Acetone	140	
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	*	
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-02-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	13	BJ
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-02-6	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	*	
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	*	
10061-01-5	trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	*	
108-90-7	Chlorobenzene	*	
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

* Spike compound

Date Reported: 5/5/89

John J. Molloy, P.E.
Laboratory Director

193

H2M LABS, INC.

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

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M Labs. Inc. Contract: Gibbs & Hill SD-1 MSD
Lab Code: Case No.: SAS No.: SDG No.:
Matrix: SOIL Lab Sample ID: 952430MSD
Sample wt/vol: 4.55g Lab File ID: PU9727
Level: (low/med) Low Date Received: 2/3/89
% Moisture: not dec. 38 Date Analyzed: 2/7/89
Column: (pack/cap) Pack Date Factor: 1

C.A.S. Number	Compound	Concentration Unit: ug/kg	
74-87-3	Chloromethane	18	U
74-83-9	Bromomethane	18	U
75-01-4	Vinyl Chloride	18	U
75-00-3	Chloroethane	18	U
75-09-2	Methylene Chloride	38	
67-64-1	Acetone	48	
75-15-0	Carbon Disulfide	9	U
75-35-4	1.1-Dichloroethene	*	
75-34-3	1.1-Dichloroethane	9	U
540-59-0	1.2-Dichloroethene (total)	9	U
67-66-3	Chloroform	9	U
107-02-2	1.2-Dichloroethane	9	U
78-93-3	2-Butanone	18	U
71-55-6	1.1.1-Trichloroethane	13	
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	18	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1.2-Dichloropropane	9	U
10061-02-6	cis-1.3-Dichloropropene	9	U
79-01-6	Trichloroethene	*	
124-48-1	Dibromochloromethane	9	U
79-00-5	1.1.2-Trichloroethane	9	U
71-43-2	Benzene	*	
10061-01-5	trans-1.3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	18	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1.1.2.2.Tetrachloroethane	9	U
108-88-3	Toluene	*	
108-90-7	Chlorobenzene	*	
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Xylene (total)	9	U

* Spiked compound

Date Reported: 5/5/89

John J. Molloy, P.E.
Laboratory Director

157

H2M LABS, INC.

CASE NARRATIVE FOR BASE/NEUTRAL ACID EXTRACTABLES

2/3/89

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

The acid surrogate 2,4,6-tribromophenol exceeded allowable limits for SW-2 and SW-1 MS.

The recovery of pyrene was outside the allowable limits for SD-1 MS.

SW-1 MSD was re-analyzed due to failure to meet internal standard area requirements in the initial analysis.

The spike added concentration in SW-1 MS/MSD was twice the recommended amount due to two mls. of the spiking solution being added to the sample.

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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-1

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

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

Matrix: (soil/water) WATER Lab Sample ID: 952426

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5583

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-1

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

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

Matrix: (soil/water) WATER Lab Sample ID: 952426

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5583

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

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	6.	JB
117-84-0	Di-n-octylphthalate	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

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX (516) 694-2118

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.: SW-1

Matrix: (soil/water) WATER Lab Sample ID: 952426

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5583

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	9.58	8.	J
2.	21368683	Bicyclo[2.2.1]heptan-2-one,	14.84	12.	J
3.		Unknown	17.69	14.	J
4.		Unknown	17.79	26.	J
5.		Unknown	17.85	14.	J
6.		Unknown	18.02	10.	J
7.	134623	Benzamide, N,N-diethyl-3-met	22.60	20.	J
8.	21964498	1,13-Tetradecadiene (8CI9CI)	29.20	30.	J
9.		Unknown	30.04	8.	J
10.	593497	Heptacosane (8CI9CI)	35.93	10.	J
11.	630024	Octacosane (8CI9CI)	37.76	30.	J
12.		Unknown	38.97	8.	J
13.		Unknown	39.70	8.	J
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John J. Molloy, P.E.
Laboratory Director

13

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-2

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

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

Matrix: (soil/water) WATER Lab Sample ID: 952427

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5586

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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Laboratory Director

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-2

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

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

Matrix: (soil/water) WATER Lab Sample ID: 952427

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5586

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

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-octylphthalate	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

20

H2M LABS, INC.

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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.: SW-1

Matrix: (soil/water) WATER Lab Sample ID: 952427

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5586

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

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.		Unknown	9.57	12.	J
2.	21964498	1,13-Tetradecadiene (8CI9CI)	29.13	56.	J
3.		Unknown	31.81	12.	J
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John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD-1

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952430

Sample wt/vol: 30.0475(g/mL) G Lab File ID: >P5587

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec. 38 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/14/89

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	1100.	U
111-44-4	bis(2-Chloroethyl)Ether	1100.	U
95-57-8	2-Chlorophenol	1100.	U
541-73-1	1,3-Dichlorobenzene	1100.	U
106-46-7	1,4-Dichlorobenzene	1100.	U
100-51-6	Benzyl alcohol	1100.	U
95-50-1	1,2-Dichlorobenzene	1100.	U
95-48-7	2-Methylphenol	1100.	U
39638-32-9	bis(2-chloroisopropyl)ether	1100.	U
106-44-5	4-Methylphenol	1100.	U
621-64-7	N-Nitroso-Di-n-propylamine	1100.	U
67-72-1	Hexachloroethane	1100.	U
98-95-3	Nitrobenzene	1100.	U
78-59-1	Isophorone	1100.	U
88-75-5	2-Nitrophenol	1100.	U
105-67-9	2,4-Dimethylphenol	1100.	U
65-85-0	Benzoic acid	5500.	U
111-91-1	bis(2-Chloroethoxy)methane	1100.	U
120-83-2	2,4-Dichlorophenol	1100.	U
120-82-1	1,2,4-Trichlorobenzene	1100.	U
91-20-3	Naphthalene	1100.	U
106-47-8	4-Chloroaniline	1100.	U
87-68-3	Hexachlorobutadiene	1100.	U
59-50-7	4-Chloro-3-methylphenol	1100.	U
91-57-6	2-Methylnaphthalene	1100.	U
77-47-4	Hexachlorocyclopentadiene	1100.	U
88-06-2	2,4,6-Trichlorophenol	1100.	U
95-95-4	2,4,5-Trichlorophenol	5500.	U
91-58-7	2-Chloronaphthalene	1100.	U
88-74-4	2-Nitroaniline	5500.	U
131-11-3	Dimethylphthalate	1100.	U
208-96-8	Acenaphthylene	1100.	U
606-20-2	2,6-Dinitrotoluene	1100.	U

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Laboratory Director

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD-1

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952430

Sample wt/vol: 30.0475(g/mL) G Lab File ID: >P5587

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec. 38 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/14/89

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	5500.	U
83-32-9	Acenaphthene	1100.	U
51-28-5	2,4-Dinitrophenol	5500.	U
100-02-7	4-Nitrophenol	5500.	U
132-64-9	Dibenzofuran	1100.	U
121-14-2	2,4-Dinitrotoluene	1100.	U
84-66-2	Diethylphthalate	1100.	U
7005-72-3	4-Chlorophenyl-phenylether	1100.	U
86-73-7	Fluorene	1100.	U
100-01-6	4-Nitroaniline	5500.	U
534-52-1	4,6-Dinitro-2-methylphenol	5500.	U
86-30-6	N-Nitrosodiphenylamine (1)	1100.	U
101-55-3	4-Bromophenyl-phenylether	1100.	U
118-74-1	Hexachlorobenzene	1100.	U
87-86-5	Pentachlorophenol	5500.	U
85-01-8	Phenanthrene	1100.	U
120-12-7	Anthracene	1100.	U
84-74-2	Di-n-butylphthalate	1100.	U
206-44-0	Fluoranthene	1100.	U
129-00-0	Pyrene	1100.	U
85-68-7	Butylbenzylphthalate	1100.	U
91-94-1	3,3'-Dichlorobenzidine	2200.	U
56-55-3	Benzo(a)anthracene	1100.	U
218-01-9	Chrysene	1100.	U
117-81-7	bis(2-Ethylhexyl)phthalate	4100.	B
117-84-0	Di-n-octylphthalate	1100.	U
205-99-2	Benzo(b)fluoranthene	1100.	U
207-08-9	Benzo(k)fluoranthene	1100.	U
50-32-8	Benzo(a)pyrene	1100.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1100.	U
53-70-3	Dibenzo(a,h)anthracene	1100.	U
191-24-2	Benzo(g,h,i)perylene	1100.	U

(1) - Cannot be separated from Diphenylamine

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SD-1

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952430

Sample wt/vol: 30.0475(g/mL) G Lab File ID: >P5587

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.38 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/14/89

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.00000

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541059	Cyclotrisiloxane, hexamethyl	7.17	2900.	J
2.		Unknown	8.06	750.	J
3.		Unknown	8.41	750.	J
4.		Unknown	26.99	540.	J
5.		Unknown	28.72	430.	J
6.		Unknown	29.64	1100.	J
7.		Unknown Acid	29.95	540.	J
8.	629992	Pentacosane (8C19C1)	31.92	750.	J
9.	630024	Octacosane (8C19C1)	33.00	860.	J
10.		Unk. Aliphatic Hydrocarbon	35.02	750.	J
11.	630035	Nonacosane (8C19C1)	36.00	750.	J
12.		Unk. Aliphatic Hydrocarbon	36.92	640.	J
13.		Unk. Aliphatic Hydrocarbon	37.82	1100.	J
14.		Unk. Aliphatic Hydrocarbon	38.73	540.	J
15.		Unk. Aliphatic Hydrocarbon	39.75	1100.	J
16.		Unk. Aliphatic Hydrocarbon	42.28	430.	J
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John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD-2

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952431

Sample wt/vol: 30.0749(g/mL) G Lab File ID: >P5588

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec. 13 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/15/89

GPC Cleanup: (Y/N) Y pH: 7.2 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	760.	U
111-44-4	bis(2-Chloroethyl)Ether	760.	U
95-57-8	2-Chlorophenol	760.	U
541-73-1	1,3-Dichlorobenzene	760.	U
106-46-7	1,4-Dichlorobenzene	760.	U
100-51-6	Benzyl alcohol	760.	U
95-50-1	1,2-Dichlorobenzene	760.	U
95-48-7	2-Methylphenol	760.	U
39638-32-9	bis(2-chloroisopropyl)ether	760.	U
106-44-5	4-Methylphenol	760.	U
621-64-7	N-Nitroso-Di-n-propylamine	760.	U
67-72-1	Hexachloroethane	760.	U
98-95-3	Nitrobenzene	760.	U
78-59-1	Isophorone	760.	U
88-75-5	2-Nitrophenol	760.	U
105-67-9	2,4-Dimethylphenol	760.	U
65-85-0	Benzoic acid	3800.	U
111-91-1	bis(2-Chloroethoxy)methane	760.	U
120-83-2	2,4-Dichlorophenol	760.	U
120-82-1	1,2,4-Trichlorobenzene	760.	U
91-20-3	Naphthalene	760.	U
106-47-8	4-Chloroaniline	760.	U
87-68-3	Hexachlorobutadiene	760.	U
59-50-7	4-Chloro-3-methylphenol	760.	U
91-57-6	2-Methylnaphthalene	760.	U
77-47-4	Hexachlorocyclopentadiene	760.	U
88-06-2	2,4,6-Trichlorophenol	760.	U
95-95-4	2,4,5-Trichlorophenol	3800.	U
91-58-7	2-Chloronaphthalene	760.	U
88-74-4	2-Nitroaniline	3800.	U
131-11-3	Dimethylphthalate	760.	U
208-96-8	Acenaphthylene	760.	U
606-20-2	2,6-Dinitrotoluene	760.	U

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Laboratory Director

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD-2

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952431

Sample wt/vol: 30.0749(g/mL) G Lab File ID: >P5588

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec. 13 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/15/89

GPC Cleanup: (Y/N) Y 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	3800.	U
83-32-9	Acenaphthene	760.	U
51-28-5	2,4-Dinitrophenol	3800.	U
100-02-7	4-Nitrophenol	3800.	U
132-64-9	Dibenzofuran	760.	U
121-14-2	2,4-Dinitrotoluene	760.	U
84-66-2	Diethylphthalate	760.	U
7005-72-3	4-Chlorophenyl-phenylether	760.	U
86-73-7	Fluorene	760.	U
100-01-6	4-Nitroaniline	3800.	U
534-52-1	4,6-Dinitro-2-methylphenol	3800.	U
86-30-6	N-Nitrosodiphenylamine (1)	760.	U
101-55-3	4-Bromophenyl-phenylether	760.	U
118-74-1	Hexachlorobenzene	760.	U
87-86-5	Pentachlorophenol	3800.	U
85-01-8	Phenanthrene	760.	U
120-12-7	Anthracene	760 ~~760.~~ ~~180~~	U ~~J~~ U
84-74-2	Di-n-butylphthalate	~~760.~~ 180	~~U J~~
206-44-0	Fluoranthene	760.	U
129-00-0	Pyrene	760.	U
85-68-7	Butylbenzylphthalate	760.	U
91-94-1	3,3'-Dichlorobenzidine	1500.	U
56-55-3	Benzo(a)anthracene	760.	U
218-01-9	Chrysene	760.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1600.	B
117-84-0	Di-n-octylphthalate	760.	U
205-99-2	Benzo(b)fluoranthene*	760.	U
207-08-9	Benzo(k)fluoranthene*	760.	U
50-32-8	Benzo(a)pyrene	760.	U
193-39-5	Indeno(1,2,3-cd)pyrene	760.	U
53-70-3	Dibenzo(a,h)anthracene	760.	U
191-24-2	Benzo(g,h,i)perylene	760.	U

GK/S

John J. Molloy, P.E.
Laboratory Director

(1) - Cannot be separated from Diphenylamine

H2M LABS, INC.

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

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SD-2

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952431

Sample wt/vol: 30.0749(g/mL) G Lab File ID: >P5588

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.13 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/15/89

GPC Cleanup: (Y/N) Y pH:7.2 Dilution Factor: 1.00000

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	9.41	540.	J
2.	629629	Pentadecane (8CI9CI)	31.86	690.	J
3.	630024	Octacosane (8CI9CI)	32.94	760.	J
4.		Unk. Aliphatic Hydrocarbon	34.98	840.	J
5.		Unk. Aliphatic Hydrocarbon	35.94	760.	J
6.		Unk. Aliphatic Hydrocarbon	36.86	610.	J
7.		Unk. Aliphatic Hydrocarbon	37.76	610.	J
8.		Unk. Aliphatic Hydrocarbon	38.68	540.	J
9.		Unk. Aliphatic Hydrocarbon	39.70	840.	J
10.		Unk. Aliphatic Hydrocarbon	40.88	380.	J
11.		Unk. Aliphatic Hydrocarbon	42.23	380.	J
12.					
13.					
14.					
15.					
16.					
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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) 694-4123

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK 471

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

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

Matrix: (soil/water) WATER Lab Sample ID: SBLK 471

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5578

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Molldy, P.E.
Laboratory Director

151

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK 471

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

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

Matrix: (soil/water) WATER Lab Sample ID: SBLK 471

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5578

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

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	10.	
117-84-0	Di-n-octylphthalate	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

H2M LABS, INC.

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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SBLK 471

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

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

Matrix: (soil/water) WATER Lab Sample ID: SBLK 471

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5578

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	7.13	10.	J
2.		Unknown	23.78	12.	J
3.		Unknown	23.82	8.	J
4.	2463027	11,14-Eicosadienoic acid, me	29.63	12.	J
5.		Unknown	34.17	16.	J
6.					
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John J. Molloy, P.E.
Laboratory Director

53

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX (516) 694-2512

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK 472

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

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

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 472

Sample wt/vol: 30 (g/mL) G Lab File ID: >P5579

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/14/89

GPC Cleanup: (Y/N) Y pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	660.	U
111-44-4	bis(2-Chloroethyl)Ether	660.	U
95-57-8	2-Chlorophenol	660.	U
541-73-1	1,3-Dichlorobenzene	660.	U
106-46-7	1,4-Dichlorobenzene	660.	U
100-51-6	Benzyl alcohol	660.	U
95-50-1	1,2-Dichlorobenzene	660.	U
95-48-7	2-Methylphenol	660.	U
39638-32-9	bis(2-chloroisopropyl)ether	660.	U
106-44-5	4-Methylphenol	660.	U
621-64-7	N-Nitroso-Di-n-propylamine	660.	U
67-72-1	Hexachloroethane	660.	U
98-95-3	Nitrobenzene	660.	U
78-59-1	Isophorone	660.	U
88-75-5	2-Nitrophenol	660.	U
105-67-9	2,4-Dimethylphenol	660.	U
65-85-0	Benzoic acid	3300.	U
111-91-1	bis(2-Chloroethoxy)methane	660.	U
120-83-2	2,4-Dichlorophenol	660.	U
120-82-1	1,2,4-Trichlorobenzene	660.	U
91-20-3	Naphthalene	660.	U
106-47-8	4-Chloroaniline	660.	U
87-68-3	Hexachlorobutadiene	660.	U
59-50-7	4-Chloro-3-methylphenol	660.	U
91-57-6	2-Methylnaphthalene	660.	U
77-47-4	Hexachlorocyclopentadiene	660.	U
88-06-2	2,4,6-Trichlorophenol	660.	U
95-95-4	2,4,5-Trichlorophenol	3300.	U
91-58-7	2-Chloronaphthalene	660.	U
88-74-4	2-Nitroaniline	3300.	U
131-11-3	Dimethylphthalate	660.	U
208-96-8	Acenaphthylene	660.	U
606-20-2	2,6-Dinitrotoluene	660.	U

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX (516) 420-8436

1D
EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK 472

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

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

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 472

Sample wt/vol: 30 (g/mL) G Lab File ID: >P5579

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/14/89

GPC Cleanup: (Y/N) Y pH:-- Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	3300.	U
83-32-9	Acenaphthene	660.	U
51-28-5	2,4-Dinitrophenol	3300.	U
100-02-7	4-Nitrophenol	3300.	U
132-64-9	Dibenzofuran	660.	U
121-14-2	2,4-Dinitrotoluene	660.	U
84-66-2	Diethylphthalate	660.	U
7005-72-3	4-Chlorophenyl-phenylether	660.	U
86-73-7	Fluorene	660.	U
100-01-6	4-Nitroaniline	3300.	U
534-52-1	4,6-Dinitro-2-methylphenol	3300.	U
86-30-6	N-Nitrosodiphenylamine (1)	660.	U
101-55-3	4-Bromophenyl-phenylether	660.	U
118-74-1	Hexachlorobenzene	660.	U
87-86-5	Pentachlorophenol	3300.	U
85-01-8	Phenanthrene	660.	U
120-12-7	Anthracene	660.	U
84-74-2	Di-n-butylphthalate	660.	U
206-44-0	Fluoranthene	660.	U
129-00-0	Pyrene	660.	U
85-68-7	Butylbenzylphthalate	660.	U
91-94-1	3,3'-Dichlorobenzidine	1300.	U
56-55-3	Benzo(a)anthracene	660.	U
218-01-9	Chrysene	660.	U
117-81-7	bis(2-Ethylhexyl)phthalate	270.	
117-84-0	Di-n-octylphthalate	660.	U
205-99-2	Benzo(b)fluoranthene	660.	U
207-08-9	Benzo(k)fluoranthene	660.	U
50-32-8	Benzo(a)pyrene	660.	U
193-39-5	Indeno(1,2,3-cd)pyrene	660.	U
53-70-3	Dibenzo(a,h)anthracene	660.	U
191-24-2	Benzo(g,h,i)perylene	660.	U

(1) - Cannot be separated from Diphenylamine

John J. Molloy, P.E.
Laboratory Director

196

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX (516) 694-6286

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SBLK 472

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

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

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 472

Sample wt/vol: 30 (g/mL) G Lab File ID: >P5579

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/14/89

GPC Cleanup: (Y/N) Y pH:-- Dilution Factor: 1.00000

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	6.34	470.	J
2.		Unknown	8.52	400.	J
3.		Unknown	9.60	330.	J
4.					
5.					
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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) 694-7412

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-1 MS

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

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

Matrix: (soil/water) WATER Lab Sample ID: 952426 MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5584

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

FORM I SV-1 1/87 Rev.

John J. Molloy, P.E.
Laboratory Director

177

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-1 MS

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

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

Matrix: (soil/water) WATER Lab Sample ID: 952426 MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >P5584

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/14/89

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	10.	B
117-84-0	Di-n-octylphthalate	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.

John J. Molloy, P.E.
Laboratory Director

178

H2M LABS, INC.

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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-1 MSD

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

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

Matrix: (soil/water) WATER Lab Sample ID: 952426 MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0002

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

FORM I SV-1 1/87 Rev.

John J. Molloy, P.E.
Laboratory Director

182

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX (516) 694-5286

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW-1 MSD

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

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

Matrix: (soil/water) WATER Lab Sample ID: 952426 MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0002

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec.-- dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 2/15/89

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	12.	B
117-84-0	Di-n-octylphthalate	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.

John J. Molloy, P.E.
Laboratory Director

193

H2M LABS, INC.

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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD-1 MS

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952430 MS

Sample wt/vol: 30.0712(g/mL) G Lab File ID: >E0003

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec. 38 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/15/89

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(2-Chloroethyl)Ether	1100.	U
541-73-1	1,3-Dichlorobenzene	1100.	U
100-51-6	Benzyl alcohol	1100.	U
95-50-1	1,2-Dichlorobenzene	1100.	U
95-48-7	2-Methylphenol	1100.	U
39638-32-9	bis(2-chloroisopropyl)ether	1100.	U
106-44-5	4-Methylphenol	1100.	U
67-72-1	Hexachloroethane	1100.	U
98-95-3	Nitrobenzene	1100.	U
78-59-1	Isophorone	1100.	U
88-75-5	2-Nitrophenol	1100.	U
105-67-9	2,4-Dimethylphenol	1100.	U
65-85-0	Benzoic acid	5500.	U
111-91-1	bis(2-Chloroethoxy)methane	1100.	U
120-83-2	2,4-Dichlorophenol	1100.	U
91-20-3	Naphthalene	1100.	U
106-47-8	4-Chloroaniline	1100.	U
87-68-3	Hexachlorobutadiene	1100.	U
91-57-6	2-Methylnaphthalene	1100.	U
77-47-4	Hexachlorocyclopentadiene	1100.	U
88-06-2	2,4,6-Trichlorophenol	1100.	U
95-95-4	2,4,5-Trichlorophenol	5500.	U
91-58-7	2-Chloronaphthalene	1100.	U
88-74-4	2-Nitroaniline	5500.	U
131-11-3	Dimethylphthalate	1100.	U
208-96-8	Acenaphthylene	1100.	U
606-20-2	2,6-Dinitrotoluene	1100.	U

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) 694-6286

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD-1 MS

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952430 MS

Sample wt/vol: 30.0712(g/mL) G Lab File ID: >E0003

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec. 38 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/15/89

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	5500.	U
51-28-5	2,4-Dinitrophenol	5500.	U
132-64-9	Dibenzofuran	1100.	U
84-66-2	Diethylphthalate	1100.	U
7005-72-3	4-Chlorophenyl-phenylether	1100.	U
86-73-7	Fluorene	1100.	U
100-01-6	4-Nitroaniline	5500.	U
534-52-1	4,6-Dinitro-2-methylphenol	5500.	U
86-30-6	N-Nitrosodiphenylamine (1)	1100.	U
101-55-3	4-Bromophenyl-phenylether	1100.	U
118-74-1	Hexachlorobenzene	1100.	U
85-01-8	Phenanthrene	1100.	U
120-12-7	Anthracene	1100.	U
84-74-2	Di-n-butylphthalate	1100.	U
206-44-0	Fluoranthene	1100.	U
85-68-7	Butylbenzylphthalate	1100.	U
91-94-1	3,3'-Dichlorobenzidine	2200.	U
56-55-3	Benzo(a)anthracene	1100.	U
218-01-9	Chrysene	1100.	U
117-81-7	bis(2-Ethylhexyl)phthalate	3400.	B
117-84-0	Di-n-octylphthalate	1100.	U
205-99-2	Benzo(b)fluoranthene	1100.	U
207-08-9	Benzo(k)fluoranthene	1100.	U
50-32-8	Benzo(a)pyrene	1100.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1100.	U
53-70-3	Dibenzo(a,h)anthracene	1100.	U
191-24-2	Benzo(g,h,i)perylene	1100.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

John J. Molloy, P.E.
Laboratory Director

193

H2M LABS, INC.
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD-1 MSD

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952430 MSD

Sample wt/vol: 30.0240(g/mL) G Lab File ID: >E0004

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec. 38 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/15/89

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(2-Chloroethyl)Ether	1100.	U
541-73-1	1,3-Dichlorobenzene	1100.	U
100-51-6	Benzyl alcohol	1100.	U
95-50-1	1,2-Dichlorobenzene	1100.	U
95-48-7	2-Methylphenol	1100.	U
39638-32-9	bis(2-chloroisopropyl)ether	1100.	U
106-44-5	4-Methylphenol	1100.	U
67-72-1	Hexachloroethane	1100.	U
98-95-3	Nitrobenzene	1100.	U
78-59-1	Isophorone	1100.	U
88-75-5	2-Nitrophenol	1100.	U
105-67-9	2,4-Dimethylphenol	1100.	U
65-85-0	Benzoic acid	5500.	U
111-91-1	bis(2-Chloroethoxy)methane	1100.	U
120-83-2	2,4-Dichlorophenol	1100.	U
91-20-3	Naphthalene	1100.	U
106-47-8	4-Chloroaniline	1100.	U
87-68-3	Hexachlorobutadiene	1100.	U
91-57-6	2-Methylnaphthalene	1100.	U
77-47-4	Hexachlorocyclopentadiene	1100.	U
88-06-2	2,4,6-Trichlorophenol	1100.	U
95-95-4	2,4,5-Trichlorophenol	5500.	U
91-58-7	2-Chloronaphthalene	1100.	U
88-74-4	2-Nitroaniline	5500.	U
131-11-3	Dimethylphthalate	1100.	U
208-96-8	Acenaphthylene	1100.	U
606-20-2	2,6-Dinitrotoluene	1100.	U

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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SD-1 MSD

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

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

Matrix: (soil/water) SOIL Lab Sample ID: 952430 MSD

Sample wt/vol: 30.0240(g/mL) G Lab File ID: >E0004

Level: (low/med) LOW Date Received: 02/03/89

% Moisture: not dec. 38 dec. -- Date Extracted: 02/06/89

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 2/15/89

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	5500.	U
51-28-5	2,4-Dinitrophenol	5500.	U
132-64-9	Dibenzofuran	1100.	U
84-66-2	Diethylphthalate	1100.	U
7005-72-3	4-Chlorophenyl-phenylether	1100.	U
86-73-7	Fluorene	1100.	U
100-01-6	4-Nitroaniline	5500.	U
534-52-1	4,6-Dinitro-2-methylphenol	5500.	U
86-30-6	N-Nitrosodiphenylamine (1)	1100.	U
101-55-3	4-Bromophenyl-phenylether	1100.	U
118-74-1	Hexachlorobenzene	1100.	U
85-01-8	Phenanthrene	1100.	U
120-12-7	Anthracene	1100.	U
84-74-2	Di-n-butylphthalate	1100.	U
206-44-0	Fluoranthene	1100.	U
85-68-7	Butylbenzylphthalate	1100.	U
91-94-1	3,3'-Dichlorobenzidine	2200.	U
56-55-3	Benzo(a)anthracene	1100.	U
218-01-9	Chrysene	1100.	U
117-81-7	bis(2-Ethylhexyl)phthalate	3600.	B
117-84-0	Di-n-octylphthalate	1100.	U
205-99-2	Benzo(b)fluoranthene	1100.	U
207-08-9	Benzo(k)fluoranthene	1100.	U
50-32-8	Benzo(a)pyrene	1100.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1100.	U
53-70-3	Dibenzo(a,h)anthracene	1100.	U
191-24-2	Benzo(g,h,i)perylene	1100.	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

John J. Molloy, P.E.
Laboratory Director

193

C-67

H2M 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 PESTICIDE/PCBs
SAUGERTIES LANDFILL
samples received 02/03/89

QC/QA Data

Surrogate recoveries exceeded advisory limits for two soil extracts due to coelution of the interference DIOP. The secondary column did not offer better resolution, therefore only primary surrogate recoveries are reported. (Please note that the response factor for DBC was taken from the calibration runs with the individual mixes.)

Matrix spike recoveries were low especially for one of the soil extracts. Overall three recoveries for compounds spiked into the water sample and six recoveries for spikes in the soil sample were outside QC limits. Half of the RPD data did not meet for the water spikes and none of the values for the RPD for soil recoveries were within the limits.

Response for DDT was not linear on the secondary column. Quantifications, except for Endosulfan I, were calculated from the primary runs.

Numbering of Runs

The numbering of runs of the primary sequence (started 03/02/89) was not consistent. The sequence was stopped and restarted with the wrong number. Run numbers 581 and 582 were omitted.

A mixup occurred with computer file ID numbers. Some ID numbers existed twice on two different cartridges for the primary and secondary analyses and some files were exchanged in the transfer. The run numbers on the data file printout have been corrected.

Sample Analyses

Endosulfan I had to be quantified on the secondary column, because it was not resolved on the primary column from an interference by Unknown II in the extracts of Sw-2 and the spikes of SW-1 MS and SW-1 MSD. The unspiked sample SW-1 did not show a peak of Endosulfan I. The interference "Unknown II" elutes with Aldrin on the secondary column.

H2M LABS, INC.
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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

CASE NARRATIVE FOR PESTICIDE/PCBs (cont'd)
SAUGERTIES LANDFILL
samples received 02/03/89

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: 05/30/89

****
*
****

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix Spike - Sample No.: SW-1

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	0.2	0	0.04	19*	56-123
Heptachlor	0.2	0	0.05	26*	40-131
Aldrin	0.2	0.05	0.06	5*	40-120
Dieldrin	0.5	0	0.29	57	52-126
Endrin	0.5	0	0.42	83	56-121
4,4' DDT	0.5	0	0.73	145*	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	0.01	3 *	145 *	15	56-123
Heptachlor	0.2	0.06	29 *	11	20	40-131
Aldrin	0.2	0.07	10 *	67 *	22	40-120
Dieldrin	0.5	0.24	47 *	19 *	18	52-126
Endrin	0.5	0.37	73	13	21	56-121
4,4' DDT	0.5	0.65	130 *	11	27	38-127

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

RPD: 3 out of 6 outside limits
Spike Recovery: 3 out of 12 outside limits

COMMENTS:

H2M LABS, INC.

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix Spike - Sample No.: SD-1 Level: LOW

Compound	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Lindane	61	0	26	43*	46-127
Heptachlor	61	0	106	173*	35-130
Aldrin	61	0	77	126	34-132
Dieldrin	153	0	73	48	31-134
Endrin	153	0	197	129	42-139
4,4' DDT	153	13	130	76	23-134

Compound	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Lindane	61	2	4*	171*	50	46-127
Heptachlor	61	24	39	126*	31	35-130
Aldrin	61	26	42	99*	43	34-132
Dieldrin	153	11	7*	148*	38	31-134
Endrin	153	57	37*	110*	45	42-139
4,4' DDT	153	24	7*	138*	50	23-134

\# 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: 6 out of 12 outside limits

COMMENTS: _____

H2M LABS, INC.

PESTICIDE METHOD BLANK SUMMARY

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL
Lab Sample ID: B-2/8/89 Lab File ID: 560 / 1100
Matrix: WATER Level: LOW
Date Extracted: 02/08/89 Extraction: SEPF
Date Analyzed (1): 03/02/89 Date Analyzed (2): 03/02/89
Time Analyzed (1): 13:22 Time Analyzed (2): 19:50
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	SW-1	952426	03/02/89	03/02/89
02	SW-1MS	952426 MS	"	"
03	SW-1 MSD	952426 NSD	"	03/03/89
04	SW-2	952427	"	"
05				
06				
07				
08				
09				
10				
11				
12				
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27				
28				
29				
30				

Comments:

H2M LABS, INC.

PESTICIDE METHOD BLANK SUMMARY

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL
Lab Sample ID: B-472 Lab File ID: 559 / 1099
Matrix: SOIL Level: LOW
Date Extracted: 02/03/89 Extraction: SONC
Date Analyzed (1): 03/02/89 Date Analyzed (2): 03/02/89
Time Analyzed (1): 12:44 Time Analyzed (2): 19:12
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	SD-1	952430	03/02/89	03/03/89
02	SD-1 MS	952430 MS	03/02/89	"
03	SD-1 MSD	952430 MSD	03/03/89	"
04	SD-2	952431	03/02/89	"
05				
06				
07				
08				
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11				
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30				

Comments:

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

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL SAUGERTIES LANDFILL

SW-1

Matrix: WATER
Sample Vol.: 1000 ml.
Level: LOW
% Moisture: not dec. dec.
Extraction: SEPF
GPC Cleanup: N pH: 7.0

Lab Sample ID: 952426
Lab File ID: 565 / 1105
Date Received: 02/03/89
Date Extracted: 02/08/89
Date Analyzed: 03/02/89 / 03/02/89
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	
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	0.10	U
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: 05/15/89

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Middle
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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

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL SAUGERTIES LANDFILL SW-2

Matrix: WATER
Sample Vol.: 1000 ml.
Level: LOW
% Moisture: not dec. dec.
Extraction: SEPF
GPC Cleanup: N pH: 7.0

Lab Sample ID: 952427
Lab File ID: 569 / 1109
Date Received: 02/03/89
Date Extracted: 02/08/89
Date Analyzed: 03/02/89 / 03/03/89
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	0.10	
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	0.20	
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: 05/15/89

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

SD-1

Lab Name: H2M LABS, INC.
Contract: GIBBS & HILL SAUGERTIES LANDFILL

Matrix: SOIL
Sample wt: 30.05 (g)
Level: LOW
% Moisture: not dec. 13 dec.
Extraction: SONC
GPC Cleanup: Y pH: 7.3

Lab Sample ID: 952430
Lab File ID: 570 / 1110
Date Received: 02/03/89
Date Extracted: 02/06/89
Date Analyzed: 03/02/89 / 03/03/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	18	U
76-44-8	Heptachlor	18	U
309-00-2	Aldrin	18	U
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	37	U
72-55-9	4,4'-DDE	37	U
72-20-8	Endrin	37	U
33213-65-9	Endosulfan II	37	U
72-54-8	4,4'-DDD	37	U
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	13	J
72-43-5	Methoxychlor	180	U
53494-70-5	Endrin ketone	37	U
5103-71-9	alpha-Chlordane	180	U
5103-74-2	gamma-Chlordane	180	U
8001-35-2	Toxaphene	370	U
12674-11-2	Aroclor-1016	180	U
11104-28-2	Aroclor-1221	180	U
11141-16-5	Aroclor-1232	180	U
53469-21-9	Aroclor-1242	180	U
12672-29-6	Aroclor-1248	180	U
11097-69-1	Aroclor-1254	370	U
11096-82-5	Aroclor-1260	370	U

Date Reported: 05/15/89

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL SAUGERTIES LANDFILL SD-2

Matrix: SOIL
Sample Vol.: 30.07 (g)
Level: LOW
% Moisture: not dec. 38 dec.
Extraction: SONC
GPC Cleanup: Y pH: 7.2

Lab Sample ID: 952431
Lab File ID: 571 / 1111
Date Received: 02/03/89
Date Extracted: 02/06/89
Date Analyzed: 03/02/89 / 03/03/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	26	U
319-85-7	beta-BHC	26	U
319-86-8	delta-BHC	26	U
58-89-9	gamma-BHC (Lindane)	26	U
76-44-8	Heptachlor	26	U
309-00-2	Aldrin	26	U
1024-57-3	Heptachlor epoxide	26	U
959-98-8	Endosulfan I	26	U
60-57-1	Dieldrin	52	U
72-55-9	4,4'-DDE	52	U
72-20-8	Endrin	52	U
33213-65-9	Endosulfan II	52	U
72-54-8	4,4'-DDD	52	U
1031-07-8	Endosulfan sulfate	52	U
50-29-3	4,4'-DDT	52	U
72-43-5	Methoxychlor	260	U
53494-70-5	Endrin ketone	52	U
5103-71-9	alpha-Chlordane	260	U
5103-74-2	gamma-Chlordane	260	U
8001-35-2	Toxaphene	510	U
12674-11-2	Aroclor-1016	260	U
11104-28-2	Aroclor-1221	260	U
11141-16-5	Aroclor-1232	260	U
53469-21-9	Aroclor-1242	260	U
12672-29-6	Aroclor-1248	260	U
11097-69-1	Aroclor-1254	510	U
11096-82-5	Aroclor-1260	510	U

Date Reported: 05/15/89

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

PBLK

Lab Name: H2M LABS, INC. Contract:

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture: not dec. ___ dec. ___
Extraction: SepF
GPC Cleanup: N pH:

Lab Sample ID: B-2-8-89
Lab File ID: 560 / 1100
Date Received:
Date Extracted: 02/08/89
Date Analyzed: 03/02/89 / 03/02/89
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	0.10	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: 03/21/89

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John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

PBLK

Lab Name: H2M LABS, INC. Contract:

Matrix: SOIL
Sample wt: 30 g
Level: LOW
% Moisture: not dec.___ dec.___
Extraction: Sonc
GPC Cleanup: N pH: 7.0

Lab Sample ID: B-472
Lab File ID: 599 / 1099
Date Received:
Date Extracted: 02/06/89
Date Analyzed: 03/02/89 / 03/02/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	5	J
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	8	U
309-00-2	Aldrin	8	U
1024-57-3	Heptachlor epoxide	3	J
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: 03/24/89

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John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SW-1 MS

Lab Name: H2M LABS, INC. Contract: _____

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture: not dec. ___ dec. ___
Extraction: SepF
GPC Cleanup: N pH: 7.0

Lab Sample ID: 952426 MS
Lab File ID: 566 / 1106
Date Received: 02/03/89
Date Extracted: 02/08/89
Date Analyzed: 03/02/89 / 03/02/89
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	0.14		
60-57-1	Dieldrin	*		
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	*		
33213-65-9	Endosulfan II	0.03	J	1)
72-54-8	4,4'-DDD	0.03	J	1) 2)
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	*		
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: 03/24/89

* Analyte spiked
1) Value reported represents total for coeluting compounds
2) Breakdown product of spike

****
* Molloy *
****

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL SAUGERTIES LANDFILL

SW-1 MSD

Matrix: WATER
Sample Vol.: 1000 (mL)
Level: LOW
% Moisture: not dec. ___ dec. ___
Extraction: SEPF
GPC Cleanup: N pH: 7.0

Lab Sample ID: 952426 MSD
Lab File ID: 567 / 1107
Date Received: 02/03/89
Date Extracted: 02/08/89
Date Analyzed: 03/02/89 / 03/03/89
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	0.20	
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	0.02	J 1)
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	*	
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

* Analyte spiked. 1) Breakdown product of spike.

Date Reported: 05/15/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SD-1 MS

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL SAUGERTIES LANDFILL

Matrix: SOIL
Sample Wt/Vol: 30.07 (g)
Level: LOW
% Moisture: not dec. 13 dec.
Extraction: SONC
GPC Cleanup: Y pH: 7.3

Lab Sample ID: 952430 MS
Lab File ID: 572 / 1112
Date Received: 02/03/89
Date Extracted: 02/06/89
Date Analyzed: 03/03/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	*	
76-44-8	Heptachlor	*	
309-00-2	Aldrin	*	
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	6	J
60-57-1	Dieldrin	*	
72-55-9	4,4'-DDE	37	U
72-20-8	Endrin	*	
33213-65-9	Endosulfan II	37	U
72-54-8	4,4'-DDD	37	U
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	*	
72-43-5	Methoxychlor	184	U
53494-70-5	Endrin ketone	37	U
5103-71-9	alpha-Chlordane	184	U
5103-74-2	gamma-Chlordane	184	U
8001-35-2	Toxaphene	367	U
12674-11-2	Aroclor-1016	184	U
11104-28-2	Aroclor-1221	184	U
11141-16-5	Aroclor-1232	184	U
53469-21-9	Aroclor-1242	184	U
12672-29-6	Aroclor-1248	184	U
11097-69-1	Aroclor-1254	367	U
11096-82-5	Aroclor-1260	367	U

* Analyte spiked. 1) Breakdown product of spike.

Date Reported: 05/15/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL SAUGERTIES LANDFILL

SD-1 MSD

Matrix: SOIL
Sample Wt/Vol: 30.02 (g)
Level: LOW
% Moisture: not dec. 13 dec.
Extraction: SONC
GPC Cleanup: Y pH: 7.3

Lab Sample ID: 952430 MSD
Lab File ID: 573 / 1113
Date Received: 02/03/89
Date Extracted: 02/06/89
Date Analyzed: 03/03/89
Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/Kg	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	*	
76-44-8	Heptachlor	*	
309-00-2	Aldrin	*	
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	*	
72-55-9	4,4'-DDE	37	U
72-20-8	Endrin	*	
33213-65-9	Endosulfan II	9	J
72-54-8	4,4'-DDD	37	U
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	*	
72-43-5	Methoxychlor	184	U
53494-70-5	Endrin ketone	37	U
5103-71-9	alpha-Chlordane	184	U
5103-74-2	gamma-Chlordane	184	U
8001-35-2	Toxaphene	367	U
12674-11-2	Aroclor-1016	184	U
11104-28-2	Aroclor-1221	184	U
11141-16-5	Aroclor-1232	184	U
53469-21-9	Aroclor-1242	184	U
12672-29-6	Aroclor-1248	184	U
11097-69-1	Aroclor-1254	367	U
11096-82-5	Aroclor-1260	367	U

* Analyte spiked. 1) Breakdown product of spike.

Date Reported: 05/15/89

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H2M LABS, INC.

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SAMPLE [illegible]

CASE NARRATIVE FOR INORGANICS

ICP analysis was performed on the ARL 3410. Furnace analysis was performed on the Perkin Elmer Zeeman 5100 and Varian AA-30. Mercury was analyzed via the cold vapor method using the Perkin Elmer 2380. The Perkin Elmer 2380 was also used for flame analysis.

The thallium matrix spike analysis fo sample SW-1 and the lead matrix spike analysis of sample SD-1 were not reportable. Both samples required the method of standard additions for analysis.

The relative percent differences between sample and duplicate for lead, aluminum, iron, and zinc analyses of sample SW-1 are greater than 20%. The results are all greater than the 5X CRDL level. The data for the aforementioned elements were reported flagged with an "*" on Forms I-IN and VI-IN. The difference between sample and duplicate for cadmium analysis of sample SD-1 is greater than the CRDL. The sample result is less than 5X CRDL. The cadmium data for SD-1 has been reported flagged with an "*" on Forms I-IN and VI-IN. Duplicate thallium analysis of sample SW-1 was not reportable. Duplicate lead analysis of sample SD-1 was not reportable. Both samples required the method of standard additions for analysis.

The ICP serial dilution analysis for beryllium did not agree with 10% of the original result. The beryllium data for associated samples were reported flagged with "E" on Forms I-IN and IX-IN.

The arsenic and thallium post digestion spike recoveries for sample SW-2 were not within 85-115%. Both sample analyses had absorbance readings that were less than 50% of the spike absorbances. The arsenic and thallium results were flagged with a "W" on the corresponding data sheets.

The method of standard addition was used for lead analysis of samples SD-1 and SD-2 and for arsenic analysis of sample SD-1. The correlation coefficients for the least squares fit of data are all greater than 0.995. The reported values obtained by MSA were flagged on the appropriate data sheets (Form I-IN) with an "S". The MSA analysis of sample SW-1 for thallium had a correlation coefficient that was less than 0.995 for both runs. The reported value obtained by MSA was flagged on the data sheets (Form I-IN) with a "+".

H2M LABS, INC.

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(516) 694-3040 FAX: (516) 694-4122

CASE NARRATIVE FOR INORGANICS (cont'd)

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 12, 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

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.: GIB023

Matrix (soil/water): WATER Lab Sample ID: 952428

Level (low/med): LOW Date Received: 02/03/89

% 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	11200		*	P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic	6.0			F
7440-39-3	Barium	304			P
7440-41-7	Beryllium	2.0	B	E	P
7440-43-9	Cadmium	7.0			P
7440-70-2	Calcium	99000			P
7440-47-3	Chromium	20.0			A
7440-48-4	Cobalt	22.0	B		P
7440-50-8	Copper	29.0			P
7439-89-6	Iron	27300		*	P
7439-92-1	Lead	80.0		*	F
7439-95-4	Magnesium	33000			P
7439-96-5	Manganese	3610			P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium	59300.0			A
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	10.0	U		A
7440-23-5	Sodium	127000			P
7440-28-0	Thallium	4.0	B	+	F
7440-62-2	Vanadium	43.0	B		P
7440-66-6	Zinc	278		*	P
	Cyanide	10.0	U		C

Color Before: ORANGE Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:
SAUGERTIES LANDFILL - SURFACE WATER SAMPLE

DATE REPORTED: MAY 10 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

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.: GIB023

Matrix (soil/water): WATER Lab Sample ID: 952429

Level (low/med): LOW Date Received: 02/03/89

% 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		*	P
7440-36-0	Antimony	46.0	U		P
7440-38-2	Arsenic	4.0		W	F
7440-39-3	Barium	103	B		P
7440-41-7	Beryllium	1.0	B	E	P
7440-43-9	Cadmium	5.0			P
7440-70-2	Calcium	37500			P
7440-47-3	Chromium	10.0			A
7440-48-4	Cobalt	27.0	B		P
7440-50-8	Copper	32.0			P
7439-89-6	Iron	19700		*	P
7439-92-1	Lead	39.0		*	F
7439-95-4	Magnesium	9140			P
7439-96-5	Manganese	1490			P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	39.0	U		P
7440-09-7	Potassium	4600.0	B		A
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	10.0	U		A
7440-23-5	Sodium	10500			P
7440-28-0	Thallium	2.0	U	W	F
7440-62-2	Vanadium	33.0	B		P
7440-66-6	Zinc	757		*	P
	Cyanide	10.0	U		C

Color Before: ORANGE Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:
SAUGERTIES LANDFILL - SURFACE WATER SAMPLE

DATE REPORTED: MAY 10 1989

John J. Molloy, P.E.
Laboratory Director

35

FORM I - IN 7/88

C-87

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

XXXSD1

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB023

Matrix (soil/water): SOIL Lab Sample ID: 952432

Level (low/med): LOW Date Received: 02/03/89

% Solids: 62.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11000			P
7440-36-0	Antimony	14.8	U		P
7440-38-2	Arsenic	3.9		S	F
7440-39-3	Barium	75.2			P
7440-41-7	Beryllium	1.9		E	P
7440-43-9	Cadmium	8.4		*	P
7440-70-2	Calcium	3700			P
7440-47-3	Chromium	16.2			A
7440-48-4	Cobalt	18.1			P
7440-50-8	Copper	10.0			P
7439-89-6	Iron	37100			P
7439-92-1	Lead	31.0		S	F
7439-95-4	Magnesium	5320			P
7439-96-5	Manganese	643			P
7439-97-6	Mercury	0.11			CV
7440-02-0	Nickel	30.3			P
7440-09-7	Potassium	808.0	B		A
7782-49-2	Selenium	0.3	U		F
7440-22-4	Silver	3.2	U		A
7440-23-5	Sodium	2910			P
7440-28-0	Thallium	0.6	U		F
7440-62-2	Vanadium	22.6			P
7440-66-6	Zinc	237			P
	Cyanide	1.61	U		C

Color Before: BROWN Clarity Before: OPAQUE Texture: COURSE

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:
SAUGERTIES LANDFILL - SEDIMENT SAMPLE

DATE REPORTED: MAY 10 1989

John J. Molloy, P.E.
Laboratory Director

FORM I - IN 7/88

C-88

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

XXXSD2

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB023

Matrix (soil/water): SOIL Lab Sample ID: 952433

Level (low/med): LOW Date Received: 02/03/89

% Solids: 87.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11500			P
7440-36-0	Antimony	10.6	U		P
7440-38-2	Arsenic	0.9	B		F
7440-39-3	Barium	46.0	B		P
7440-41-7	Beryllium	1.4		E	P
7440-43-9	Cadmium	4.4		*	P
7440-70-2	Calcium	4230			P
7440-47-3	Chromium	16.1			A
7440-48-4	Cobalt	13.1			P
7440-50-8	Copper	7.6			P
7439-89-6	Iron	25300			P
7439-92-1	Lead	20.5		S	F
7439-95-4	Magnesium	5600			P
7439-96-5	Manganese	549			P
7439-97-6	Mercury	0.05	U		CV
7440-02-0	Nickel	36.8			P
7440-09-7	Potassium	621.0	B		A
7782-49-2	Selenium	0.2	U		F
7440-22-4	Silver	2.3	U		A
7440-23-5	Sodium	1990			P
7440-28-0	Thallium	0.46	U		F
7440-62-2	Vanadium	18.4			P
7440-66-6	Zinc	193			P
	Cyanide	1.15	U		C

Color Before: BROWN Clarity Before: OPAQUE Texture: COURSE

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:
SAUGERTIES LANDFILL - SEDIMENT SAMPLE

DATE REPORTED: MAY 10 1989

John J. Molloy, P.E.
Laboratory Director

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 recovery of the spiked compounds trichloroethene and benzene failed to meet the required Q.C. limits in GW-5 MSD.

Mass 43 was used as the quantitation ion for 2-butanone in all standards and samples due to the extremely poor response factor generated from mass 72.

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.

****
* *
* JJBolloy *
****

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

2A
WATER VOLATILE SURROGATE RECOVERY

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

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

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	VSTD	110	109	110		0
02	VBLK	89	88	90		0
03	GW-1	100	98	96		0
04	GW-2	99	99	96		0
05	GW-3	100	99	97		0
06	GW-4	101	99	99		0
07	GW-5	100	101	101		0
08	GW-5MS	101	100	100		0
09	GW-5MSD	101	98	100		0
10	FIELD BLAN	100	100	100		0
11	TRIP BLANK	99	97	100		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

D Surrogates diluted out

5

C-91

H2M LABS, INC.
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3A
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

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

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

Matrix Spike - EPA Sample No.: GW-5

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.00	0.00	35.00	70	61-145
Trichloroethene	50.00	0.00	37.00	74	71-120
Benzene	50.00	0.00	40.00	79	76-127
Toluene	50.00	0.00	41.00	81	76-125
Chlorobenzene	50.00	0.00	41.00	81	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.00	34.00	67	4	14	61-145
Trichloroethene	50.00	35.00	69 *	6	14	71-120
Benzene	50.00	36.00	72 *	9	11	76-127
Toluene	50.00	38.00	76	8	13	76-125
Chlorobenzene	50.00	38.00	75	7	13	75-130

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

* Values outside of qc limits

RPD: 0 out of 5 outside limits
Spike Recovery: ~~1~~ 2 out of 10 outside limits

COMMENTS: _____

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
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4A

VOLATILE METHOD BLANK SUMMARY

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

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

Lab File ID: >P0153 Lab Sample ID: BLANK

Date Analyzed: 3/02/89 Time Analyzed: 11:58

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: 70 3

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	GW-1	953771	>P0154	12:43
02	GW-2	953772	>P0155	13:19
03	GW-3	953773	>P0156	14:22
04	GW-4	953774	>P0157	14:58
05	GW-5	953775	>P0158	15:33
06	GW-5MS	953775MS	>P0159	16:07
07	GW-5MSD	953775MSD	>P0160	16:42
08	FIELD BLANK	953776	>P0161	17:18
09	TRIP BLANK	953777	>P0162	17:53
10				
12				
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19				
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21				
22				
23				
24				

COMMENTS: _____

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-1

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953771

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0154

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	5.	U
67-64-1	Acetone	10.	U
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	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
10061-01-5	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
10061-02-6	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
133-02-7	Xylene (total)	5.	U

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John J. Molloy P.E.
Laboratory Director

11

H2M LABS, INC.

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

1E

EPA SAMPLE NO.

GW-1

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953771

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0054

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/2/89

Column: CAP 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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30.					

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-2

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953772

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0155

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	5.	U
67-64-1	Acetone	10.	U
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	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
10061-01-5	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
10061-02-6	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
133-02-7	Xylene (total)	5.	U

John J. Molloy, P.E.
Laboratory Director

13

C-96

H2M LABS, INC.

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW-2

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953772

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0055

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 ___ Date Analyzed: 3/2/89

Column: CAP 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.					
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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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-3

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953773

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0156

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	5.	U
67-64-1	Acetone	10.	U
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	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
10061-01-5	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
10061-02-6	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	2.	J
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	2.	J

John J. Molloy, P.E.
Laboratory Director

15

C-98

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW-3

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953773

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0056

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/2/89

Column: CAP 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.	1.106467	1,4-DICHLOROBENZENE	16.44	5.00	5~~6~~ J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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John J. Molloy, P.E.
Laboratory Director

16

1/87 Rev.

H2M LABS, INC.

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(516) 694-3040 FAX: (516) 694-4122

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-4

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953774

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0157

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	5.	U
67-64-1	Acetone	10.	U
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	6.	
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
10061-01-5	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
10061-02-6	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
133-02-7	Xylene (total)	5.	U

John J. Molloy, P.E.
Laboratory Director

17

C-100

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H2M LABS, INC.

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1E

EPA SAMPLE NO.

GW-4

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953774

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0057

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/2/89

Column: CAP 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

H2M LABS, INC.

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-5

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0158

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec. 0 __ Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	2.	J
67-64-1	Acetone	10.	U
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	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
10061-01-5	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
10061-02-6	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
133-02-7	Xylene (total)	5.	U

John J. Molloy, P.E.
Laboratory Director

C-102

H2M LABS, INC.

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

1E

EPA SAMPLE NO.

GW-5

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0058

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/2/89

Column: CAP 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.					
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John J. Molloy, PE,
Laboratory Director

H2M LABS, INC.

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(516) 694-3040 FAX: (516) 694-4122

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953776

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0161

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	5.	U
67-64-1	Acetone	10.	U
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	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
10061-01-5	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
10061-02-6	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
133-02-7	Xylene (total)	5.	U

John J. Molloy, P.E.
Laboratory Director

21

H2M LABS, INC.

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

1E

VOLATILE 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-1

Matrix: (soil/water) WATER Lab Sample ID: 953776

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0061

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/2/89

Column: CAP 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

H2M LABS, INC.

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953777

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0162

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec. 0 __ Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	5.	U
67-64-1	Acetone	10.	U
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	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
10061-01-5	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
10061-02-6	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
133-02-7	Xylene (total)	5.	U

John J. Molloy, P.E.
Laboratory Director

23

C-106

H2M LABS, INC.

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(516) 694-3040 FAX: (516) 694-4122

1E

EPA SAMPLE NO.

TRIP BLANK

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953777

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0062

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/2/89

Column: CAP 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.					
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John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK

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

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

Matrix: (soil/water) WATER Lab Sample ID: BLANK

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0153

Level: (low/med) LOW Date Received: ------88

% Moisture: not dec. 0 __ Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	5.	U
67-64-1	Acetone	10.	U
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	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
10061-01-5	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
10061-02-6	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
133-02-7	Xylene (total)	5.	U

John J. Molloy, P.E.
Laboratory Director

82

C-108

FORM I VOA 1/87 Rev.

H2M LABS, INC.

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1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLANK

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

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

Matrix: (soil/water) WATER Lab Sample ID: BLANK

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0053

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.0 __ Date Analyzed: 3/2/89

Column: CAP 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.					
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John J. Molloy, P.E.
Laboratory Director

83

H2M LABS, INC.

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(516) 694-3040 FAX: (516) 694-4122

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-5MS

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775MS

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0159

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec.0 __ Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	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	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
10061-01-5	cis-1,3-Dichloropropene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
10061-02-6	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
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

John J. Molloy, P.E.
Laboratory Director

C-110

H2M LABS, INC.

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-5MSD

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775MSD

Sample wt/vol: 5 (g/mL) ML Lab File ID: >P0160

Level: (low/med) LOW Date Received: 3/1/89

% Moisture: not dec. 0 Date Analyzed: 3/02/89

Column: (pack/cap) CAP Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
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	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	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	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
10061-01-5	cis-1,3-Dichloropropene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
10061-02-6	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
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

CASE NARRATIVE FOR BASE NEUTRAL/ACID EXTRACTABLES

Samples rec'd 8/1/89

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

The surrogate 2,4,6-tribromophenal exceeded allowable recovery limits for samples GW-2, GW-5, GW-5 MSD. Not all Q.C. requirements were met for GW-5 MS/MSD. GW-5 MSD contained bis(2-ethylhexyl)phathate at a concentration of 710 ug/l. This level was not present in either the sample or MS and is suspected of being introduced during the extraction process. The MSD was not diluted and reanalyzed.

Late eluting TIC's present in some samples are suspected column bleed.

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.

****
* *
* JJMolloy *
* *
****

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-1

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	SBLK 484	100	104	106	48	76	99		0
02	GW-1	108	108	126	43	73	109		0
03	GW-2	111	110	133	61	86	128 *		1
04	GW-3	91	91	101	28	53	81		0
05	GW-4	106	107	122	55	92	121		0
06	GW-5	83	78	95	49	79	133 *		1
07	GW-5 MS	101	114	136	44	75	120		0
08	GW-5 MSD	111	108	125	44	73	131 *		1
09	FIELD BLAN	101	113	137	48	79	100		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

5

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-1

Matrix Spike - EPA Sample No.: GW-5

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	#	QC LIMITS REC.
Phenol	210.00	0.00	94.00	45		12- 89
2-Chlorophenol	220.00	0.00	220.00	100		27-123
1,4-Dichlorobenzene	100.00	0.00	100.00	100	*	36- 97
N-Nitroso-di-n-prop.(1)	110.00	0.00	120.00	112		41-116
1,2,4-Trichlorobenzene	120.00	0.00	130.00	109	*	39- 98
4-Chloro-3-methylphenol	200.00	0.00	230.00	113	*	23- 97
Acenaphthene	110.00	0.00	94.00	85		46-118
4-Nitrophenol	200.00	0.00	85.00	43		10- 80
2,4-Dinitrotoluene	110.00	0.00	120.00	106	*	24- 96
Pentachlorophenol	210.00	0.00	100.00	49		9-103
Pyrene	100.00	0.00	70.00	70		26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	210.00	95.00	45		0		42	12- 89
2-Chlorophenol	220.00	220.00	100		0		40	27-123
1,4-Dichlorobenzene	100.00	95.00	95		5		28	36- 97
N-Nitroso-di-n-prop.(1)	110.00	100.00	93		19		38	41-116
1,2,4-Trichlorobenzene	120.00	110.00	95		14		28	39- 98
4-Chloro-3-methylphenol	200.00	230.00	117	*	3		42	23- 97
Acenaphthene	110.00	80.00	73		15		31	46-118
4-Nitrophenol	200.00	100.00	50		15		50	10- 80
2,4-Dinitrotoluene	110.00	97.00	88		19		38	24- 96
Pentachlorophenol	210.00	49.00	23		72	*	50	9-103
Pyrene	100.00	59.00	59		17		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: 1 out of 11 outside limits
Spike Recovery: 5 out of 22 outside limits

COMMENTS: _____

C-114

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.: GW-1

Lab File ID: >E0104 Lab Sample ID: SBLK 484

Date Extracted 03/03/89 Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 3/15/89 Time Analyzed: 15:06

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-1	953771	>E0105	3/15/89
02	GW-2	953772	>E0106	3/15/89
03	GW-3	953773	>E0107	3/15/89
04	GW-4	953774	>E0108	3/15/89
05	GW-5	953775	>E0109	3/15/89
06	GW-5 MS	953775 MS	>E0110	3/15/89
07	GW-5 MSD	953775 MSD	>E0111	3/15/89
08	FIELD BLANK	953776	>E0112	3/15/89
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COMMENTS: _____

_____

7

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.

GW-1

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953771

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0105

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Molloy, P.E.
Laboratory Director

12

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.

GW-1

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953771

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0105

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	30.	B
117-84-0	Di-n-octylphthalate	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

H2M LABS, INC.

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(516) 694-3040 FAX (516) 694-2412

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW-1

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953771

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0105

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	6.53	10.	J
2.	21964498	1,13-Tetradecadiene (8CI9CI)	29.40	56.	J
3.		Unknown	37.43	12.	J
4.		Unknown	40.06	18.	J
5.		Unknown	41.73	16.	J
6.					
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30.					

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-2

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953772

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0106

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-2

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953772

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0106

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	43.	B
117-84-0	Di-n-octylphthalate	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

16

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX (516) 694-2512

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW-2

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953772

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0106

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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.	1120214	Undecane (8CI9CI)	13.95	8.	J
2.	21964498	1,13-Tetradecadiene (8CI9CI)	29.38	46.	J
3.		Unknown	39.24	8.	J
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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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-3

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953773

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0107

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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Laboratory Director

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW-3

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953773

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0107

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	77.	B
117-84-0	Di-n-octylphthalate	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

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW-3

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953773

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0107

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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 (8C19C1)	29.43	58.	J
2.					
3.					
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John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-4

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953774

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0108

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Molloy, P.E.
Laboratory Director

C-125

H2M LABS, INC.
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW-4

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953774

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0108

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	54.	B
117-84-0	Di-n-octylphthalate	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

C-126

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW-4

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953774

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0108

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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)	29.47	44.	J
2.					
3.					
4.					
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John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-5

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0109

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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Laboratory Director

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW-5

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0109

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	120.	B
117-84-0	Di-n-octylphthalate	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

C-129

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516) 694-3040 FAX (516) 694-2212

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW-5

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0109

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	21964498	1,13-Tetradecadiene (8CI9CI)	29.47	44.	J
2.		Unknown	37.42	12.	J
3.		Unknown	38.64	14.	J
4.		Unknown	40.05	12.	J
5.		Unknown	41.70	10.	J
6.		Unknown	43.76	16.	J
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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

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-1

Matrix: (soil/water) WATER Lab Sample ID: 953776

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0112

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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.

FIELD BLANK

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953776

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0112

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	35.	B
117-84-0	Di-n-octylphthalate	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

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
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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-1

Matrix: (soil/water) WATER Lab Sample ID: 953776

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0112

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

GPC Cleanup: (Y/N) N pH:-- Dilution Factor: 1.00000

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	9.61	8.	J
2.	21964498	1,13-Tetradecadiene (8CI9CI)	29.43	80.	J
3.					
4.					
5.					
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30.					

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK 484

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

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

Matrix: (soil/water) WATER Lab Sample ID: SBLK 484

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0104

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

John J. Molloy, P.E.
Laboratory Director

H2M LABS, INC.
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(516) 694-3040 FAX:(516)694-4122

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK 484

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

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

Matrix: (soil/water) WATER Lab Sample ID: SBLK 484

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0104

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	45.	B
117-84-0	Di-n-octylphthalate	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

C-135

H2M LABS, INC.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK 484

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

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

Matrix: (soil/water) WATER Lab Sample ID: SBLK 484

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0104

Level: (low/med) LOW Date Received: --------

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 03/15/89

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.					
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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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-5 MS

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775 MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0110

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

FORM I SV-1 1/87 Rev.

John J. Molloy, P.E.
Laboratory Director

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
GW-5 MS

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775 MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0110

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	61.	B
117-84-0	Di-n-octylphthalate	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.

John J. Molloy, P.E.
Laboratory Director

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-5 MSD

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775 MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0111

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

FORM I SV-1 1/87 Rev.

John J. Molloy, P.E.
Laboratory Director

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-5 MSD

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

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

Matrix: (soil/water) WATER Lab Sample ID: 953775 MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >E0111

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec.-- dec. -- Date Extracted: 03/03/89

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 3/15/89

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	710.	BD
117-84-0	Di-n-octylphthalate	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.

John J. Molloy, P.E.
Laboratory Director

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

CASE NARRATIVE FOR PESTICIDES/PCBs
SAMPLES REC'D 3.89

QC Data

Surrogate recoveries exceeded QC limits for most extracts due to the interference of coelution of a phthalate. The secondary column does not resolve this pair of peaks and therefore the recoveries could not be calculated from the secondary column instead. Response factors for quantification, including that for DBC, were taken from the Individual Mixes and not the Evaluation Mixes.

The exceeding recoveries for the Endrin spike duplicates are suspected to also be due to an interference. Results calculated from the secondary column do meet the limits but have not been reported due to nonlinearity of the Evaluation Mixes on that column. The RPD for the Aldrin recoveries slightly exceeds the QC limit.

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: 05/24/89

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*
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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

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

WATER PESTICIDE MATRIX SPIKE/MATRIX [illegible] DUPLICATE RECOVERY

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

Matrix Spike - Sample No.: GW-5

Compound	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	0.2	0	0.16	82	56-123
Heptachlor	0.2	0	0.24	119	40-131
Aldrin	0.2	0	0.14	69	40-120
Dieldrin	0.5	0	0.46	91	52-126
Endrin	0.5	0	0.88	176*	56-121
4,4' DDT	0.5	0	0.60	119	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	0.16	82	0	15	56-123
Heptachlor	0.2	0.21	106	12	20	40-131
Aldrin	0.2	0.11	54	24*	22	40-120
Dieldrin	0.5	0.46	92	1	18	52-126
Endrin	0.5	0.89	178 *	1	21	56-121
4,4' DDT	0.5	0.57	114	4	27	38-127

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

RPD: 1 out of 6 outside limits
Spike Recovery: 2 out of 12 outside limits

COMMENTS:

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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-3/02/89 Lab File ID: 657 / 1193
Matrix: WATER Level: LOW
Date Extracted: 03/02/89 Extraction: SEPF
Date Analyzed (1): 03/15/89 Date Analyzed (2): 03/15/89
Time Analyzed (1): 05:38 Time Analyzed (2): 05:38
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
Sample ID: SOIL/SEDIMENT SAMPLES / GROUP #SH189041152011

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

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	GW-1	953771	03/15/89	03/15/89
02	GW-2	953772	"	"
03	GW-3	953773	03/16/89	03/16/89
04	GW-4	953774	"	"
05	GW-5	953775	"	"
06	FIELD BLANK	953776	"	"
07	GW-5 MS	953775 MS	"	"
08	GW-5 MSD	953775 MSD	"	"
09				
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Comments:

C-143

H2M LABS, INC.

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(516) 694-3040 FAX: (516) 694-4122

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-1
SAUGERTIES LANDFILL
GROUNDWATER SAMPLES

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: 7

Lab Sample ID: 953771
Lab File ID: 682 / 1219
Date Received: 03/01/89
Date Extracted: 03/02/89
Date Analyzed: 03/15/89
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	0.10	U
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: 05/11/89

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C-144

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-2
SAUGERTIES LANDFILL
GROUNDWATER SAMPLES

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: 7

Lab Sample ID: 953772
Lab File ID: 683 / 1220
Date Received: 03/01/89
Date Extracted: 03/02/89
Date Analyzed: 03/15/89
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	0.10	U
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: 05/11/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-3
SAUGERTIES LANDFILL
GROUNDWATER SAMPLES

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: 7

Lab Sample ID: 953773
Lab File ID: 688 / 1225
Date Received: 03/01/89
Date Extracted: 03/02/89
Date Analyzed: 03/16/89
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	0.10	U
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: 05/11/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL

GW-4
SAUGERTIES LANDFILL
GROUNDWATER SAMPLES

Matrix: WATER
Sample wt: vol 1000(mL)
Level: LOW
% Moisture: not dec. ____ dec. ____
Extraction: SepF
GPC Cleanup: N pH: 7

Lab Sample ID: 953774
Lab File ID: 689 / 1226
Date Received: 03/01/89
Date Extracted: 03/02/89
Date Analyzed: 03/16/89
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	0.10	U
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: 05/11/89

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-5
SAUGERTIES LANDFILL
GROUNDWATER SAMPLES

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: 7

Lab Sample ID: 953775
Lab File ID: 691 / 1228
Date Received: 03/01/89
Date Extracted: 03/02/89
Date Analyzed: 03/16/89
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	0.10	U
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: 05/11/89

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C-148

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

FIELD BLANK
SAUGERTIES LANDFILL
GROUNDWATER SAMPLES

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: 7

Lab Sample ID: 953776
Lab File ID: 692 / 1229
Date Received: 03/01/89
Date Extracted: 03/02/89
Date Analyzed: 03/16/89
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	0.10	U
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: 05/11/89

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C-148

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

PBLK

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL SAUGERTIES LANDFILL

Matrix: WATER Lab Sample ID: B-3/2/89

Sample wt: vol 1000 (mL) Lab File ID: 657 / 1193

Level: LOW Date Received: --

% Moisture:not dec. dec. Date Extracted: 03/02/89

Extraction: SepF Date Analyzed: 03/15/89

GPC Cleanup: N pH: 7 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	0.10	U
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: 05/11/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-5 MS

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL SAUGERTIES LANDFILL

Matrix: WATER
Sample wt: vol 1000 (mL)
Level: LOW
% Moisture: not dec. ____ dec. ____
Extraction: SepF
GPC Cleanup: N pH: 7

Lab Sample ID: 953775 MS
Lab File ID: 693 / 1230
Date Received: 03/01/89
Date Extracted: 03/02/89
Date Analyzed: 03/16/89
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	0.5	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

* Analyte spiked

Date Reported: 05/11/89

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ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

PESTICIDE ORGANICS ANALYSIS DATA SHEET

GW-5 MSD

Lab Name: H2M LABS, INC. Contract: GIBBS & HILL SAUGERTIES LANDFILL

Matrix: WATER
Sample wt: vol 1000 (mL)
Level: LOW
% Moisture: not dec. ____ dec. ____
Extraction: SepF
GPC Cleanup: N pH: 7

Lab Sample ID: 953775 MSD
Lab File ID: 694 / 1231
Date Received: 03/01/89
Date Extracted: 03/02/89
Date Analyzed: 03/16/89
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	0.5	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

***Analyte spiked**

Date Reported: 05/11/89

John J. Molloy, P.E.
Laboratory Director

C-152

H2M 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 INORGANICS

Post digestion spike recoveries for selenium analysis were less than 85%. The sample absorbances were less than 50% of the spike absorbances. The matrix spike recovery for selenium sample GW-5 (953782) was less than 75%. All selenium data was reported flagged with "WN".

The duplicate analysis for manganese and aluminum sample GW-5 (953782) were not within control limits. All manganese and aluminum data was reported flagged with an "*". The ICP serial dilution for barium, iron and manganese were not within control limits. All barium, iron and manganese data was reported flagged with an "E".

The spike recovery for cyanide was less than 75%. All cyanide results were reported flagged with an "N" even though all cyanide results were less than CRDL.

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: 05/06/89

John J. Molloy, P.E.
Laboratory Director

C-153

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

XXXGW1

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB027

Matrix (soil/water): WATER Lab Sample ID: 953778

Level (low/med): LOW Date Received: 03/01/89

% 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	1210		*	P
7440-36-0	Antimony	2	B		P
7440-38-2	Arsenic	1	B		P
7440-39-3	Barium	88.0	B	E	P
7440-41-7	Beryllium	6.0			A
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	4020	B		P
7440-47-3	Chromium	10	U		A
7440-48-4	Cobalt	24.0	B		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	1860		E	P
7439-92-1	Lead	3	B		P
7439-95-4	Magnesium	716	B		P
7439-96-5	Manganese	38.0		E*	P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	40	U		A
7440-09-7	Potassium	900	B		A
7782-49-2	Selenium	2		W N	P
7440-22-4	Silver	10	U		A
7440-23-5	Sodium	79400			P
7440-28-0	Thallium	2	U		P
7440-62-2	Vanadium	50	U		A
7440-66-6	Zinc	29.0			P
	Cyanide	10	U	N	C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
SAUGERTIES LANDFILL

DATE REPORTED: MAY 15 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

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXGW2

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB027

Matrix (soil/water): WATER Lab Sample ID: 953779

Level (low/med): LOW Date Received: 03/01/89

% 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	3320		*	P
7440-36-0	Antimony	2	B		F
7440-38-2	Arsenic	2	B		F
7440-39-3	Barium	240		E	P
7440-41-7	Beryllium	6			A
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	56900			P
7440-47-3	Chromium	10	U		A
7440-48-4	Cobalt	28.0	B		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	5500		E	P
7439-92-1	Lead	3	B		F
7439-95-4	Magnesium	13200			P
7439-96-5	Manganese	1660		E*	P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	40	U		A
7440-09-7	Potassium	2000	B		A
7782-49-2	Selenium	1	U	W N	F
7440-22-4	Silver	10	U		A
7440-23-5	Sodium	15200			P
7440-28-0	Thallium	2	U		F
7440-62-2	Vanadium	50	U		A
7440-66-6	Zinc	24.0			P
	Cyanide	10	U	N	C

Color Before: TAN Clarity Before: CLOUDY Texture:

Color After: TAN Clarity After: CLOUDY Artifacts:

Comments:
SAUGERTIES LANDFILL

DATE REPORTED: MAY 15 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

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXGW3

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB027

Matrix (soil/water): WATER Lab Sample ID: 953780

Level (low/med): LOW Date Received: 03/01/89

% 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	377		*	P
7440-36-0	Antimony	1	B		P
7440-38-2	Arsenic	3	B		P
7440-39-3	Barium	189	B	E	P
7440-41-7	Beryllium	6			A
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	52100			P
7440-47-3	Chromium	10	U		A
7440-48-4	Cobalt	22.0	B		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	11500		E	P
7439-92-1	Lead	2	B		P
7439-95-4	Magnesium	9770			P
7439-96-5	Manganese	7160		E*	P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	40.0	U		A
7440-09-7	Potassium	7000	B		A
7782-49-2	Selenium	1	U	W N	P
7440-22-4	Silver	10	U		A
7440-23-5	Sodium	61700			P
7440-28-0	Thallium	2	B		P
7440-62-2	Vanadium	50	U		A
7440-66-6	Zinc	23.0			P
	Cyanide	10	U	N	C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
SAUGERTIES LANDFILL

DATE REPORTED: MAY 15 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

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXGW4

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB027

Matrix (soil/water): WATER Lab Sample ID: 953781

Level (low/med): LOW Date Received: 03/01/89

% 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	1160		*	P
7440-36-0	Antimony	1	U		F
7440-38-2	Arsenic	0.1	U		F
7440-39-3	Barium	30.0	B	E	P
7440-41-7	Beryllium	5			A
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	17300			P
7440-47-3	Chromium	10	U		A
7440-48-4	Cobalt	31.0	B		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	1480		E	P
7439-92-1	Lead	2	U		F
7439-95-4	Magnesium	3300	B		P
7439-96-5	Manganese	331		E*	P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	40	U		A
7440-09-7	Potassium	800	B		A
7782-49-2	Selenium	1	U	W N	F
7440-22-4	Silver	10	U		A
7440-23-5	Sodium	7310			P
7440-28-0	Thallium	2	U		F
7440-62-2	Vanadium	50	U		A
7440-66-6	Zinc	8.0	B		P
	Cyanide	10	U	N	C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
SAUGERTIES LANDFILL

DATE REPORTED: MAY 15 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

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

XXXGW5

Lab Name: H2M LABS, INC. Contract: GIBBS&HILL

Lab Code: H2MLAB Case No.: SAS No.: SDG No.: GIB027

Matrix (soil/water): WATER Lab Sample ID: 953782

Level (low/med): LOW Date Received: 03/01/89

% 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	3650		*	P
7440-36-0	Antimony	1	B		P
7440-38-2	Arsenic	2	B		P
7440-39-3	Barium	206		E	P
7440-41-7	Beryllium	5			A
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	52700			P
7440-47-3	Chromium	10	U		A
7440-48-4	Cobalt	48.0	B		P
7440-50-8	Copper	10.0	B		P
7439-89-6	Iron	6180		E	P
7439-92-1	Lead	4	B		P
7439-95-4	Magnesium	13000			P
7439-96-5	Manganese	1250		E*	P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	40	U		A
7440-09-7	Potassium	2100	B		A
7782-49-2	Selenium	1	U	W N	P
7440-22-4	Silver	10	U		A
7440-23-5	Sodium	12700			P
7440-28-0	Thallium	2	U		P
7440-62-2	Vanadium	50	U		A
7440-66-6	Zinc	32.0			P
	Cyanide	10	U	N	C

Color Before: TAN Clarity Before: CLOUDY Texture:

Color After: TAN Clarity After: CLOUDY Artifacts:

Comments:
SAUGERTIES LANDFILL

DATE REPORTED: MAY 15 1989

John J. Molloy, P.E.
Laboratory Director

28

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.: GIB027

Matrix (soil/water): WATER Lab Sample ID: 953783

Level (low/med): LOW Date Received: 03/01/89

% 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	1	B		P
7440-38-2	Arsenic	0.1	U		P
7440-39-3	Barium	7.0	B	E	P
7440-41-7	Beryllium	5	U		A
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	330	U		P
7440-47-3	Chromium	10	U		A
7440-48-4	Cobalt	34.0	B		P
7440-50-8	Copper	6.0	U		P
7439-89-6	Iron	40.0	B	E	P
7439-92-1	Lead	2	B		P
7439-95-4	Magnesium	235	B		P
7439-96-5	Manganese	5.0	B	E*	P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	40	U		A
7440-09-7	Potassium	500	B		A
7782-49-2	Selenium	1	U	W N	P
7440-22-4	Silver	10	U		A
7440-23-5	Sodium	627	B		P
7440-28-0	Thallium	2	B		P
7440-62-2	Vanadium	50	U		A
7440-66-6	Zinc	5.0	B		P
	Cyanide	10	U	N	C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
SAUGERTIES LANDFILL

DATE REPORTED: MAY 15 1989

John J. Molloy, P.E.
Laboratory Director

D. HISTORIC LITERATURE

CONTENTS

RECEIVED JUN 11 1986

D.1

Appendix 1.1-1

GLORIA M. SCHOVEL
SUPERVISOR

TOWN OF SAUGERTIES

TOWN HALL
SAUGERTIES, NEW YORK 12477
914-246-2809

MEMBERS OF TOWN BOARD
JOSEPH J. FABIANO
FRANCIS P. FLORIO
JOHN SERRA, JR.
GEORGE J. TERPENING, JR.

May 31, 1986

EA Science and Technology
R. D. #2 Box 91
Goshen Turnpike
Middeltown, New York 10940

Dear Ms. Bidwell :

Enclosed is the corrected interview summary.

Also enclosed are copies of the only maps and drawings on file in this office.

There are no barrels buried at the site that we know of.

If we can be of any further help to you, please do contact us.

Sincerely,

Gloria Schovel

Gloria Schovel
Supervisor, Town of Saugerties

GS:cm

INTERVIEW ACKNOWLEDGEMENT FORM

p 2 of 6

Site Name: Town of Saugerties Landfill

I.D. Number: 356003

Person Contacted: Mrs. Schovel

Date: 23 April 1986

Title: Town Supervisor

Affiliation: Town of Saugerties

Phone No.: (914) 246-2809

Address: Town Hall
Main Street
Saugerties, New York 12477

Persons Making Contact:
EA Representatives:
Bidwell/Lapins

Type of Contact: In Person

Interview Summary:

The Town of Saugerties landfill began operation after Memorial Day weekend of 1970 or 1971, when the neighboring Town of Woodstock ceased to accept its garbage. Initially, the Town of Saugerties dug three trenches on property purchased from Mr. Charles Keeton. The approximately 40-acre parcel was previously used in a shale mining operation, but currently the land is used solely as a landfill. After the three original trenches were filled in, the Town employed the "cell method" of landfilling in the southern section of the property. Current Town employees estimate the waste material in the first cell to be 30-40 feet below ground surface. The second and third cells lie on top of the first. The Town plans to expand the landfill to the shale mining pit after completion of the third cell.

A few weeks after the landfill originally opened, two monitoring wells were installed at the site. Both State and County agencies dictated the location and construction of the wells, and they are still sampled on a regular basis. Because the Town of Saugerties is a rural area, there are few industries that dump in the landfill. Ferrox Cube, a local electronics manufacturer, has dumped various sludges over the years, but since 1979 has been permitted by the New York State Department of Environmental Conservation (NYSDEC) to do so. The sludge is high in iron, zinc oxide, and manganese oxide and is mixed right in with the residential garbage. At one time, leachate was observed emanating from the northern edge of "Cell 2." The Town responded by constructing a 3:1 clay bank over the leachate, and employees believe the problem has been solved. The original three trenches were filled in and seeded, but currently the Town uses the area to dump sludge from the Village treatment plant. Out of the entire 40 acres purchased from Mr. Keaton, the Town estimates only 15 have been landfilled. The entrance gate is locked at night and none of the current employees have seen nor heard of evidence of hazardous or illegal dumping at the landfill.

p 3 of 3

Acknowledgement:

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to EA Science and Technology interviewers, or as I have revised below, is an accurate account.

Revisions (please write in corrections to above transcript):

purchased from Clan Keefe
WAS NEVER PREVIOUSLY USED AS SHALE MINING OPERATION. (TOWN DOES NOT OWN mined area at entrance to landfill site.) SHALE USED AT LANDFILL IS MINED ON landfill area to REAR AND SIDE OF Building.

Signature: Gloria Schowe
Supervisor Town of Saugerties

Date: June 6, 1986

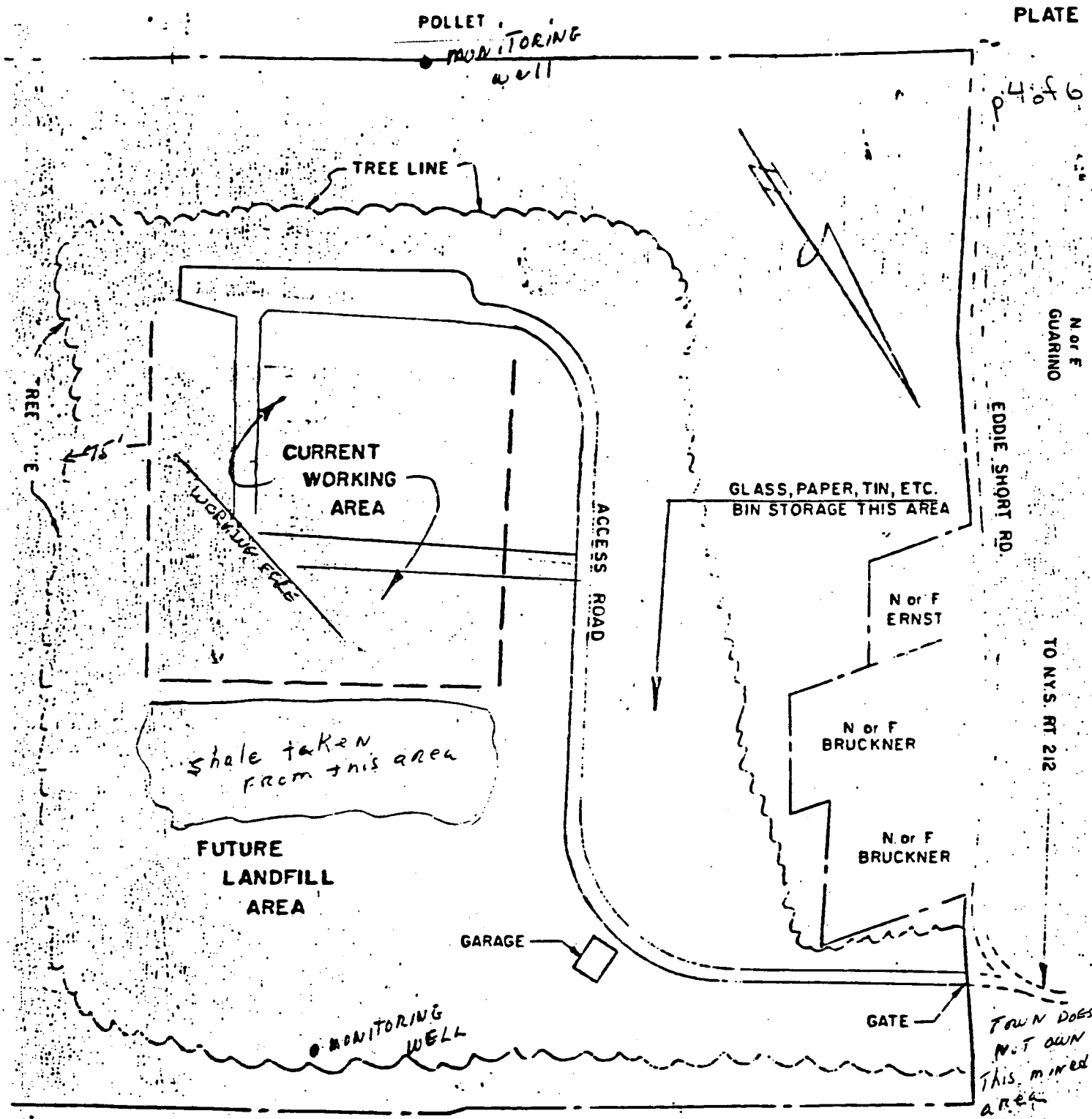
Dear Mrs Bidwell:

Also enclosed please find copies of landfill maps. They are the only ones I could find in the files.

I have noted position of the 2 monitoring wells. The area that the Town has mined for shale is the circled in red ink.

If I can be of further help, please let me know.

Sincerely,
Gloria Schowe



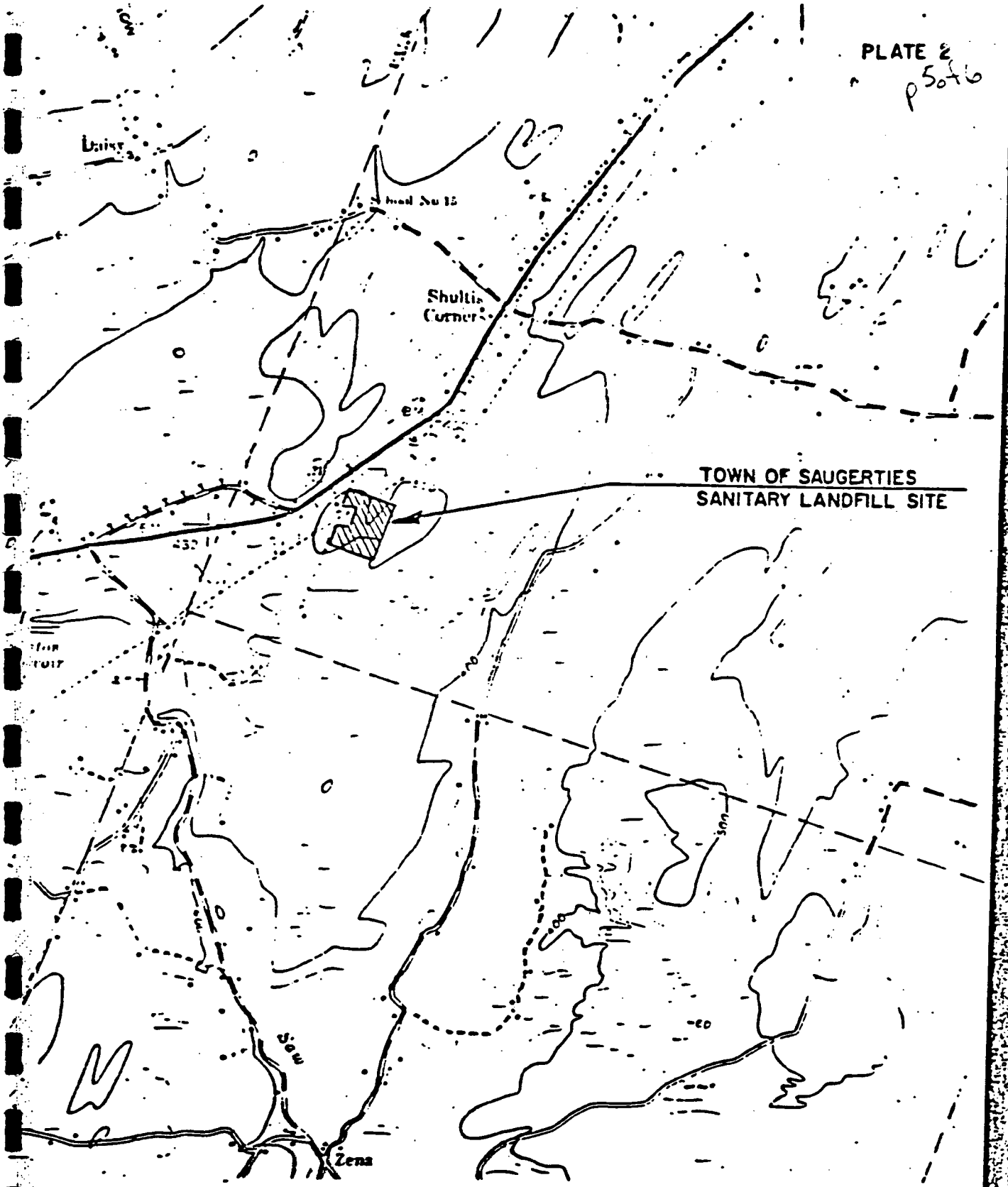
TOWN OF SAUGERTIES
SANITARY LANDFILL FACILITY SKETCH 2

BRENNER & ROSSI
CONSULTING ENGINEERS
TAPPAN, NEW YORK

APRIL, 1978

PLATE 2

p 5 of 6



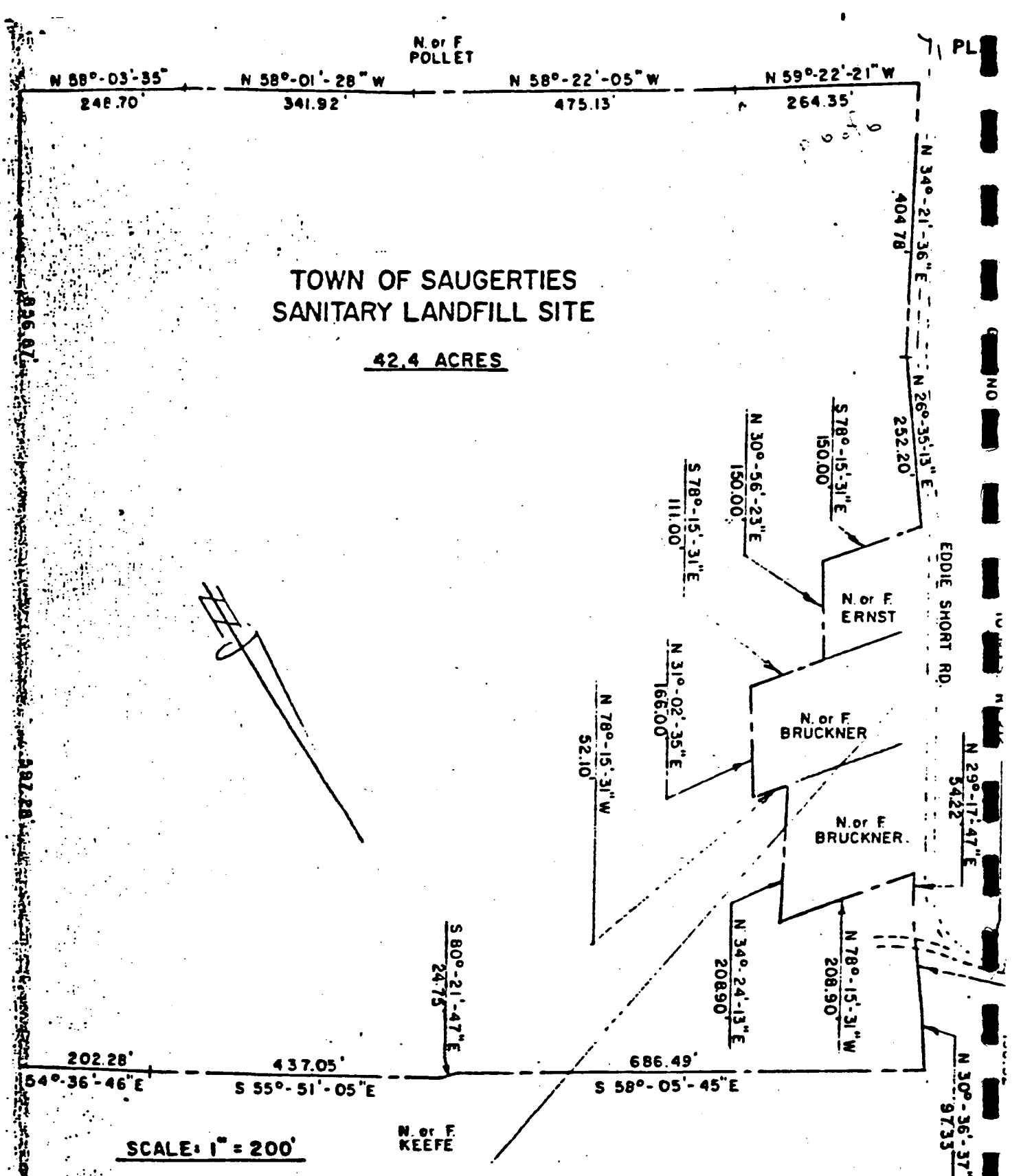
TOWN OF SAUGERTIES

SANITARY LANDFILL

SITE LOCATION

ATION:
°-02'-30"
°-04'-30"
P. WOODSTOCK, N.Y. QUADRANGLE

BRENNER & ROSSI
CONSULTING ENGINEERS
TAPPAN, NEW YORK



TOWN OF SAUGERTIES
SANITARY LANDFILL SITE

42.4 ACRES

NOTE:
BOUNDARY SURVEY TAKEN FROM SURVEY PREPARED BY THOMAS W. MAINES, LLS, DATED SEPTEMBER 25, 1969.

TOWN OF SAUGERTIES
SANITARY LANDFILL
SITE BOUNDARY

BRENNER & ROSSI
CONSULTING ENGINEERS
TAPPAN, NEW YORK

56519
D.2

N.Y. Dept. of Health
Bureau of Toxic Substances

Town of Saugerties
Ulster County
New York

SANITARY LANDFILL REPORT

Accompanying

Application for Approval to Construct and
Operate a Solid Waste Management Facility

April, 1978

Brenner & Rossi
Consulting Engineers
4 Independence Avenue
Tappan, New York 10983
(914) 359-2210

TABLE OF CONTENTS

Plates

I. Plan of Operation

A. In the early part of 1969, the Town of Saugerties purchased a 40 + acre parcel of land abutting New York State Route 212 and approximately one mile south of Glasco Turnpike, for the sole purpose of operating its own sanitary landfill. On June 3, 1969, the Town received approval to establish a refuse disposal area on said site from the Ulster County Department of Health. (San. Form 240, executed by Dr. V.B. Link, M.D.)

In September of that year a boundary survey of subject site was prepared by Thomas W. Maines, L.L.S., and an operational plan was prepared by Mr. Maines. Said plan showed the access road into the site, the garage, and areas designated for current and future landfill operations. The drawing also contained spot elevations and a benchmark system for vertical control. This drawing provided the operator with the method of fill progression at the site. A topographic survey of the site was never completed.

Data is not available to substantiate depth of past filled areas nor whether final elevations of the fill areas were achieved. An inspection of the site does indicate that previously filled areas do conform with surrounding contours and provide a gradually sloped and drainable area.

Currently, as has been the practice in the past, only refuse generated in the unincorporated part of the Town is deposited at the site. The Village of Saugerties has its own facility.

The quantity of refuse delivered to the site is unknown as this data is not collected by the operator. However, an estimate on quantity can be arrived at by use of standard per capita values. If this information is needed, it will be forthcoming in a subsequent report.

At the present time, the facility is operating under a "cell" method and layers of new refuse are being placed upon consolidated solid waste material. The current operational area is several acres with an available lift height of eight to ten feet.

To prepare for future expansion, the Town sells shale, mined from the site, to a private contractor. The contractor excavates the shale basically to bedrock depth. The excavated area then serves as the future landfill working site.

The life of the landfill depends upon the resolvement of whether the facility can be horizontally expanded into the new mined area.

B. The operator controls the height of each lift by making each new fill section the same general shape as the previous one. The filling starts at the working face, and as the fill progresses its height decreases. An access road leads directly to the working face. By starting the fill at the operating face, obviously good access is afforded to all vehicles. Further, the passing of the vehicles over the covered refuse aids in the compaction process. In addition, the operator constructs drainage ditches on the access road side of the working face. Sloping the surface of the fill away from the working face and toward the ditch directs surface water off the refuse area and does not allow this water to pond or infiltrate into this fill.

In order to maintain desired finished grades at the site, a final contour plan will be established, and the operator will set grade stakes along the working fill area in accordance with the final contour plans.

C. As mentioned previously, surface water is directed to the ditch area by sloping the top of the fill. The surface runoff follows the ditch line away from the landfill operation. There are no provisions at the present time for underground drainage structures in the vicinity of the fill area.

D. The sanitary landfill is fenced at either side of the entrance gate. A sign located at the entrance gate states who may use the facility and gives the schedule of operation. Internal signs delineate the recycle area, the refuse area, the non-putrescible area, and the area where trees and brush may be deposited. In the recycling area, individuals may separate their deposits into glass, aluminum, paper, etc.

The Town issues permits to individuals, businesses, and commercial carriers who wish to utilize the facility. Again, only refuse from the unincorporated area of Town is permitted. There is currently no charge to any Town resident, business, or commercial carrier for use of the landfill.

E. The facility is open Monday thru Friday from 8:30 A.M. to 4:30 P.M., on Saturday from 8:30 A.M. to 3:30 P.M., and is closed on Sundays and Holidays.

A heated building for the storage of the 1974 Caterpillar 977L Loader is located within reasonable proximity to the fill area and serves as a shelter for the operator during inclement weather and as a place to perform routine maintenance on equipment.

During the day, the operator polices the site, checks to insure that only authorized vehicles use the facility, and carries out the basic landfill operations such as spreading, compacting, and covering refuse. The Town has hired a second man to assist the operator. This person checks the vehicles and directs them to the proper disposal areas. At the end of each working day the operator makes such that the entire face of the fill is covered.

F. The operator takes no special precautions during inclement weather except to stockpile cover material in close proximity to the face of the fill. To ensure that satisfactory access is maintained during the winter period, the Town's Highway Department services the road network.

The Town is currently constructing a new road to the landfill site. Once completed, this road will provide better access to the site during the winter period.

CONTINGENCY PLAN

II. Contingency Plan

A. Equipment Breakdown

In the event of any equipment breakdown, the Town's Highway Department furnishes the landfill operator with a front-end loader for use until repairs are completed on the landfill equipment.

B. Air or Water Contamination Due to Operations

Open burning is not permitted at the site as a general rule. However, when a large quantity of brush and trees accumulate at the landfill, the operator obtains the necessary DEC permit to burn said debris. Further, all refuse is covered at the end of each day's operation. Accordingly, operations at the site do not result in any air or odor problems.

There have been no reported complaints of groundwater contamination at the site. However, some leachate production is evident at the site especially during wet periods. Said productions is minimal during dry summer months. Further, the landfill operator has significantly minimized leachate production by construction of a drainage ditch and use of less permeable soil cover material. If the regulatory agencies demonstrate that a problem does exist, the Town will construct an empoundment area so that the liquid can be tested. If a monitoring program is established, the operator will receive adequate training to ensure that the program is effective and that regulatory requirements are adhered to.

C. Fires

Since the operation of the facility commenced in 1969, there have been no serious fires at the landfill. An adequate water supply system exists to control any small fires.

D. Spills or Releases of Hazardous or Toxic Materials

Hazardous and toxic materials are not permitted at the landfill site. Further, there have been no recorded incidences of the presence of, or the spill or release of, these materials.

COMPLIANCE WITH SECTION 360.8

p 10 of 19

III. Compliance with Section 360.8

The following are point by point responses to Section 360.8 of the Rules and Regulations for Solid Waste Management Facilities.

A. General Requirements for All Solid Waste Management Facilities

(1) There are no surface waters crossing the 40 acre site. Solid wastes are presently being deposited on landfilled area. Horizontal expansion of the landfill is being prepared by removal of material from the adjoining area. Adequate cover on the landfill area prevents surface runoff from penetrating the landfill. Runoff from the adjoining excavation area is channeled to a ditch adjacent to the landfill area. Groundwater appears to be well below the excavation level. Therefore, solid waste is not deposited in, and is prevented from entering, surface waters or groundwaters.

(2) Solid waste is not being deposited on any agricultural lands designated Class 1 and/or Class 2 (N.Y.S. Inventory of Soil and Water Conservation Needs, 1967).

(3) In accordance with data on file at the Ulster County Department of Health, some leachate production was evident at the site especially during wet periods. Further, said production is minimal during dry summer months. A wet area downstream from the landfill site receives landfill drainage; however, said flow ceases during dry seasons. The landfill operator has significantly minimized leachate production by construction of a drainage ditch and use of less permeable soil cover material.

A serious leachate problem does not exist. However, if the regulatory agencies demonstrate that a problem does exist, the Town will construct an empoundment area so that this liquid can be tested and the proper method of treatment can be administered.

(4) The operator allows salvaging at the site only where metals are stockpiled. Salvaging is not permitted at any other location. The metal stockpile is totally divorced from the working face of the fill. What little salvaging exists is totally controlled by the operator and does not interfere with day to day landfill operations or with any person utilizing the facility.

(5) The gate at the entrance to the facility controls access to the site. Therefore, the facility cannot be used unless the attendant is present.

(6) A sign is posted at the access gate which stipulates the houfs of landfill operation. Internal signs control traffic into the site to the working face, and further designate specific areas for deposit of metals, brush, and recycled materials.

(7) The blowing of paper and other litter is not a problem at this site since the landfill area is surrounded by tall trees, and since adequate windrows exist in front of the face of the fill. Further, the operator polices the site as is required.

(8) Dust and odors do not appear to create a nuisance at the site. Further, there is no serious vector problem as the refuse is covered at the end of each working day. The operator has been instructed to institute a control program if a substantial build-up in the rodent population becomes evident.

(9) The present access road is unpaved, and some difficulty is experienced during winter months due to a steep incline at the entrance to the site. The Town is presently in the process of constructing a new access road which will greatly improve access to the facility. The internal road network is well maintained and provides good access to the operating face.

(10) The site is frequented by a limited number of collectors, businesses and individuals. To date, there has not been any serious accident at the site.

(11) The 40 acre site is well recessed from New York State Route 212. As a result of the site's remote location, and the fact that only a few pieces of equipment operate at the facility, there have been no complaints from residents near the area about excess noise.

(12) The heated garage at the site houses the landfill's tractor/loader and provides a shelter for operating personnel. The garage has adequate work and storage areas and has water, sewer and telephone facilities.

(13) The equipment used at the sanitary landfill is a 1974 Caterpillar 977L loader and a 1969 White dump truck. The tracked loader is well suited for a sanitary landfill operation in that it can spread, compact and cover refuse.

The operator is trained to perform routine maintenance and repairs on the equipment. In the event of a major breakdown, the operator uses a 1975 International 175 loader on loan

from the Town's Highway Department during the down period.

(14) As previously stated, the heated garage is adequate for providing shelter to both machine and operator, and has sufficient area for the operator to perform routine equipment maintenance.

(15) Open burning is not permitted at the sanitary landfill. When a large quantity of brush and trees accumulate at the site, the operator obtains a DEC permit to burn said debris. Adequate water facilities are available at the site to extinguish a fire.

(16) All refuse is deposited in one location on the site and is confined between windrows in front of the operating face. The placement of adequate signs and the scrutiny of the operator ensures that refuse is directed only to the face of the fill area.

(17) No hazardous wastes are deposited at the Town's sanitary landfill.

(18) Not Applicable.

(19) Not Applicable.

(20) Not Applicable.

(21) The Town's sanitary landfill is not located in a floodplain.

B. Requirements for Specific Solid Waste Management Facilities

(1) Sanitary Landfill

(i) At the present time new refuse is being deposited upon previously compacted beds. Accordingly, a minimum of five feet is being maintained between the solid waste and groundwater or bedrock. However, this working area is a few acres and will afford only a limited landfill life. A new area is presently being prepared by the Town. To accomplish this, the Town sells mined material to a private contractor. The contractor excavates the material basically to bedrock depth. The excavated area then serves as a future landfill site.

The depth from the top of the adjacent completed, final lift to the bottom of the current mined area varies from ten to fifteen feet. To

require a five feet vertical separation from bedrock will drastically reduce the life of the landfill. This would place undue, severe, economic hardships on the Town. Further, previous operation has gone to bedrock and there has been no reported adverse affects. Accordingly, a waiver of this specific requirement for future operations is requested.

(ii) The operation of this facility is in an excavated area, the method of operation is the "cell" type, and the operator uses extreme care to channel surface runoff from the working face. Accordingly, the operator has not had problems with surface runoff.

(iii) At the present time, there are no groundwater monitoring wells at the landfill. This is a continuing operation and there are no reports of groundwater contamination.

(iv) As stated, there are no monitoring wells located at the site. Accordingly, a monitoring program does not exist. (See Item 3.)

(v) Since this is an existing landfill, this requirement is not applicable.

(vi) There have been no reported problems pertaining to gases being generated at the existing landfill. Accordingly, no special precautions are being taken to control any gases that may be generated.

(vii) a) All refuse is deposited, spread and compacted in layers of less than two feet across the face of the fill.

b) Average lift height does not exceed ten feet.

c) A minimum of six inches of cover is placed over the face of the refuse area at the end of each day.

d) A compacted layer of at least 12 inches of cover material will be placed over all surfaces of the landfill where no additional refuse will be deposited within 30 days.

e) Final cover has been placed on that portion of the landfill adjacent to the existing garage. This area has been idle for several years and has a well established stand of grass.

(viii) As has been done in the past, all fill areas are graded to prevent ponding and erosion.

(ix) As soon as a final elevation is reached on any portion of the landfill, or if any lift is not to be covered by an additional lift within 90 days, a stand of grass, weather permitting, will be established.

(x) The Town will maintain for a period of five (5) years beyond the date that the final cover is completed, all soil cover integrity, slopes, cover vegetation, drainage structures, groundwater monitoring facilities, and gas venting structures, if applicable, pursuant to the permit issued by the New York State Department of Environmental Conservation.

(xi) As previously stated, hazardous materials are not deposited in the Town's sanitary landfill.

(xii) No portion of the existing landfill is within 50 feet of a property line. Current excavated areas are not within 50 feet of a property line. The landfill is presently surrounded by a treed area which provides an excellent natural buffer.

(xiii) Existing records indicate that spot elevations were taken, date unknown, with the establishment of a benchmark at the garage of elevation 500.00. This benchmark has served as vertical control at the facility.

(xiv) Not Applicable.

(xv) If additional requirements are established by DEC, the Town will comply with those requirements if it is economically feasible to do so.

(2) Secure Landburial Facility

Not Applicable.

(3) Industrial Waste Disposal Facilities

Not Applicable.

(4) Incinerators

Not Applicable.

CLOSURE PLAN

IV. Closure Plan

The Town is currently working on the adoption of a master plan and zoning ordinance. Accordingly, the zoning of land in the vicinity of the landfill property has yet to be determined. The landfill site has a useful life of some 10-15 years. In that span of time it would certainly be plausible to expect changes in any master plan which may be adopted at this time.

In any event, the Town has no definite plans for property development when its use as a sanitary landfill has been terminated.

The final plans, such as they are, will require a two (2) feet layer of cover material over the entire fill area, sloped to provide adequate drainage and seeded to produce a good stand of grass.

TOWN OF SAUGERTIES
SANITARY LANDFILL SITE

42.4 ACRES

SCALE: 1" = 200'

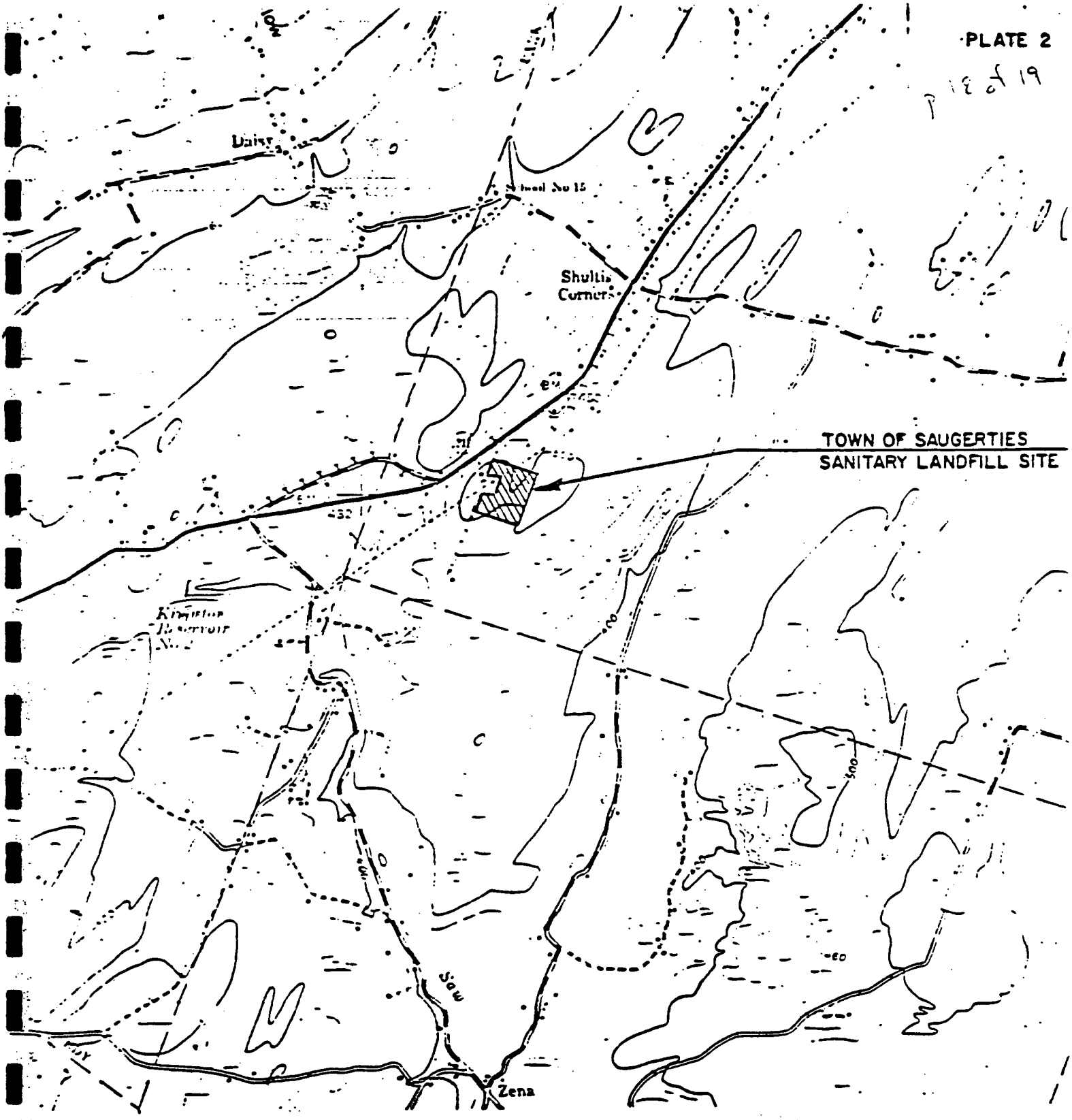
NOTE:
BOUNDARY SURVEY TAKEN FROM SURVEY PREPARED BY THOMAS W. MAINES, LLS, DATED SEPTEMBER 25, 1969.

TOWN OF SAUGERTIES
SANITARY LANDFILL SITE BOUNDARY

BRENNER & ROSSI
CONSULTING ENGINEERS
TAPPAN, NEW YORK

APRIL, 1978

PLATE 2

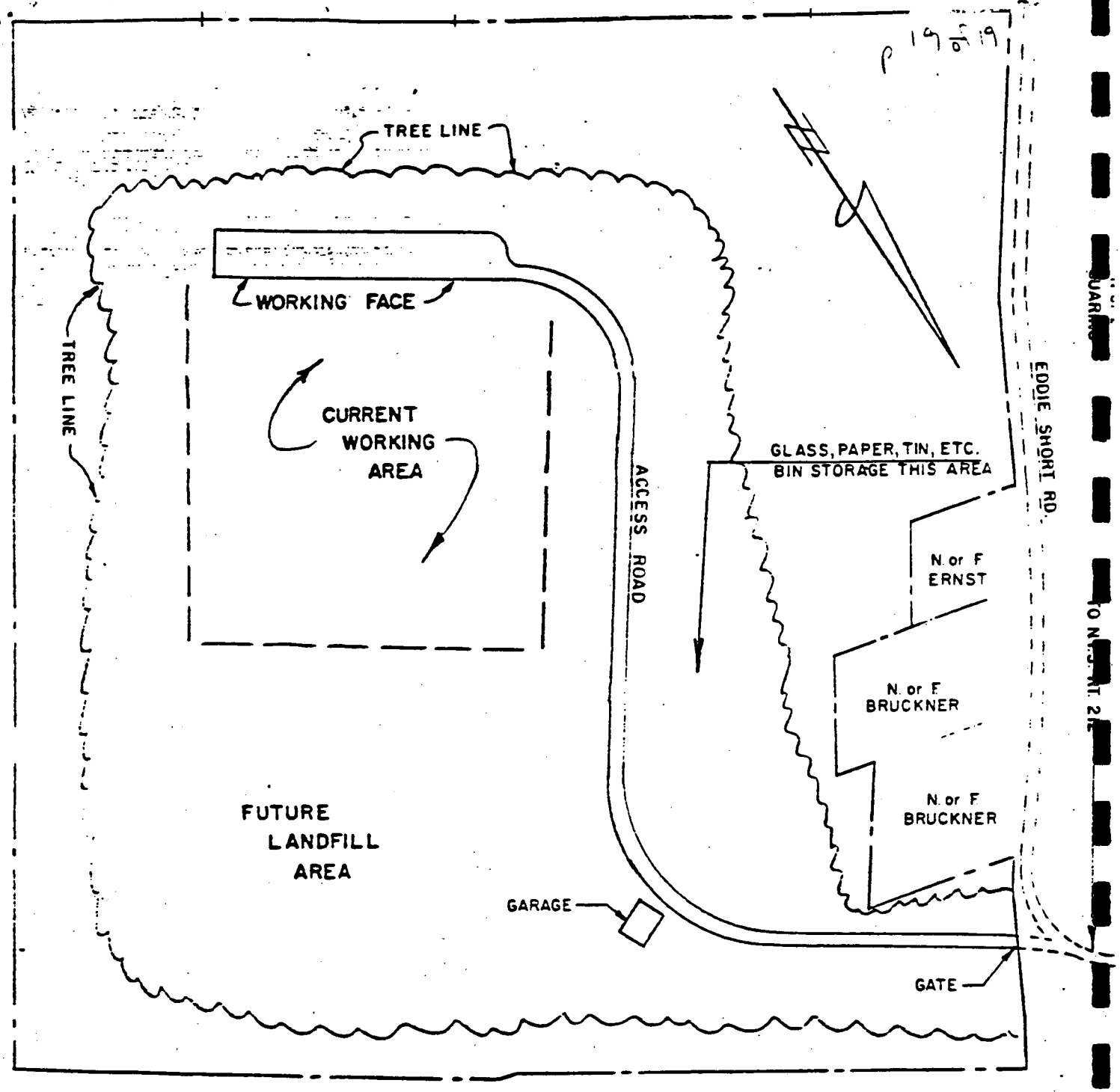


NOTE:
SITE LOCATION:
N 42°-02'-30"
W 74°-04'-30"
USGS MAP, WOODSTOCK, N.Y. QUADRANGLE

TOWN OF SAUGERTIES
SANITARY LANDFILL SITE LOCATION

BRENNER & ROSSI
CONSULTING ENGINEERS
TAPPAN, NEW YORK

APRIL, 1978



NOT TO SCALE

TOWN OF SAUGERTIES
SANITARY LANDFILL FACILITY SKETCH

BRENNER & ROSSI
CONSULTING ENGINEERS
TAPPAN, NEW YORK

APRIL, 1978

5&SP-1

D3

N.Y. Dept. of Health
Bureau of Toxic Substances

MAR 26 1982
ULSTER COUNTY
HEALTH DEPARTMENT

TOWN OF SAUGERTIES

LANDFILL REPORT

SUPERVISOR * GEORGE TURNER

OPERATOR * STANLEY DOMAN

ASST. OPERATOR * GILBERT HARTRUM

REQUEST FOR NEW PERMIT TO INSTALL TOWN REFUSE
ON EXISTING WORK AREA

TOWN POP. 17,995

VILLAGE POP. 3,882 (Village joining town in 1978)

AMOUNT OF PERMITS 5,517

INDUSTRIAL PLANTS USING LANDFILL

ROTRON

K.T.B.

F.L. RUSSELL

FERROXCUBE

1. Landfill in operation 13 years
Work area rectangular described on map.
Begining at South Easterly pipe in fence
North 675 feet then Westerly 725 feet then
Southerly 675 feet, then easterly to point
of begining 725 feet.

Creating 487,375 square feet approx. 14' deep
an average of approx. 14 to 15 inches a year. 44 TONS

2. A Fire pit is provided for burnming of brush,
with a workable Indian Tank at hand.

Permit approved by Forest Ranger Roger Blatter.

3. Recycling areas are provided with two 35'
trailers for paper and magazines.

Shipped to J.C. Paper Co. of Poughkeepsie, N.Y.
when filled.

4. Glass bins are owned by

Recyceling Entprise of Mass.

5. Steel and tin recycling.

Are compacted onLandfill site once every 4
months by;

Millens & Son , Kingston, New York

6. All areas are clearly marked by signs.

7. New road topping from entrance to work area of crushed shale has been completed.

8. At the request of E.P.A.

Two montering wells have been drilled.

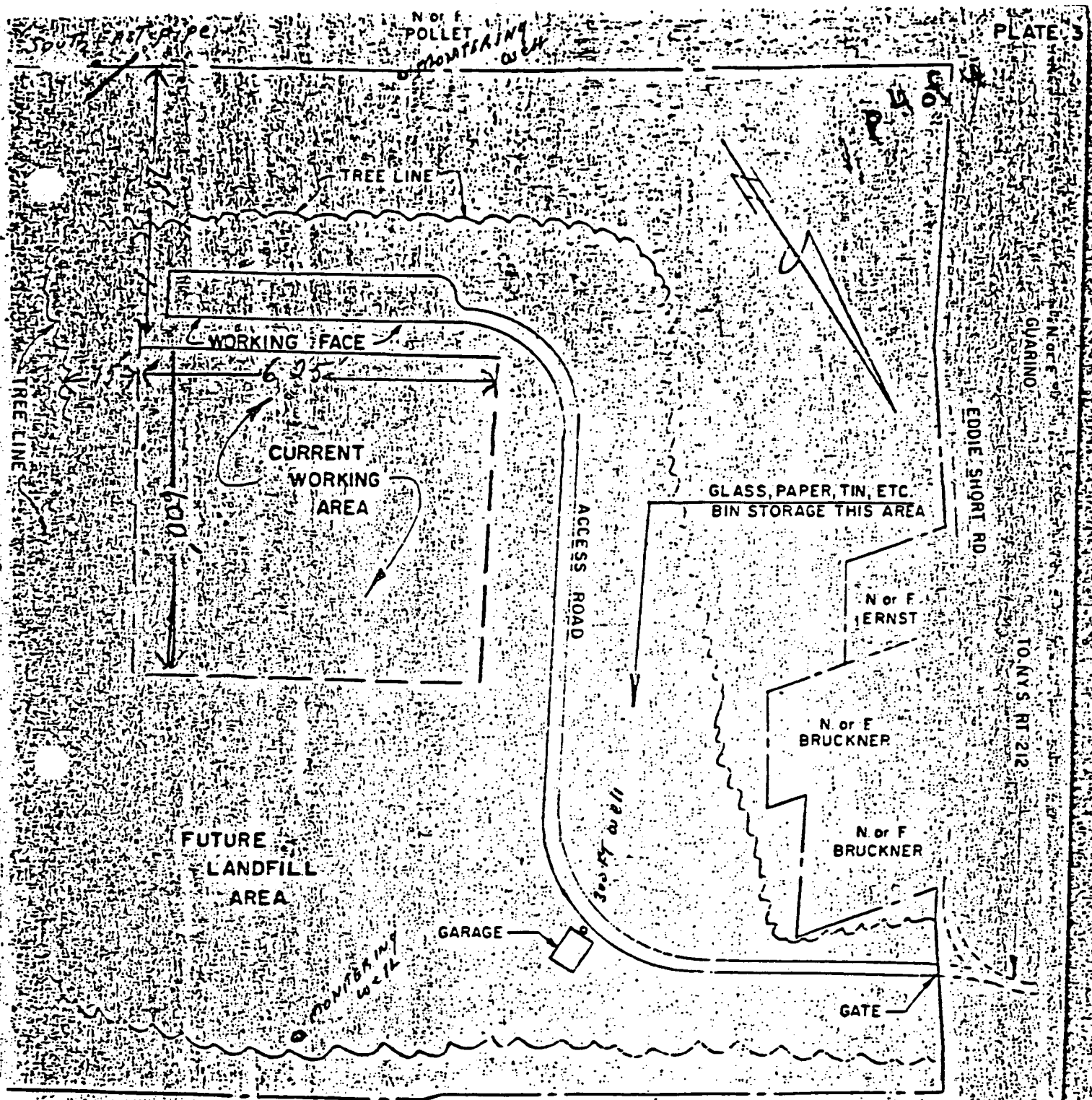
9. By order of the county health department.

3 in 1 slopes on Eastern and Southern side of work area with approx. 200 feet of dirt is to be completed this spring.

10. Equipment.

1980 955 Cat Loader with ripper and 4 in 1 bucket -- Replaces 1972 977 loader.

* 11 Remaining Capacity 5 yrs in AREA



TOWN OF SAUGERTIES
SANITARY LANDFILL
FACILITY SKETCH

BRENNER & ROSSI
CONSULTING ENGINEERS
TAPPAN, NEW YORK

APRIL, 1978

Received from
NYSDEC Region 3

D.4

BRENNER & ROSSI
CONSULTING ENGINEERS

4 INDEPENDENCE AVENUE
TAPPAN, NEW YORK 10983
(914) 359-2210

DONALD B. [illegible]
(914) 623-2041
ALFRED T. ROSSI, P.E.
(914) 623-2731

Appendix 1.1-4
p 1 of 2

Town of Saugerties
App # YSG519

RECEIVED
JUL
N.Y.S. D.E.C.
WHITE PLAINS OFFICE

May 29, 1978

Mr. Dean N. Palen, P.E.
County of Ulster
Department of Health
300 Flatbush Avenue
Kingston, New York 12401

Re: Solid Waste Management Facility, Saugerties, New York

Dear Mr. Palen:

We are in receipt of your letter dated May 16, 1978, requesting additional information regarding the Sanitary Landfill Report for the above captioned facility.

The responses herein below are in the same order as listed in your letter of May 16th.

Application for Approval to Operate

3a. As stated in the Sanitary Landfill Report dated April 1978, the operation of this facility is in an excavated area, and the method used is the "cell" type. At the present time, new refuse is being deposited upon previously compacted beds. The current operational area is several acres with an available lift height of eight to ten feet. The fill progression starts at the working face, and proceeds northerly into the working area as shown on Plate 3 in the Report. To prepare for future expansion, the Town is excavating an area northerly of the current working area, also as shown on Plate 3.

3b. As stated in part B of the Plan of Operation, the operator controls the height of each lift by making each new fill section the same general shape as the previous one. The fill starts at the working face, and as the fill progressed its height decreases. Further, sloping the fill away from the working face and toward the ditch directs surface water off the refuse area and does not allow this water to pond or infiltrate into this fill.

Re: Solid Waste Management Facility, Saugerties, New York

The current working area is in a previously excavated area. The final lift height has been the height of adjoining terrain. There are no plans to date to have lift heights in excess of adjoining contours. Accordingly, the operator's present method of control is the adjoining grade.

A benchmark system does exist at the site. An elevation of 500.00 (garage floor elevation) has served as vertical control at the facility.

3c. A well adjacent to the garage and approximately 500 feet from the current working area was driven 301 feet, and provides approximately 1 gpm. Discussions with the facility operator reveals that a vein was tapped during well construction at a depth of approximately 20 feet. Accordingly, there is evidence of groundwater at a depth of approximately 20 feet.

The excavation of the landfill area has not exceeded 20 feet. There is no evidence of groundwater within the bed of the landfill.

As previously stated the Town is currently preparing for future expansion by excavating an area northerly of the current working area. Operation at this location indicates approximately 1 foot of overburden before shale strada is reached. Excavation of the shale generally has not exceeded 20 feet. Therefore, the depth to bedrock can generally be stated as approximately 20 feet.

4c. The closest firehouse is located in Centerville, approximately 4 miles from subject facility.

7c. The 40+ acre site is relatively flat as shown on Plate 2 in the Report (USGS Map). Since the current working area is a previously excavated area, finish grades have, and to date, will continue to match adjoining existing grades.

7f. The prevailing wind is generally from the West.

A further point to note is that the facility operator has attended a D.E.C. sponsored course held in New Paltz on May 18th.

We trust that the above information is sufficient for your office and the Regional Office to consider the Town of Saugerties application as complete and ready for formal review.

Very truly yours,

Alfred T. Rossi, P.E.

ATR/err

cc: Supervisor Greco

47-20-2 (8/77)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Received ? @ NYSDEC Region

PERMIT

NYSDEC Reg 3

Under the Environmental Conservation Law, Article 27, Title 7, Part 360 D.5

FACILITY NO. 3540

EXPIRATION DATE March 14, 1

☐ CONSTRUCTION ☐ INITIAL ISSUE ☐ REISSU

☐ OPERATION ☐ RENEWAL ☐ MODIFICATION

Appendix 1.1-5

184

PERMIT ISSUED TO	ADDRESS OF PERMITTEE	TELEPHONE NO.
Town of Saugerties	Town Hall, Saugerties, NY	914-246-2800

LOCATION OF PROJECT Town	County	Environmental Conservation Regional Office
Saugerties	Ulster	202 Mamaroneck Ave., White Plains, NY 10601

DESCRIPTION OF PROJECT	ON-SITE SUPERVISOR
Operation of a Sanitary Landfill	Mr. Stanley Doran 246-9866

GENERAL CONDITIONS

1. The permittee shall file in the office of the Environmental Conservation Region specified above, a notice on intention to commence work at least 48 hours in advance of the time of commencement and shall also notify said office promptly in writing of the completion of the work.
2. The permitted work shall be subject to inspection by an authorized representative of the Department of Environmental Conservation who may order the work suspended if the public interest so requires.
3. As a condition of the issuance of this permit, the applicant has accepted expressly, by the execution of the application, the full legal responsibility for all damages, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and has agreed to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from the said project.
4. All work carried out under this permit shall conform to the approved plans and specifications. Any amendments must be approved by the Department of Environmental Conservation prior to their implementation.
5. The permittee is responsible for obtaining any other permits, approvals, easements and rights-of-way which may be required for this project.
6. By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with Part 360 and the special conditions. Any variances granted by the Department of Environmental Conservation to Part 360 must be in writing and attached hereto.

SPECIAL CONDITIONS

1) The following wastes shall not be accepted at this site: hazardous, industrial, sewage, sewage treatment plant sludge and sludge from the Ferroxcube plant.

2) Prior to the disposal of any refuse in a newly mined area, the Permittee shall exhibit its compliance with Section 360.5(b)(1)(i). This shall be accomplished by the excavation of test pits witnessed by a representative of the Ulster County Health Department and/or the Department. The depth and number of test pits shall be determined at the time of excavation.

3) "Daily Cover" shall be placed on the working face and "Intermediate Cover" shall be placed on the top of the lift.

4) The following remedial work shall be completed by November 1, 1979:
   a) The southern perimeter slope shall be: flattened to a maximum of 1 on 3 (vert. to hor.) and final cover placed and seeded.
   b) The ditch to the east of the refuse disposal area shall be lined with 1 foot of clay.

5) One down-gradient and one up-gradient monitoring well shall be in place by November 1, 1979. They shall be in compliance with Section 3.3 of the "Content Guidelines."

6) Routine water sampling of the down-gradient will be required consistent with Section 3.3(c) of the "Content Guidelines."

7) During the life of the site, an annual report shall be submitted to the Ulster Co. Dept. of Health and the Department at the Region 3 office, including as a minimum: the volume of waste processed, the remaining capacity and information to demonstrate the compliance with submitted plans and specifications.

8) If this facility is terminated during the life of the permit, the following closure plan shall be followed: a) two (2) feet of suitable material, the top six inches of which shall be capable of sustaining a ground or cover crop, is to be placed over the entire refuse disposal area; (b) area is to be sloped to provide adequate drainage; and (c) grass or ground cover crop shall be established pursuant to Section 360.7(b)(1)(iv).

ISSUE DATE	ISSUING OFFICER	SIGNATURE
March 1, 1979	John F. Harrison, P.E.	X

REGIONAL OFFICE D-33

NOTICE OF PERMIT

for:

☐ CONSTRUCTION	☒ INITIAL ISSUE	☐ REISSUANCE
☒ OPERATION	☐ RENEWAL	☐ MODIFICATION

has been issued to: TOWN OF SAUGERTIES

address: TOWN HALL, MAIN STREET, SAUGERTIES, N.Y.

for a project described as: OPERATION OF A SANITARY LANDFILL

under the Environmental Conservation Law,
Article 27, Title 5, Part 360 (Solid Waste Management Facilities)

D-34

NOTE:
- This Notice of Permit must be posted on the project site in such a manner that it is protected from weather and is in a location readily visible to the public.
- A copy of the Permit with the general and special conditions noted thereon will be shown to anyone upon request.

JOHN E. HARRISON, P.E.
Issuing Officer Regional Solid Waste Engineer

202 MAMARONECK AVENUE
Address WHITE PLAINS, N.Y. 10601

New York State
Department of Environmental Conservation

0549 MARCH 14, 1979 MARCH 14, 1982
Permit No. Issue Date Expiration Date

47-12-2 (6/77)

p 405.4

New York State Department of Environmental Conservation
202 Mamaroneck Avenue, White Plains, N.Y. 10601
(914) 761-6660

Robert F. Flack
Commissioner

Date MARCH 14, 1979

Project Number Y56519

Project Name SAUGERTIES (T)
ULSTER COUNTY

David Mafrici, P.E., Director
Bureau of Management Programs
Division of Solid Waste Management
N.Y.S. Dept. of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Attention: D. O'Toole

Re: Application for:

- [x] Sanitary Landfill
- [ ] Construction and Demolition
- [ ] Incinerator
- [ ] Resource Recovery (Materials)
- [ ] Processing (Shredding, Baling
- [ ] Transfer Stations

Dear Mr. Mafrici:

Enclosed please find the following material pertaining to Application(s) for Approval to Construct and/or Operate a Solid Waste Management Facility in Region 3:

- [ ] Construction Application - Project No. X _____ Assigned
- [ ] Operation Application - Project No. Y _____ Assigned
- [ ] Application Processing Check List
- [ ] Application Project Review Dates
- [ ] Notice of Incomplete Application
- [ ] Notice of Complete Application (Completeness)
- [ ] Plans and/or Engineering Report
- [ ] Supplemental Material Transmittal Memo to U.C.O.H.
- [x] Permit Issued No. 0549

If you have any questions, please do not hesitate to contact:

- [x] Mr. John E. Harrison
- [ ] Mr. Salvatore Ervolina
- [x] Mr. Richard Gardineer

Very truly yours,

John E. Harrison

John E. Harrison, P.E.
Regional Solid Waste Engineer

JEH:RG:bz
cc:

(47-15-11 (10/83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

PRIORITY CODE: _____ SITE CODE: 356003

NAME OF SITE: Town of Saugerties Landfill REGION: 3

STREET ADDRESS: Route 212

TOWN/CITY: Saugerties COUNTY: Ulster

NAME OF CURRENT OWNER OF SITE: Town of Saugerties

ADDRESS OF CURRENT OWNER OF SITE: Town Hall, Main Street Saugerties, NY 12477

TYPE OF SITE: OPEN DUMP ☐ STRUCTURE ☐ LAGOON ☐
LANDFILL ☒ TREATMENT POND ☐

ESTIMATED SIZE: 15 ACRES

SITE DESCRIPTION:

The 15-acre active municipal landfill is part of a 44-acre property owned by the Town of Saugerties. The landfill, active from 1969, was issued a NYS permit in March 1979 under which it was not allowed to accept hazardous industrial wastes or septic sludges.

For a number of years, the site reportedly received approximately 750 tons of grinding swarf (components unknown), 350 tons of grinding swarf (95+ percent iron oxide with oil and water), and 55 yd^3 of wastewater treatment sludge (high in iron, zinc oxide, and manganese oxide) per year from Ferroxcube.

HAZARDOUS WASTE DISPOSED: CONFIRMED ☐ SUSPECTED ☐

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
Unknown	

PAGE

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

_____, 19___ TO _____, 19___

OWNER(S) DURING PERIOD OF USE: Town of Saugerties

SITE OPERATOR DURING PERIOD OF USE: Town of Saugerties

ADDRESS OF SITE OPERATOR: Route 212, Saugerties, NY 12477

ANALYTICAL DATA AVAILABLE: AIR ☐ SURFACE WATER ☐ GROUNDWATER ☒
SOIL ☐ SEDIMENT ☐ NONE ☐

CONTRAVENTION OF STANDARDS: GROUNDWATER ☐ DRINKING WATER ☐
SURFACE WATER ☐ AIR ☐

SOIL TYPE: _____

DEPTH TO GROUNDWATER TABLE: approximately 20 ft

LEGAL ACTION: TYPE: _____ STATE ☐ FEDERAL ☐

STATUS: IN PROGRESS ☐ COMPLETED ☐

REMEDIAL ACTION: PROPOSED ☐ UNDER DESIGN ☐
IN PROGRESS ☐ COMPLETED ☐

NATURE OF ACTION: _____

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Ground-water contamination: elevated levels of manganese, zinc, and iron in a downgradient monitoring well.

ASSESSMENT OF HEALTH PROBLEMS:

None known or reported.

PERSON(S) COMPLETING THIS FORM:

FOR NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NAME EA Science and Technology
TITLE _____
NAME _____
TITLE _____
DATE: 29 October 1986

NEW YORK STATE DEPARTMENT OF HEALTH

NAME _____
TITLE _____
NAME _____
TITLE _____
DATE: _____

D.7

15-11(2/80)

HAZARDOUS WASTE DISPOSAL SITES REPORT
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Appendix 1.1-6

Code: E

Site Code: 356003

Name of Site: Saugerties Landfill (T) Region: 3

County: Ulster Town/City Saugerties

Street Address: (S) Shultis Corners

Received from NYSDEC Region 3

Status of Site Narrative:

The site is a NYS permitted municipal landfill not allowed to accept hazardous industrial wastes or septic sludges. The permit was issued in March 1979. The site has a monitoring well on site now. There are no homes or wells within a mile of the site. The operation is now fenced. The site allegedly received 750 tons of grinding sludge, 350 tons of grinding swarf (95+% Iron oxide with oil & water) and 55 cubic yard of waste water treatment sludge per year for several years from the Ferroxcube plant. The sludge was high in iron, zinc oxide and manganese oxide. These are the only industrial wastes which this facility accepted prior to its permit issuance.

Type of Site: Open Dump ☐ Treatment Pond(s) ☐ Number of Ponds_____
Landfill ☑ Lagoon(s) ☐ Number of Lagoons_____
Structure ☐

Estimated Size 3 Acres

Hazardous Wastes Disposed? Confirmed ☐ Suspected ☐ Unknown

*Type and Quantity of Hazardous Wastes:

TYPE	QUANTITY (Pounds, drums, tons, gallons)

*Use additional sheets if more space is needed.

HAZARDOUS WASTE DISPOSAL SITES REPORT
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION D.8

Received from NYSDEC Region 3 Appendix 1.1-2

Priority Code: E
Site Code: 356003
Name of Site: (T) SAUGERTIES L.F. Region: 3
County: ULSTER Town/~~City~~ SAUGERTIES
Street Address: SHULTIS CORNERS

Status of Site Narrative:

NYSDEC PERMITTED LANDFILL, ISSUED MARCH 1979. NOT PERMITTED TO ACCEPT HAZARDOUS, INDUSTRIAL, OR SEPTIC WASTE. NO HOMES OR POTABLE WELLS WITHIN A MILE. SITE ALLEGEDLY RECEIVED 750 TONS OF GRINDING SLUDGE, 350 TON. OF GRINDING SWARF (95+% IRON OXIDE, OIL, WATER) AND 55 CUB YARDS OF WASTEWATER TREATMENT SLUDGE PER YEAR FOR SEVERA YEARS FROM FERROXCUBE. THIS WAS THE ONLY INDUSTRIAL WAS ACCEPTED PRIOR TO ISSUANCE OF ITS 360 PERMIT.

Type of Site: Open Dump ☐ Landfill ☒ Structure ☐ Treatment Pond(s) ☐ Lagoon(s) ☐ Number of Ponds_____ Number of Lagoons_____

Estimated Size 3 Acres

Hazardous Wastes Disposed? Confirmed ☐ Suspected ☐ UNKNOWN ?

*Type and Quantity of Hazardous Wastes:

TYPE	QUANTITY (Pounds, drums, tons, gallons)
UNKNOWN	

*Use additional sheets if more space is needed.

Name of Current Owner of Site: TOWN OF SAUGERTIES
Address of Current Owner of Site: _____

Time Period Site Was Used for Hazardous Waste Disposal:
_____, 19 ___ To _____, 19 ___

Is site Active ☒ Inactive ☐
(Site is inactive if hazardous wastes were disposed of at this site and site was closed prior to August 25, 1979)

Types of Samples: Air ☐ Groundwater ☒ None ☐
Surface Water ☐ Soil ☐

Remedial Action: Proposed ☐ Under Design ☐
In Progress ☐ Completed ☐
Nature of Action: MONITORING WELLS INSTALLED

Status of Legal Action: NONE State ☐ Federal ☐

Permits Issued: Federal ☐ Local Government ☐ SPDES ☐
PART 360 Solid Waste ☒ Mined Land ☐ Wetlands ☐ Other ☐

Assessment of Environmental Problems:
NO KNOWN SIGNIFICANT QUANTITIES OF HAZARDOUS WASTE DISPOSED OF AT THIS SITE. SAMPLING WILL BE PERFORMED

Assessment of Health Problems: NONE KNOWN

Persons Completing this Form:

JACK DOTY
G. D. KNOWLES

New York State Department of Environmental Conservation
Date 3/25/80

RON TRAMONTANO

New York State Department of Health
Date 3/25/80

1/18/80
GDK:cl

D.9 APPENDIX 1.1-8

NYDEC Bureau of Hazardous Site Control

NYDEC Bureau of Hazardous Site Control

Company Code

II. Waste Characterization and Management Practice
(Use separate form for each waste stream)

1. Waste Stream No. 11 (from Form I, Number 17)

2. Description of process producing waste WASTE WATER TREATMENT

3. Brief characterization of waste SLUDGE CONTAINING Fe_2O_3, ZnO $MnCO_3$ WATER

4. Time period for which data are representative _____ to _____

5. a. Annual waste production 5.5 YD^3 ☐/tons/yr. ☐/gal./yr.

b. Daily waste production _____ ☐/tons/day ☐/gal./day

c. Frequency of waste production: ☐/seasonal ☐/occasional ☒/continual
☐/other (specify) _____

6. Waste Composition

a. Average percent solids ____ % b. pH range __ to __

c. Physical state: ☐/liquid, ☐/slurry, ☒/sludge, ☐/solid,
☐/other (specify) _____

d. Component	Average Concentration	☐/wet weight ☒/dry weight	
1. Fe_2O_3		☐/wt.%	☐/ppm
2. ZnO		☐/wt.%	☐/ppm
3. MnO_3		☐/wt.%	☐/ppm
4. DIATOMACEOUS EARTH		☐/wt.%	☐/ppm
5.		☐/wt.%	☐/ppm
6.		☐/wt.%	☐/ppm
7.		☐/wt.%	☐/ppm
8.		☐/wt.%	☐/ppm
9.		☐/wt.%	☐/ppm
10.		☐/wt.%	☐/ppm

(76)

Company Code

e. Analysis of composition is ☐ theoretical ☐ laboratory ☐ estimate
(attach copy of laboratory analysis if available)

f. Projected ☐ increase, ☐ decrease in volume from base year: 0 % by July 1977;
0 % by July 1983.

g. Hazardous properties of waste: ☐ flammable ☐ toxic ☐ reactive ☐ explosive
☐ corrosive ☐ other (specify) UNKNOWN

7. On Site Storage

a. Method: ☐ drum, ☒ roll-off container, ☐ tank, ☐ lagoon, ☐ other (specify) _____

b. Typical length of time waste stored 1 ☐ days, ☒ weeks, ☐ months

c. Typical volume of waste stored 1.25 ☐ tons, ☐ gallons YD^3

d. Is storage site diked? ☐ Yes ☒ No

e. Surface drainage collection ☐ Yes ☒ No

8. Transportation

a. Waste hauled off site by ☐ you ☒ others

b. Name of waste hauler KEN DACHENHAUSEN

Address Box 21 (Street) RUBY (City)
NY (State) 12475 (Zip Code) (914) 246-5201 (Phone)

9. Treatment and Disposal

a. Treatment or disposal: ☐ on site ☒ off site

b. Waste is ☐ reclaimed ☐ treated ☒ land disposed ☐ incinerated
☐ other (specify) _____

c. Off site facility receiving waste

Name of Facility SAUGERTIES LANDFILL

Facility Operator _____

Facility Location _____
Street City
State Zip Code ( ) Phone

47-15-4(12/76)

Company Code ☐☐☐☐☐☐☐☐☐☐

II. Waste Characterization and Management Practice
(Use separate form for each waste stream)

L.F. PLANT

1. Waste Stream No. 12 (from Form I, Number 17)

2. Description of process producing waste GRINDING SCARF

3. Brief characterization of waste IRON OXIDE, H_2O, OIL

4. Time period for which data are representative 1976 to _____

5. a. Annual waste production 348 ☒ tons/yr. ☐ gal./yr.

b. Daily waste production _____ ☐ tons/day ☐ gal./day

c. Frequency of waste production: ☐ seasonal ☐ occasional ☒ continual
☐ other (specify) _____

6. Waste Composition

a. Average percent solids 95-100 % b. pH range __ to __

c. Physical state: ☐ liquid, ☐ slurry, ☐ sludge, ☒ solid,
☐ other (specify) _____

d. Component	Average Concentration	☐ wet weight ☐ dry weight
1. IRON OXIDE	95-100	☒ wt.% ☐ ppm
2. H_2O	>0-5	☒ wt.% ☐ ppm
3. OIL		☐ wt.% ☐ ppm
4.		☐ wt.% ☐ ppm
5.		☐ wt.% ☐ ppm
6.		☐ wt.% ☐ ppm
7.		☐ wt.% ☐ ppm
8.		☐ wt.% ☐ ppm
9.		☐ wt.% ☐ ppm
10.		☐ wt.% ☐ ppm

[illegible]76)

Company Code

e. Analysis of composition is ☐ theoretical ☐ laboratory ☐ estimate
(attach copy of laboratory analysis if available)

f. Projected ☐ increase, ☐ decrease in volume from base year: ____ % by July 1977;
____ % by July 1983.

g. Hazardous properties of waste: ☐ flammable ☐ toxic ☐ reactive ☐ explosive
☐ corrosive ☐ other (specify) UNKNOWN

7. On Site Storage

a. Method: ☒ drum, ☐ roll-off container, ☐ tank, ☐ lagoon, ☐ other (specify) ____

b. Typical length of time waste stored 1 ☐ days, ☒ weeks, ☐ months

c. Typical volume of waste stored 86 ☒ tons, ☐ gallons

d. Is storage site diked? ☐ Yes ☒ No

e. Surface drainage collection ☐ Yes ☒ No

8. Transportation

a. Waste hauled off site by ☐ you ☒ others

b. Name of waste hauler KEN DAUGHENBAUGH

Address ____
Street City
State Zip Code ( ) Phone

9. Treatment and Disposal

a. Treatment or disposal: ☐ on site ☒ off site

b. Waste is ☐ reclaimed ☐ treated ☒ land disposed ☐ incinerated
☐ other (specify) ____

c. Off site facility receiving waste

Name of Facility SAVAGE ICE LANDFILL

Facility Operator ____

Facility Location ____
Street City
State Zip Code ( ) Phone

47-35-4(12/76)

P 5 of 17

Company Code ☐☐☐☐☐☐☐☐☐

II. Waste Characterization and Management Practice
(Use separate form for each waste stream)

P.M PLANT

1. Waste Stream No. 13 (from Form I, Number 17)

2. Description of process producing waste GRINDING

3. Brief characterization of waste GRINDING SLUDGE

4. Time period for which data are representative 1976 to _____

5. a. Annual waste production 750 ☒ tons/yr. ☐ gal./yr.

b. Daily waste production _____ ☐ tons/day ☐ gal./day

c. Frequency of waste production: ☐ seasonal ☐ occasional ☐ continual

☐ other (specify) _____

6. Waste Composition

a. Average percent solids ____% b. pH range __ to __

c. Physical state: ☐ liquid, ☐ slurry, ☐ sludge, ☒ solid,

☐ other (specify) _____

d. Component	Average Concentration	☐ wet weight ☐ dry weight
1. UNKNOWN		☐ wt.% ☐ ppm
2.		☐ wt.% ☐ ppm
3.		☐ wt.% ☐ ppm
4.		☐ wt.% ☐ ppm
5.		☐ wt.% ☐ ppm
6.		☐ wt.% ☐ ppm
7.		☐ wt.% ☐ ppm
8.		☐ wt.% ☐ ppm
9.		☐ wt.% ☐ ppm
10.		☐ wt.% ☐ ppm

Company Code [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

e. Analysis of composition is ☐ theoretical ☐ laboratory ☐ estimate
(attach copy of laboratory analysis if available)

f. Projected ☐ increase, ☐ decrease in volume from base year: ____ % by July 1977;
____ % by July 1983.

g. Hazardous properties of waste: ☐ flammable ☐ toxic ☐ reactive ☐ explosive
☐ corrosive ☐ other (specify) _____

7. On Site Storage

a. Method: ☒ drum, ☐ roll-off container, ☐ tank, ☐ lagoon, ☐ other (specify) _____

b. Typical length of time waste stored 1 ☐ days, ☒ weeks, ☐ months

c. Typical volume of waste stored _____ ☐ tons, ☐ gallons

d. Is storage site diked? ☐ Yes ☒ No

e. Surface drainage collection: ☐ Yes ☒ No

8. Transportation

a. Waste hauled off site by ☐ you ☒ others

b. Name of waste hauler KEN DACHENHAUSEN

Address _____
Street City
( )
State Zip Code Phone

9. Treatment and Disposal

a. Treatment or disposal: ☐ on site ☒ off site

b. Waste is ☐ reclaimed ☐ treated ☒ land disposed ☐ incinerated
☐ other (specify) _____

c. Off site facility receiving waste

Name of Facility SAUGERTIES LANDFILL

Facility Operator _____

Facility Location _____
Street City
( )
State Zip Code Phone

47-15-4(12/76)

p 7 of 17

KEN DACHENHAUSEN
~~[illegible]~~ BOX 21
RUBY, NY 12475
TEL 914-246-5201　　DEC 11
WASTE DISPOSAL　　ULSTER COUNTY
12 MONTH PERIOD / SLURRY, DRY FILTER CAKE, GRINDING SLURRY,

FERRITE WASTE	HOPPERS (3/4 YD)	LF-RH BARRELS	DM BARRELS
1	4	28	— ~70
2	3	12	— 30
3	7	33	—
4	5	30	—
5	5	30	—
6	4	14	—
7	4	18	—
8	7	21	120
9	6	71	530
10	6	16	130
11	8	117	320
12	7	67	130
13	6	121	154
14	2	118	169
	79	696	1,553
	55.5 YD³		694
			2,249 BBLS

5430 gal
22 yd³
1120 yd³

D-47

p 8 of 17

[?]ROXCUBE CORPORATION

P.O. BOX 359, SAUGERTIES, N. Y.
Area Code 914 246-2811

5358

[?]TE: 1 21 76

SAME

SOLD TO: MARISOL INC.
125 FACTORY LANE
MIDDLESEX, N.J. 08846

SHIP TO:

SHIP VIA	PREPAID	PPD & CHGE	COLLECT	DATE SHIPPED	OUR ORDER NO.	ACCOUNT NO.
					69212	0174 00 5810

QUAN. ORDERED	PROD. CODE	PART NO. & DESCRIPTION	QUAN. SHIPPED	PRICE	AMOUNT
2 DRUMS		SOLDER FLUX (CORROSIVE)			
2 DRUMS		INHIBISOL, DETAR			
9 DRUMS		CRANE OIL, DETAR, ETHYL ACETATE, INHIBISOL			
3 DRUMS		CRANE OIL, DETAR, ETHYL ACETATE, ACETONE			
1 DRUM		ACETONE, INHIBISOL, ETHYL ACETATE			
		TO BE PICKED UP BY VENDOR			
		WASTE CHEMICALS - ALL FOR DISPOSAL			
		($10 CHARGE PER DRUM)			

DISPOSITION ☐ ISSUE CREDIT & REBILL ☐ ISSUE CREDIT ONLY ☐ FXC PROPERTY TO BE RETURNED

PURCHASING

FORM F5000-00011-000

54 gals D13.5

1 dr Chlorothene NU 0.25 gal 16/2

50 gals $37.

Account no. 0-174-5810

To be picked up by vendor

DEBIT MEMO

No. 53584

APD [X]
AS [ ]
RM [ ]

FERROXCUBE CORPORATION

P.O. BOX 359, SAUGERTIES, N. Y.
Area Code 914 246-2811

INVOICE DATE • 1 21 76

SOLD TO • HARTSOL INC.
• 125 FACTORY LANE
• MIDDLESEX, N. J.

SHIP TO • SAME

SHIP VIA	PREPAID	PPD & CHGE	COLLECT	DATE SHIPPED	OUR ORDER NO.	ACCOUNT NO.
						0 174 00 5610

QUAN. ORDERED	PROD. CODE	PART NO. & DESCRIPTION	QUAN SHIPPED	PRICE	AMOUNT
1 DRUM		FREON TDA 5 50 GALS		.507 GAL.	25.00
1 DRUM		CHLOROTHENE NU 50 GALS.		.25/GAL.	12.25
					$37.25
		TO BE PICKED UP BY VENDOR			

P 10 & 17

APD [X]
AS [ ]
RM [ ]

FERROXCUBE CORPORATION

No. 53679

P.O. BOX 359, SAUGERTIES, N. Y.
Area Code 914 246-2811

INVOICE DATE 4 9 76

SOLD TO
MARISOL INC.
125 FACTORY LANE
MIDDLESEX, N.J. 08846

SHIP TO
SAME

UP VIA	PREPAID	PPD & CHGE	COLLECT	DATE SHIPPED	OUR ORDER NO.	ACCOUNT NO.
					69218	0 174 00 5810

QUAN. ORDERED	PROD. CODE	PART NO. & DESCRIPTION	QUAN. SHIPPED	PRICE	AMOUNT
9 DRUMS		CHLOROTHENE NU, ETHYL ACETATE CRANE OIL, DITAR			
1 DRUM		SOLDER FLUX (CORROSIVE)			
		TO BE PICKED UP BY VENDOR			
		WASTE CHEMICALS - ALL FOR DISPOSAL			
		($10.00 CHARGE PER DRUM)			

ION [ ] ISSUE CREDIT & REBILL [ ] ISSUE CREDIT ONLY [ ] FXC PROPERTY TO BE RETURNED

PURCHASING

D-50

p 11 & 17

No. 53680

APD [X]
AS [ ]
RM [ ]

FERROXCUBE CORPORATION

P.O. BOX 359, SAUGERTIES, N. Y.
Area Code 914 246-2811

INVOICE DATE • 4 9 76

SOLD TO • KARISOL INC.
• 125 FACTORY LANE
• MIDDLESEX. N.J. 08846

SHIP TO • Same

SHIP VIA	PREPAID	PPD & CHGE	COLLECT	DATE SHIPPED	OUR ORDER NO.	ACCOUNT NO.

QUAN ORDERED	PROD. CODE	PART NO. & DESCRIPTION	QUAN SHIPPED	PRICE	AMOUNT
4 DRUMS		CHLOROTHENE NU 50 GALS. EA.	200 GALS.	.25/GAL.	50.00
6 DRUMS		FREON 50 GALS. EA.	300 GALS.	.50/GAL.	150.00
		TO BE PICKED UP BY VENDOR			

DISPOSITION [ ] ISSUE CREDIT & REBILL [ ] ISSUE CREDIT ONLY [ ] FXC PROPERTY TO BE RETURNED

PURCHASING

FORM F3000-00011-000

p 12 of 17

NO. 53741

FERROXCUBE CORPORATION

P.O. BOX 359, SAUGERTIES, N. Y.
Area Code 914 246-2811

APD [XX]
AS [ ]
RM [ ]

INVOICE DATE • 5 26 76

SOLD TO • MARISOL INC.
• 325 FACTORY LANE
• MIDDLESEX, N.J. 08846

SHIP TO • SAME

SHIP VIA	PREPAID	PPD & CHGD	COLLECT	DATE SHIPPED	OUR ORDER NO.	ACCOUNT NO.
					69221	0 174 00 5010

QUAN. ORDERED	PROD. CODE	PART NO. & DESCRIPTION	QUAN. SHIPPED	PRICE	AMOUNT
7 DRUMS		CHLOROTHENE NU, ETHYL ACETATE, CRUDE OIL, DETAR			
1 DRUM		CHLOROTHENE NU, GLACIAL ~~XXXXXXX~~ ACETIC ACID			
		TO BE PICKED UP BY VENDOR			
		WASTE CHEMICALS - ALL FOR DISPOSAL			
		($10.00 CHARGE PER DRUM)			

NC
25 gal

DISPOSITION [ ] ISSUE CREDIT & REBILL [ ] ISSUE CREDIT ONLY [ ] FXC PROPERTY TO BE RETURNED

PURCHASING

FORM F5000-00011-000

D-51

NO. 53142

APD
AS
RM

FERROXCUBE CORPORATION

P.O. BOX 359, SAUGERTIES, N. Y.
Area Code 914 246-2811

INVOICE DATE • 5 26 76

SOLD TO • MARISOL INC.
• 125 FACTORY LANE
• MIDDLESEX, N.J. 08846

SHIP TO • SAME

SHIP VIA	PREPAID	PPD & CHGS	COLLECT	DATE SHIPPED	OUR ORDER NO.	ACCOUNT NO.

QUAN. ORDERED	PROD. CODE	PART NO. & DESCRIPTION	QUAN SHIPPED	PRICE	AMOUNT
5 DRUMS		CHLOROTHENE NU 50 GALS. EA.	250 GALS.	.25/GAL.	62.50
		TO BE PICKED UP BY VENDOR			

DISPOSITION ☐ ISSUE CREDIT & REBILL ☐ ISSUE CREDIT ONLY ☐ FXC PROPERTY TO BE RETURNED

PURCHASING

● FORM F3000-00011-000

P 14 #1

DEBIT MEMO

No. 53863

FERROXCUBE CORPORATION

P.O. BOX 359, SAUGERTIES, N. Y.
Area Code 914 246-2811

APD XX
AS
RM

INVOICE DATE 9 13 76

SOLD TO: HARISOL INC.
125 FACTORY LANE
MIDDLESEX, N.J. 08846

SHIP TO: SAME

SHIP VIA	PREPAID	PPD & CHGE	COLLECT	DATE SHIPPED	OUR ORDER NO.	ACCOUNT NO.
					69230	0 174 00 5810

QUAN. ORDERED	PROD. CODE	PART NO. & DESCRIPTION	QUAN. SHIPPED	PRICE	AMOUNT
7 DRUMS		NU ACETATE CRUDE OIL DETAR			
8 DRUMS		NU ACETATE CRUDE OIL DETAR ~~FOR~~ ACETONE			
4 DRUMS		CRUDE OIL			
4 CARBOYS		(15 GAL.) DE SCALING ACID			
		TO BE PICKED UP BY VENDOR			
		WASTE CHEMICALS - ALL FOR DISPOSAL			

DISPOSITION ☐ ISSUE CREDIT & REBILL ☐ ISSUE CREDIT ONLY ☐ FXC PROPERTY TO BE RETURNED

PURCHASING

FORM 59000-0001 5800

No. 53862

APD [X]
AS [ ]
RM [ ]

FERROXCUBE CORPORATION

P.O. BOX 359, SAUGERTIES, N. Y.
Area Code 914 246-2811

INVOICE DATE • 9 13 76

SOLD TO • MARISOL INC.
• 125 FACTORY LANE
• MIDDLESEX, N.J. 08846

SHIP TO • SAME

SHIP VIA	PREPAID	PPD & CHGS	COLLECT	DATE SHIPPED	OUR ORDER NO.	ACCOUNT NO.
						0-17

QUAN. ORDERED	PROD. CODE	PART NO. & DESCRIPTION	QUAN SHIPPED	PRICE	AMOUNT
6 DRUMS		CHLOROTHENE NU 50 GALS. EA.		.25/GAL.	75.00
		TO BE PICKED UP BY VENDOR			

DISPOSITION [ ] ISSUE CREDIT & REBILL [ ] ISSUE CREDIT ONLY [ ] FXC PROPERTY TO BE RETURNED

PURCHASING

© FORM F8000-00011-000

AS
RM

5083 KINGS HIGHWAY, SAUGERTIES, N. Y.
Area Code 914 246-2811

INVOICE DATE • 1 6 77

SOLD TO • MARISOL INC.
125 FACTORY LANE
MIDDLESEX, N.J. 08846

SHIP TO • SAME

SHIP VIA	PREPAID	PPD & CHGE	COLLECT	DATE SHIPPED	OUR ORDER NO	ACCOUNT NO
					90593	1 511 5100 4 542 5100

QUAN ORDERED	PROD CODE	PART NO & DESCRIPTION	QUAN SHIPPED	PRICE	AMOUNT
13 DRUMS		RU ACETATE ERR CRUDE OIL ACETONE DETAR		N/C	
1 DRUM		GLACIAL ACETER		N/C	
2 DRUMS		OIL & KEROSENE		N/C	
5 DELBOYS		DESCALING ACID		N/C	
		TO BE PICKED UP BY VENDOR			
		WASTE CHEMICALS - ALL FOR DISPOSAL			

DISPOSITION ☐ ISSUE CREDIT & REBILL ☐ ISSUE CREDIT ONLY ☐ FXC PROPERTY TO BE RETURNED

PURCHASING

● FORM # 5000-00011-000

p 17 of 1

DEBIT MEMO

No. 54016

APD [X]
AS [ ]
RM [ ]

FERROXCUBE CORPORATION

5083 KINGS HIGHWAY, SAUGERTIES, N. Y.
Area Code 914 246-2811

INVOICE DATE • 1 6 77

SOLD TO • MARISOL INC.
• 125 FACTORY LANE
• MIDDLESEX, N.J. 08846

SHIP TO • SAME

SHIP VIA		PREPAID	PPD & CHGE	COLLECT	DATE SHIPPED	OUR ORDER NO	ACCOUNT NO
							1 511 5100 A 542 5100

QUAN. ORDERED	PROD. CODE	PART NO. & DESCRIPTION		QUAN SHIPPED	PRICE	AMOUNT
6 DRUMS		MU	50 GALS. EA.		.25/GAL.	
1 DRUM		FEOX	50 GALS.		.50/GAL.	
		TO BE PICKED UP VENDOR				

DISPOSITION [ ] ISSUE CREDIT & REBILL [ ] ISSUE CREDIT ONLY [ ] FXC PROPERTY TO BE RETURNED

PURCHASING

● FORM # 5000-00011-000

REGION 3

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT

FACILITY INSPECTION REPORT

N.Y. Dept. of Health
Bureau of Toxic Substances

1 TRANS.TYPE 1 ☐ Delete 2 ☒ Add | 2 FACILITY NO. 7: 56S19 | 8 DATE 13: 042082 | 14 TIME 17: 1500

20 CARD 21 TYPE 1 | 22 INSPECTOR'S NAME 38: Schoonmaker

REMARKS 72

20 CARD 21 TYPE 2

LEACHATE
1. Leachate is entering surface water.
2. Leachate is known to be contravening groundwater standards.
3. Refuse is being placed into water.

BURNING
4. Refuse is burning without permit or not under permit conditions.
5. There is evidence of unapproved previous burning.

COVER
6. Previous days refuse is not covered.
7. Refuse is protruding through daily, intermediate or final cover.
8. Intermediate or final cover is not in place or improperly applied.

GRADING
9. Depressions, ponding, cracked cover, or slopes steeper than 3 to 1 exist.
10. Vegetative cover is missing or inadequate on completed areas.
11. Soil erosion or other drainage problems exist.

SEPARATION DISTANCES
12. Refuse is closer than 50 feet to site boundaries.
13. Refuse is being placed less than 5 feet above groundwater or bedrock.
14. Refuse is being placed too close to surface water.

NUISANCE CONDITIONS
15. Odors are detectable off site.
16. Blowing dust or dirt is a nuisance.
17. ☒ Papers are uncontrolled or are blowing off-site.
18. Methane gas is known to be leaving the site.
19. Noise is a nuisance off-site.

OPERATION CONTROL
20. Operation Permit conditions are being violated. (List violations)
21. Refuse is not sufficiently confined or controlled.
22. Refuse is spread in layers thicker than 2 feet.
23. Refuse is not compacted or compacted insufficiently.
24. The working face height is greater than 10 feet.
25. Equipment on the site is not adequate for proper operation.

SAFETY AND HEALTH
26. Salvaging is uncontrolled or is creating a nuisance.
27. Rodents, insects, birds, or other vectors are not controlled.
28. Unsafe conditions or equipment exist. (List items)

ACCESS CONTROL
29. Access to the site is improper, unsafe, or inadequately controlled.
30. The site is open without an attendant.
31. Information about the site is not posted. (e.g., hours of operation)
32. Access to the operating area is poor or unsafe.

OTHER
33. ☒ Uncontrolled leachate is visible on, or near the site.
34. The quality of cover material is inadequate.
35. The working face is steeper than a 3 to 1 slope.
36. Monitoring wells are not operative.
37. Unapproved wastes have been deposited since last inspection.
38. Operator is unfamiliar with site boundaries, operation plan or permit

MARK BOXES WITH "X" ONLY IF ANSWER IS YES

Central Office Copy

FACILITY NAME: Tri Sanguities | LOCATION: Kirk Lane - Tri Sanguities

PERSONS INTERVIEWED & TITLES

G. Hartman
Operator

SITE SKETCH/COMMENTS (additional sheets attached ☐ YES ☒ NO)

#17 Papers blown into wooded area East of working face

#33 Leachate along toe of North Slope

P. L. Schoonmaker
INSPECTOR'S SIGNATURE

D-58

D.10

Appendix 1.1-9

p. 151

[redacted]TRA[redacted]FICE[redacted]PY

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

COMMUNICATIONS RECORD FORM

Distribution: (x) Town of Sanquentin L.F. ( ) _____
( ) _____, ( ) _____
( ) **Author**

Person Contacted: Edward Kahill / Edwin Schaumber **Date:** 12-18-85

Phone Number: 331-9300 **Title:** Assistant Public Health Engineer

Affiliation: Wstr. Co. Dept. of Health **Type of Contact:** interview

Address: 284 Fair St. Kingston N.Y. **Person Making Contact:** L. Wilson

Communications Summary: Town of Sanquentin L.F. 356003

Elevated levels of iron and manganese are found in ground water at site. The site is an old quarry. There is only shale under the L.F. There has been no recent problem with leachate draining into an ajacent stream.

(see over for additional space)

Signature: Terry Wilson

Received from:
NYSDEC Region 3

Dear Ed,

I have enclosed a copy of test results of the Saugerties Landfill's two monitoring wells. I have also scheduled a meeting of our Town Engineering firm on concerns from the UCBH at our land fill on April 11. at 1pm. I hope you will be able to attend.

Thank You

John Hera (48 Clermont St. Saug)
Saugerties Town Board

EnviroTest Laboratories, Inc.

Received from
NYSDEC Region 3

71 Broadway Newburgh, New York 12550
(914) 562-0890

RECEIVED
MAR 21 1985

- 284

New Paltz

LAB#: 33467A DATE REC'D: 85/02/07 DATE COLL'D: 85/02/07 STATUS: closed
FNAME: (T) Saugerties
STREET:
FNAME:
CITY: STATE: ZIP:
FL LOCATION: Landfill, North GWMW
COLL'D BY: E. Andersen, EnviroTest

REPORT TO:
BILL TO:

COLI:		Cr+6	<0.05	COD	450
COLI:		Phenol	<0.005	HARD-T	1000
FC		CN		Ca Hard	
		P		SOS	
	1.2	Br		Cl	410
		Color	2.5 Pt-Co	Alk	110
		Odor	1	BOD-Inf	
		Turb		BOD-Eff	
	110	PH	7.4	BOD-S	
	<0.02	LI		TSS-Inf	
		Cond	150 uMHOS	TSS-Eff	
		NH3-T	<0.4	MLSS	
		TKN	0.3	MLVSS	
					<2 ug/l
			<0.05		<0.01
					12
	530		<0.05		
			12		
SOL					
& O			<0.05		
	11				
			0.95		0.11
	<2 ug/l		0.4 ug/l		4.9
	0.30				
			0.11		
	<0.01				<0.1

Remarks: All results in mg/l unless otherwise indicated.

Ronald A. Payer
Laboratory Director 3/4/85

D-61

EnviroTest Laboratories, Inc.

D. 11

(914) 562-0890

p 3 of 6

LAB#: 3544*8 DATE REC'D: 85/02/07 DATE COLL'D: 85/02/07 STATUS: close
LNAME: (T) Saugerties FNAME:
STREET: CITY: STATE: ZIP:
SPL LOCATION: Landfill, South GWMW

REPORT TO:
BILL TO:

T COLI:		Cr+6	: <0.05	COD	: 550
F COLI:		Phenol	: 0.010	HARD-T	: 550
SPC	:	CN	:	Ca Hard	:
F	:	B	:	SO3	:
NO3	: 6.2	Br	:	Cl	: 97
NO2	:	Color	: 50 Pt-Co	Alk	: 1400
T-PO4	:	Odor	: 3	BOD-Inf	:
O-PO4	:	Turb	:	BOD-Eff	:
SO4	: 72	pH	: 6.7	BOD-S	:
MBAS	: 0.21	LI	:	TSS-Inf	:
SiO2	:	Cond	: 2200 uMHOS	TSS-Eff	:
H2S	:	NH3-N	: 21	MLSS	:
NKT-N	:	TKN	: 100	MLVSS	:
V	:	Ca	: 23	K	:
Tl	:	Cr	: <0.05	Se	: <2 ug/l
VS	:	Co	:	Ag	: <0.01
TDS	: 1700	Cu	: <0.05	Na	: 320
SS	:	Au	:	Tl	:
% SOL	:	Fe	: 35	Sn	:
O & G	:	Pb	: <0.05	Ti	:
Al	: 1.4	Mg	:	V	:
Sb	:	Mn	: 15	Zn	: 1.5
As	: 4.2 ug/l	Hg	: <0.4 ug/l	THM	:
Ba	: 0.31	Mo	:	TOC	: 56
Be	:	Ni	: 0.17		
Cd	: <0.01	Pd	:	Sr	: <0.1

Remarks: All results in mg/l unless otherwise indicated.

Ronald A. Bayer
Laboratory Director 3/4/85

D.12

Received from
NYSDEC Region 3

FERROXCUBE
DIVISION OF AMPEREX ELECTRONIC CORP.
Saugerties, NY 12477 914-246-2811 TWX 510-247-5410
R&E/2-76

April 12, 1982

Town of Saugerties
Town Hall
Main Street
Saugerties, NY 12477

ATTN: George Turner, Town Supervisor

RE: Ground Water Well Monitoring Analysis
(T) Saugerties Landfill 3/27/82

Dear Mr. Turner:

The results of the referenced analyses are as follows:

Parameter	Unit	1-North Well	2-South Well	3-House Well
Chlorides	mg/l	13	280	50
Conductivity	µmhos/cm	220	1800	640
pH	standard	6.7	6.5	9.2
TOC	mg/l	15	21	7
Aluminum	mg/l	<1.0	<0.1	<0.1
Barium	mg/l	<0.5	<0.5	<0.5
Chromium(T)	mg/l	<0.1	<0.1	<0.1
Chromium(Hex)	mg/l	<0.05	<0.05	<0.05
Iron	mg/l	0.7	4.7	0.1
Manganese	mg/l	<0.1	7.3	<0.1
Nickel	mg/l	<0.1	0.1	<0.1
Strontium	mg/l	0.4	2.3	<0.1
zinc	mg/l	<0.1	<0.1	<0.1

If there are any questions regarding this data, please do not hesitate to contact the undersigned.

Very turly yours,

Joseph L. Wolf, Jr.
Environmental Engineer

/cab

cc. E. Jones
S. Dahlman (T) Saugerties

RECEIVED
APR 15 1982
ULSTER COUNTY
HEALTH DEPARTMENT

Hypendix 1.1-12

D.13

p 1 of 4

0483

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARC
ENVIRONMENTAL HEALTH CENTER

RECEIVED FROM
USEPA
REGION II

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

LAB ACCESSION NO: 00692 YR/MO/DAY/HR SAMPLE REC'D: 79/05/22/11

REPORTING LAB: 10 EHC ALBANY
PROGRAM: 124
STATION (SOURCE) NO:
DRAINAGE BASIN: 13 NY GAZETTEER NO: 5564 COUNTY: ULSTER
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: IN SAUGERTIES UPGRADIENT MONITOR WELL FOR GROUND WATER
EXACT SAMPLING POINT: 9FT BELOW GROUND SURFACE
TYPE OF SAMPLE: 25 GROUND WATER
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 05/21/14
REPORT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
000401	FLUORIDE,FREE	MG/L	0.13	
000801	NITROGEN,NITRATE&NITRITE	MG/L	0.60	
009401	BARIUM	MG/L	0.5	LT
010301	MERCURY, TOTAL	MG/L	0.0004	LT
010601	SILVER	MG/L	0.02	LT
309301	ARSENIC	MG/L	0.01	LT
309701	CADMIUM	MG/L	0.003	
309801	CHROMIUM	MG/L	0.02	
310101	LEAD	MG/L	0.01	
310501	SELENIUM	MG/L	0.01	LT
001900	PH (LABORATORY)		7.0	
001001	CHLORIDE	MG/L	3.	
002401	SULFATE AS SO4	MG/L	11.	

DATE COMPLETED: 7/30/79

RECEIVED
AUG 1 1979
ULSTER COUNTY
HEALTH DEPARTMENT

DIRECTOR OF ENVIRONMENTAL SANITATION
ULSTER COUNTY HEALTH DEPARTMENT
300FLATBUSH AVENUE
KINGSTON, NEW YORK 12401

SUBMITTED BY: SCHONMKE

0484

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

1207

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REGION II

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

LAB ACCESSION NO: 00692 YR/MO/DAY/HR SAMPLE REC'D: 79/05/22/11

REPORTING LAB: 10 EHC ALBANY
PROGRAM: 124
STATION (SOURCE) NO:
DRAINAGE BASIN: 13 NY GAZETTEER NO: 5564 COUNTY: ULSTER
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: IN SAUGERTIES UPGRADIENT MONITOR WELL FOR GROUND WATER
EXACT SAMPLING POINT: 9FT BELOW GROUND SURFACE
TYPE OF SAMPLE: 25 GROUND WATER
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 05/21/14
REPORT SENT TO: CO (1) RO (1) LPHE (1) LHD (0) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
311101	ALUMINUM	MG/L		NA
009901	COPPER	MG/L	0.05	LT
010001	IRON	MG/L	0.76	
010201	MANGANESE	MG/L	0.18	
010901	ZINC	MG/L	0.14	

DATE COMPLETED: 7/30/79

RECEIVED
AUG 1 1979
ULSTER COUNTY
HEALTH DEPARTMENT

DIRECTOR OF ENVIRONMENTAL SANITATION
ULSTER COUNTY HEALTH DEPARTMENT
300FLATBUSH AVENUE
KINGSTON, NEW YORK 12401

SUBMITTED BY: SCHONMKE

0460

NEW . RK STATE DEPARTMENT OF HE_TH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

1.31

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USEPA
REGION II

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

LAB ACCESSION NO: 00686 YR/MO/DAY/HR SAMPLE REC'D: 79/05/22/11

REPORTING LAB: 10 EHC ALBANY
PROGRAM: 124
STATION (SOURCE) NO:
DRAINAGE BASIN: 13 NY GAZETTEER NO: 5564 COUNTY: ULSTER
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: TN SAUGERTIES LANDFILL DOWNGRADIENT GRD
UNDWATER MONITOR WELL
EXACT SAMPLING POINT: 11 FEET BELOW GROUND SURFACE
TYPE OF SAMPLE: 25 GROUND WATER
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 05/21/14
REPORT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
000401	FLUORIDE,FREE	MG/L	0.1	LT
000801	NITROGEN,NITRATE&NITRITE	MG/L	0.2	LT
009401	BARIUM	MG/L	0.5	LT
010301	MERCURY, TOTAL	MG/L	0.0004	LT
010601	SILVER	MG/L	0.02	LT
309301	ARSENIC	MG/L	0.01	
309701	CADMIUM	MG/L	0.002	LT
309801	CHROMIUM	MG/L	0.01	
310101	LEAD	MG/L	0.01	LT
310501	SELENIUM	MG/L	0.01	LT
001900	PH (LABORATORY)		6.5	
001001	CHLORIDE	MG/L	130.	
002401	SULFATE AS SO4	MG/L	110.	

DATE COMPLETED: 7/30/79

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AUG 1 1979
ULSTER COUNTY
HEALTH DEPARTMENT

DIRECTOR OF ENVIRONMENTAL SANITATION
ULSTER COUNTY HEALTH DEPARTMENT
300FLATBUSH AVENUE
KINGSTON, NEW YORK 12401

SUBMITTED BY: SCHOONMAK

0461

p414

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

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RESULTS OF EXAMINATION
(PAGE 2 OF 2)

LAB ACCESSION NO: 00686 YR/MO/DAY/HR SAMPLE REC'D: 79/05/22/11

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REPORT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
311101	ALUMINUM	MG/L	0.76	
010201	MANGANESE	MG/L	6.0	.5 →
010901	ZINC	MG/L	0.15	
009901	COPPER	MG/L	0.05	LT
010001	IRON	MG/L	8.3	.6 →

DATE COMPLETED: 7/30/79

RECEIVED
AUG - 1 19[illegible]
ULSTER COUNTY
HEALTH DEPARTMENT

DIRECTOR OF ENVIRONMENTAL SANITATION
ULSTER COUNTY HEALTH DEPARTMENT
300 FLATBUSH AVENUE
KINGSTON, NEW YORK 12401

SUBMITTED BY: SCHOONMAK

Appendix 1.3-

D.14 p 1of5

Ground-Water Resources of Orange and Ulster Counties, New York

77457

By MICHAEL H. FRIMPTER

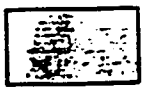
GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1985

Prepared in cooperation with the New York State Conservation Department

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1972

D-68

EXPLANATION



Stratified sand and gravel at land surface and above the water table

Stratified sand and gravel at land surface and below the water table

Stratified sand and gravel below clay or silt and the water table

Stratified clay and silt with no or thin layers of sand and gravel at land surface and below the water table

Till and bedrock outcrop, small quantities of sand and gravel may occur in these deposits, but they are not capable of sustaining industrial or municipal water supplies

Contact

Dashed where inferred or projected

A——————A'

Location of cross sections described in report

41°45'

SCALE 1:125 000

D-69


N
WOODSTOCK
ASHOKAN RESERVOIR
RIVER

EXPLANATION

LITHOLOGIC UNITS

Folded shale and sandstone

Carbonate rock

Crystalline rock

Conglomerate or quartzite

Red shale and red conglomerate

Layered sandstone and shale

Quartzite with some shale layers

Contact

Dotted where concealed

41°45'

Fault

Dashed where inferred; dotted where concealed

SCALE 1:125 000

2 0 2 4

D-71

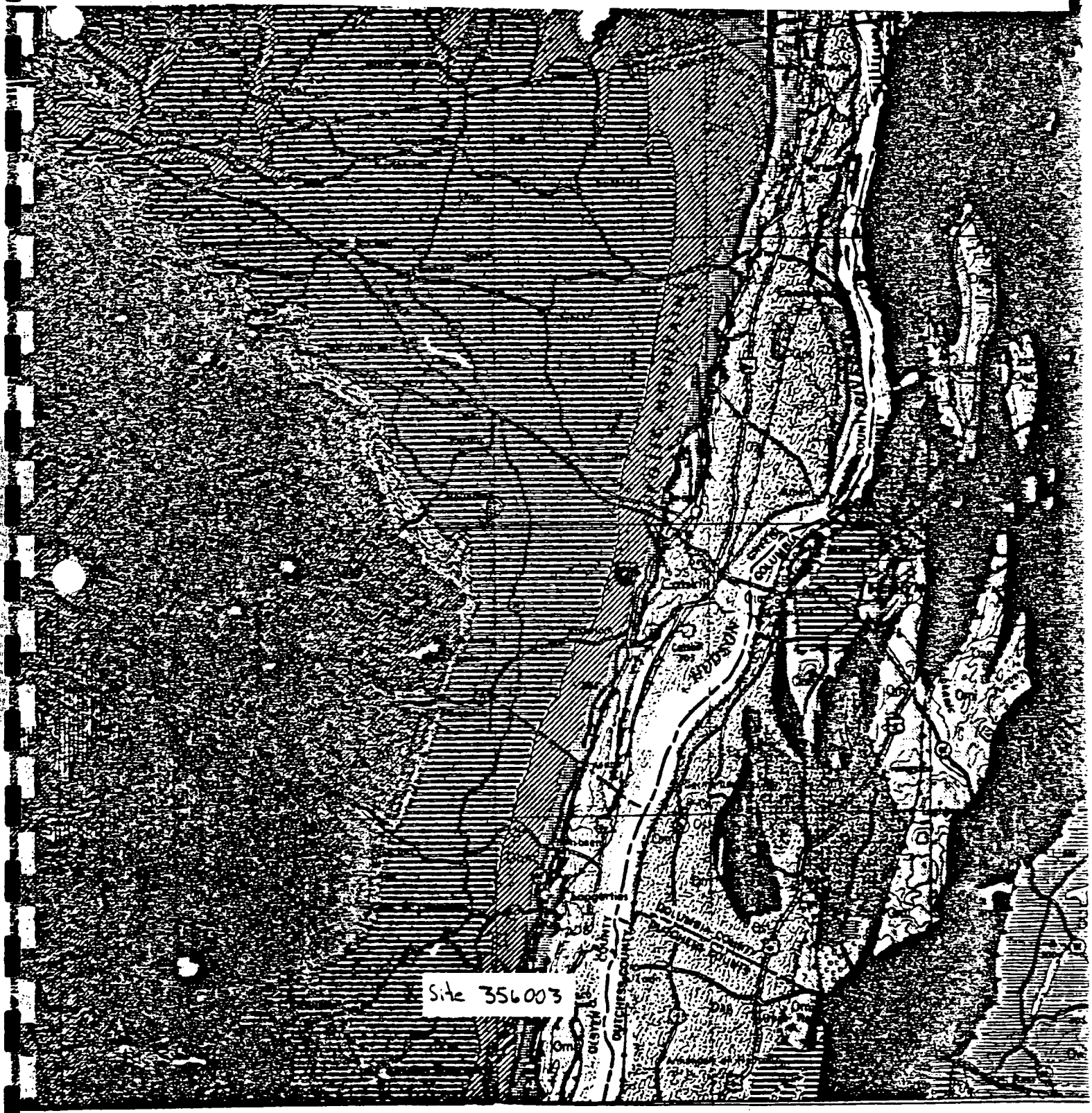

N
42°30'
D-7

GEOLOGIC MAP OF NEW YORK

1970

Appendix 1.3-2
p. 1 of 2

Hudson–Mohawk Sheet



Scale 1:250,000

0 5 10 15 Statute Miles 20

5 0 5 10 15 20 25 Kilometers 30

CONTOUR INTERVAL 100 FEET

D-73

Random dash, V, and + patterns: igneous or meta-igneous

A query (?) placed before the symbol of a mapping unit may be older than the age indicated. A query placed after a mapping unit signifies doubt concerning the identification

An irregular lower margin on the "color boxes" signifies an unconformable relationship with subjacent units, however with the next unit listed. Wavy lines signify parallel and tooth lines signify angular unconformities.

Boxes outlined in red denote igneous or meta-igneous r

15'

43°00'

CENOZOIC — Quaternary

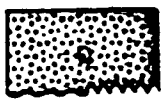
MESOZOIC — Jurassic-Lower Cretaceous

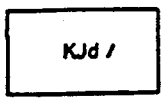
Upper Devonian

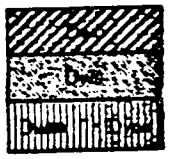
Middle Devonian

PALEOZOIC — Ordovician

Cambrian







GLACIAL AND ALLUVIAL DEPOSITS

Q — Underlying bedrock geology unknown.

MESOZOIC INTRUSIVES

KJd — Lamprophyre, diabase, and albite-basalt dikes; not shown in Proterozoic terrane.

WEST FALLS GROUP
1,500-2,100 ft. (460-640 m.)

Dwh — Honesdale Formation—sandstone, shale.

Dws — Slide Mountain Formation—sandstone, shale, conglomerate.

Dwm — Beers Hill, Dunn Hill, Millport, and Moreland Shales.

Dww — upper Walton Formation—shale, sandstone, conglomerate.

SONYEA GROUP
700-1100 ft. (210-340 m.)

Ds — "Enfield" and Kattel Formations—shale, siltstone, sandstone.

Dsw — lower Walton Formation—shale, sandstone, conglomerate.

GENESEE GROUP
1,200-1,500 ft. (370-460 m.)

Dgo — Oneonta Formation—shale, sandstone, conglomerate.

Dgu — Unadilla, Laurens, New Lisbon, and Gilboa Formations —shale, siltstone, sandstone.

HAMILTON GROUP
1,700-2,800 ft. (520-850 m.)

Dhmo — Moscow Formation—In west: Cooperstown and Portland Point shale and sandstone Members; in east: "Manorkill" and Portland Point shale and sandstone Members.

Dhpm — Panther Mountain Formation—shale, siltstone, sandstone.

Dhmr — Marcellus Formation—Pecksport, Solsville, Otsego, and Chittenango shale and sandstone Members, Cherry Valley Limestone, and Union Springs Shale Members.

→ Dhpl — Plattekill Formation—shale, sandstone; Ashokan Formation—shale, sandstone.

Dhm — Undifferentiated lower Hamilton Group—Panther Mountain, Mount Marion, Stony Hollow, and Union Springs shales and sandstones.

ONONDAGA LIMESTONE AND ULSTER GROUP
100-500 ft. (30-150 m.)

Don — Onondaga Limestone—Seneca, Morehouse (cherty), and Nedrow Limestone Members, Edgecliff cherty limestone Member, local bioherms.

Dou — Onondaga Limestone; Schoharie Formation—shale, limestone; Carlisle Center Siltstone; Esopus Shale.

Do — Oriskany Formation—sandstone, arenaceous limestone.

Dgl — Glenerie Formation—limestone, shale

D-74

D.15 Appendix 1.3-3
2 of 4

GROUND-WATER BASIC DATA ORANGE AND ULSTER COUNTIES NEW YORK

BY

MICHAEL H. FRIMPTER
U.S. GEOLOGICAL SURVEY

Prepared by

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
in cooperation with

NEW YORK WATER RESOURCES COMMISSION

STATE OF NEW YORK
CONSERVATION DEPARTMENT
WATER RESOURCES COMMISSION

Bulletin 65
1970

Table 1.--Records of selected wells and springs (Continued)

Well number	Owner's name	Reported yield (gallons per minute)	Use	Method of construction; completion	Depth of well (feet)	Diameter (inches)	Length of casing (feet)	Aquifer	Water level below land surface (feet)	Water level date	Topographic situation	Altitude above sea level (feet)	Remarks
204-427-1	Richard Covetta	12	D	-- --	r72	7	68	Sandstone	r10	7/ 1/66	Vl	1,375	
-2	John Rosoltz	40	D	Dr; OE	r96	7	97	Gravel	r10	6/12/65	Vl	1,375	Backfilled 1 ft.
204-418-1	Mr. Nichols	--	D	Du; P	18	36	18	Till	6.0	7/25/49	Ms	820	
204-412-1	Howard Humphries	20	D	Dr; OH	135	6	20	Sandstone	6.0	6/10/65	Ms	1,110	
204-411-1	School No. 5	--	I	-- --	61	6	--	do.	Flows	7/25/66	Vl	1,200	Partial anal., temp. -- [illegible]
204-401-1	Mr. Tolle	--	D	-- --	r115	6	--	do.	--	--	Ms	320	
204-400-1	Mr. Kenon	6	D	Dr; OH	45	6	--	do.	--	--	Vl	340	
204-359-1	Unknown	--	A	-- --	r125	6	6	Shale	Flows	7/13/49	Ms	190	H_2S.
204-358-1	Arthur V. Wallet	52	D	-- --	r107	6	56	Carbonate	r5	1956	Vl	1[illegible]5	Do.
204-357-1	Mr. Schroeter	--	T	Dr; OE	r114	--	114	Clay	r13	--	Vl	65	Clay; destroyed.
-2	do.	--	T	Dr; OE	r25	--	25	Sand	r4	--	Vl	[illegible]	Clay.
203-419-1	Paul Miller	10	D	-- --	440	H, 6	220	Sandstone	r50	8/23/49	Ms	1,200	
203-409-1	A. B. Harris	--	D	-- --	r167	6	30	Shale	--	--	Vl	980	
203-407-1	Mr. Greenwood	7	D	-- --	r176	6	10	Sandstone	--	--	Ms	760	
203-403-1	John Hasselgrave	--	D	-- --	107	6	--	Shale	[illegible]	7/16/60	Vl	395	
203-359-1	D. Compose	--	D	-- --	r145	6	--	do.	r5	7/14/49	Vl	260	H_2S.
203-358-1	Charles Bennett	--	D	-- --	166	6	--	Carbonate	[illegible]	11-10/60	Vl	185	Do.
-2	Unknown	25	D	-- --	r45	6	10	do.	r26	7/13/49	Vl	180	
202-417-1	D. Schaffer	30	D	-- --	120	6	90	Sandstone	Flows	7/25/49	Vl	710	
202-416-2	Charles Gustafson	10	D	-- --	260	6	170	do.	r.0	1960	Ms	760	
202-409-1	McDaniel and Wingert	--	C	-- --	r265	6	--	do.	r50	--	Ms	970	
202-408-1	Richard E. Bark	--	C	-- --	r199	6	50	do.	78.1	[illegible]/60	Vl	[illegible]40	Partial anal: H_2S.
-2	Village of Woodstock	250	P	Dr; S	r36	10	26	Gravel	r9	9/ 8/60	Vl	[illegible]30	Clay; backfilled 64 ft.
-3	do.	250	P	Dr; S	r36	10	26	do.	r8	9/ 8/60	Vl	[illegible]30	
202-403-1	Mr. Marsh	19	D	Dr; OH	r80	6	--	Sandstone	--	--	Ter	985	H_2S.
202-359-1	John Groce	12	D	-- --	r135	6	135	Gravel	r40	9/ /59	Vf	1[illegible]5	
-2	George Hoffman	60	P	-- --	r157	6	130	Carbonate	r14	7/14/49	Ter	190	H_2S; clay.
-3	Mount Morion Water Co., Inc.	--	P	Dr; S	r81	12	66	Sand	--	--	Ter	180	
202-357-1	Henry Fuller	20	C, D	-- --	r165	6[illegible]	140	Shale	r40	7/14/49	Ter	155	Partial anal, clay.
201-462-1Sp	Fred Shaver	20	A	-- --	--	--	--	Gravel	0	10/26/66	Vl	1,960	Spring in old stream channel.
-2	do.	--	A, D	Du; P	3	60	4	Till	0	10/26/66	Ms	1,900	Developed spring, supplies four houses and a barn; filled in 1 ft.
201-415-1	Howard C. Umbey	20	D	Dr; OE	r90	6	90	Gravel	--	--	Ms	910	
201-414-1	Perrine Studios	3	D	Dr; OH	r83	6	--	Sandstone	--	--	Ms	350	

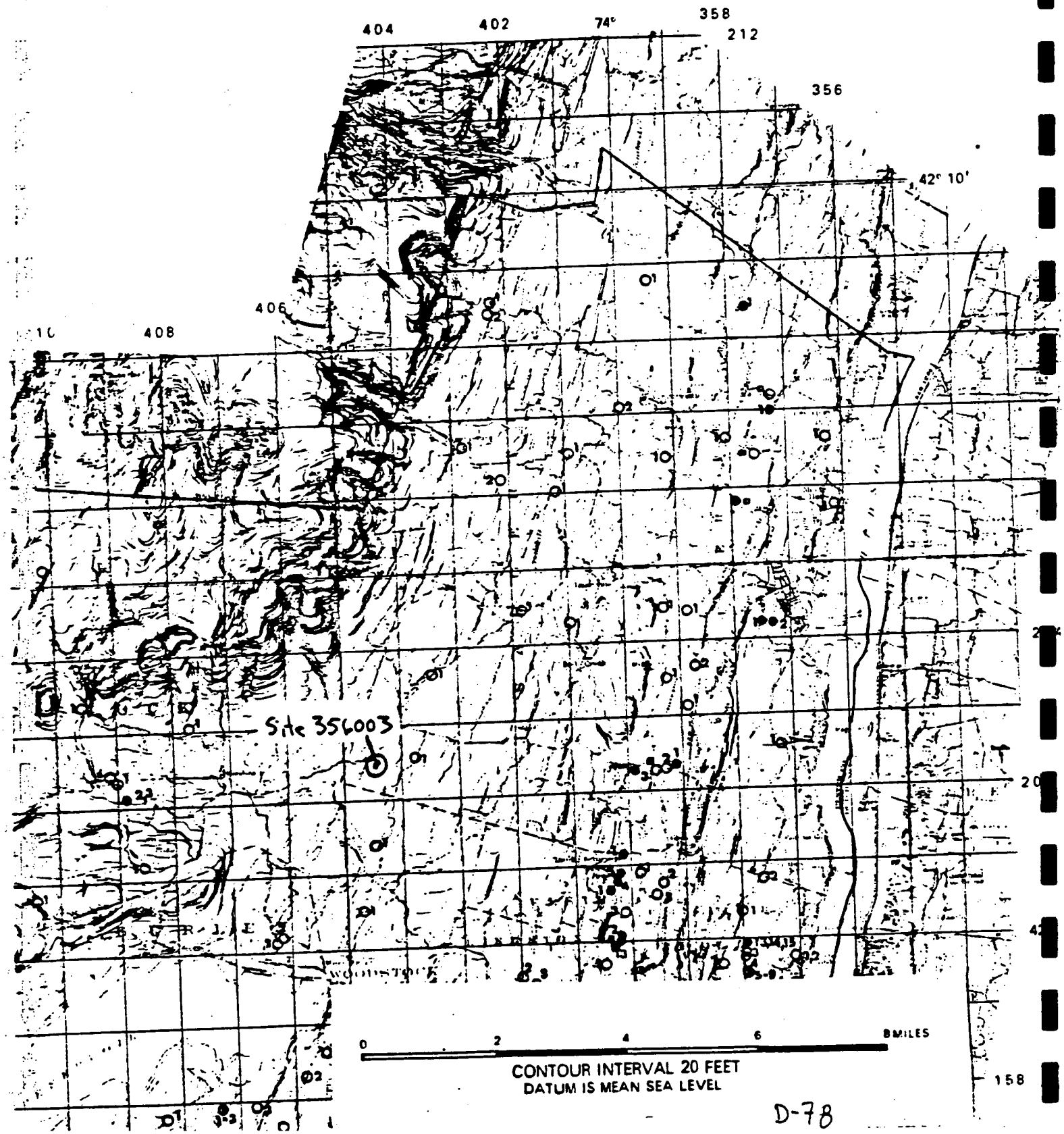
Table 1.--Records of selected wells and springs (Continued)

Well number	Owner's name	Reported yield (gallons per minute)	Use	Method of construction; completion	Depth of well (feet)	Diameter (inches)	Length of casing (feet)	Aquifer	Water level: Below land surface (feet)	Water level: Date	Topographic situation	Altitude above sea level (feet)	Remarks
201-413-1	Wittenberg Grade School	9	I	-- --	r30	6	30	Sandstone	0.9	7/17/49	Hs	820	
201-411-1	E. Lester	12	D	-- --	r135	6	10	do.	--	--	Hs	820	Iron.
201-410-1	B. B. Schultis	--	D	-- --	r97	6	--	do.	--	--	VF	860	
201-409-1	Irving Parker	--	--	-- --	r138	6	--	do.	--	--	VF	930	
201-404-1	E. A. Schnack	--	D	-- --	r60	6	--	do.	--	--	VF	380	
201-400-1	Town of Ulster	--	T	Dr; OE	r71	8	71	Sand and gravel	r12.5	--	Hs	160	Log.
200-416-1	Anthony and Rosario Gonguzza	--	A	Dr; OE	33	6	36	Gravel	12.4	10/26/66	VF	1,650	Filled in 3 ft.
200-415-1	Beechford Farms, Inc.	20	A, D	Dr; OH	202	10, 8	202	Sandstone	Flows	1965	VF	680	
200-410-1	V. Siegel	--	A, D	-- --	181	6	180	do.	Flows	8/ 4/49	Hs	740	Flows 6 gpm from reduced outlet.
200-406-1	August Nay	9	D	-- --	r149	6	29	do.	r31	7/29/49	Hs	960	
200-406-1	Richard S. Gibbs	12	D	-- --	r98	6	22	do.	r30	1955	Hs	590	
-2	Edward and Jeanette Loseqnl	7	D	-- --	r180	--	--	do.	r2	1956	Hs	600	H_2S.
200-404-1	Donald Osgood	--	D	-- --	r80	6	--	Shale	r6	9/13/60	Hs	418	
200-400-1	John Fredricks	--	U	Du; P	19	30	19	Gravel	13	10/18/60	Hs	200	
-2	Town of Ulster	--	T	Dr; OE	r64	8	64	do.	--	--	VF	150	Log; backfilled 2 ft.
-3	do.	--	T	Dr; OH	r47	8	46	Shale	--	--	Hs	160	Log.
-4	Halcyon Park Water Dist.	200	P	Dr; S	r76	6	57	Gravel	12.6	12/ 7/65	Hs	172	Dn.
-5	N. Y. State Thruway Authority	200	P	-- --	r77	6	--	do.	r31	9/29/53	Hs	165	dd 13 after pumping 8 hours; log: from R.I 9/29/53.
200-359-1	L. A. Hall	--	D	Dr; OH	r97	6	7	Shale	--	--	Hs	160	
-2	B. Bishop	30	D	-- --	r123	6	7	Carbonate	--	--	VF	115	
-3	Town of Ulster	--	T	-- --	r153	8	149	Shale	r24.5	--	Ter	150	Log.
200-357-1	Harry Carle	3	D	-- --	r128	6	20	Carbonate	9.1	10/20/60	Hs	180	
-2	R. Dolninger	5	D	-- --	r110	6	60	Shale	r17	1951	Ter	190	
159-413-1	Kingston YMCA	--	I	Du; P	5	120	9	Gravel	Flows	9/22/44	Hs	1,270	Temp in R 9/22/44.
-2	do.	6	I	Dr; OH	r136	6	--	Sandstone	--	--	Hs	1,330	
159-409-1	Charles Smishkoff	20	C, D	-- --	r128	6	8	do.	r46	7/29/49	Hs	730	
159-401-1	Cecelia and Anna Oldpough	--	D	-- --	103	6	--	do.	15.6	9/21/60	VF	160	
-2	Anna and Ernst Hossl	3 1/2	D	-- --	r136	6	10	do.	r60	1957	Hs	380	
-3	Unknown	3 3/4	D	-- --	r293	6	16	do.	r90	10/ /58	Hs	600	
159-400-1	Paul Clark	4	D	-- --	r162	--	--	do.	r112	10/18/60	Hs	210	
-2	Town of Ulster	--	T	Dr; OE	r76	8	76	None	--	--	VF	145	Log.
-3	do.	10	T	Dr; OE	r75	8	75	Gravel	--	--	VF	145	dd 6; log; backfilled 2 ft.
159-358-1	Ringsvale Water Co.	40	T	Dr; OH	r180	6	26	Shale	r0	1955	Ter	157	dd 140 after pumping 24 hours; log.

BULLETIN 65

PLATE

Published by NEW YORK STATE WATER RESOURCES C
CONSERVATION DEPARTMENT , DIVISION OF WATER R



D-78

D.16 Manikam

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Corning Tower The Governor Nelson A. Rockefeller Empire State Plaza Albany, New York 12237

David Axelrod, M.D.
Commissioner

December 14, 1987

DEC 18 1987

Mr. Walter Demick
Bureau of Hazardous Site Control
NYS Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

RE: Phase II NYSDOH Sampling,
Saugerties Landfill #356003
Rock Haven Landfill #356015

Dear Mr. Demick:

Please find attached reports of analysis for samples collected from two residences adjacent to the Rock Haven Landfill and the onsite well at the Saugerties Landfill. Inorganic results for the Rock Haven samples have not been completed as yet. These results will be transmitted when they become available.

If you have any questions please feel free to call me at 518-458-6310.

Sincerely,

Kim L. Mann
Research Scientist I
Bureau of Environmental Exposure
Investigation

tjl

ATTACHMENT

cc: Mr. Tramontano
Mr. Bates

RECEIVED

DEC 21 1987

BUREAU OF
HAZARDOUS SITE CONTROL
DIVISION OF HAZARDOUS
WASTE REMEDIATION

D-79

0806 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 871002473 SAMPLE RECEIVED:87/09/17/11 CHARGE: 5.00
PROGRAM: 106:BUREAU OF ENVIRONMENTAL EXPOSURE INVESITGATION
SOURCE ID: DRAINAGE BASIN:13 GAZETTEER CODE:5564
POLITICAL SUBDIVISION:SAUGERTIES COUNTY:ULSTER
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: SAUGERTIES LANDFILL 212 SAUGERTIES NY
DESCRIPTION:BARN BATH TAP
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: 10-001:SAFE DRINKING WATER ACT - METALS ONLY
SAMPLE TYPE: 160:PRIVATE WATER SUPPLY - MISCELLANEOUS
TIME OF SAMPLING: 87/09/15 13:50 TO 87/09/15 14:10 DATE PRINTED:87/10/14

ANALYSTS: ICP-1 ICP GROUPING 1

PARAMETER	RESULT
MERCURY	< 0.2 MCG/L
ARSENIC	< 10. MCG/L
SELENIUM	< 5.0 MCG/L
LEAD	< 10. MCG/L
BERYLLIUM	< 1. MCG/L
SILVER	< 10. MCG/L
BARIUM	6. MCG/L
CADMIUM	< 5. MCG/L
COBALT	< 5. MCG/L
CHROMIUM	< 5. MCG/L
COPPER	< 5. MCG/L
IRON	31. MCG/L
MANGANESE	9. MCG/L
NICKEL	< 5. MCG/L
STRONTIUM	30. MCG/L
THALLIUM	< 5. MCG/L
VANADIUM	< 5. MCG/L
ZINC	< 10. MCG/L
MOLYBDENUM	< 20. MCG/L
ANTIMONY	< 50. MCG/L
TIN	< 50. MCG/L
THALLIUM	< 20. MCG/L
ALUMINUM	< 100. MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(1), RO(1), DPHE(2), FED( ), INFO-R( ), INFO-D( )

RONALD TRAMONTANO, PE
BUR. ENVIRONMENTAL EXPOSURE INVESTIGAT.
NY STATE DEPT. HEALTH
11 UNIVERSITY PLACE
ALBANY, NY 12237

SUBMITTED BY:W MEYER

0401

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

T. Saugerties
356.003

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 874280 SAMPLE RECEIVED:87/09/16/ CHARGE: 52.50
PROGRAM: 108:HAZARDOUS WASTE SITE-PRELIMINARY INVESTIGATION
SOURCE ID: DRAINAGE BASIN:13 GAZETTEER CODE:5564
POLITICAL SUBDIVISION:SAUGERTIES COUNTY:ULSTER
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: SAUGERTIES LANDFILL 212 SAUGERTIES NY
DESCRIPTION:BARN BATH TAP
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: VOL3:PURGEABLES - HALOGENATED AND AROMATICS
SAMPLE TYPE: 160:PRIVATE WATER SUPPLY - MISCELLANEOUS
TIME OF SAMPLING: 87/09/15 13:50 TO 87/09/15 14:10 DATE PRINTED:87/09/30

ANALYSIS: VH0502I VOLATILE HALOGENATED INDICATORS-EPA METHOD 502.1
DATE REPORTED: 87/09/28 REPORT MAILED OUT

PARAMETER	RESULT
CHLOROMETHANE	< 1. MCG/L
BROMOMETHANE	< 1. MCG/L
VINYL CHLORIDE	< 1. MCG/L
DICHLORODIFLUOROMETHANE	< 1. MCG/L
CHLOROETHANE	< 1. MCG/L
METHYLENE CHLORIDE (DICHLOROMETHANE)	< 1. MCG/L
TRICHLOROFLUOROMETHANE	< 1. MCG/L
1,1-DICHLOROETHENE	< 1. MCG/L
1,1-DICHLOROETHANE	< 1. MCG/L
TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
CIS-1,2-DICHLOROETHENE	< 1. MCG/L
CHLOROFORM	< 1. MCG/L
1,2-DICHLOROETHANE	< 1. MCG/L
DIBROMOMETHANE	< 1. MCG/L
1,1,1-TRICHLOROETHANE	< 1. MCG/L
CARBON TETRACHLORIDE	< 1. MCG/L
BROMODICHLOROMETHANE	< 1. MCG/L
2,3-DICHLOROPROPENE	< 1. MCG/L
1,2-DICHLOROPROPANE	< 1. MCG/L
TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
TRICHLOROETHENE	< 1. MCG/L
1,3-DICHLOROPROPANE	< 1. MCG/L
DIBROMOCHLOROMETHANE	< 1. MCG/L
CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
1,1,2-TRICHLOROETHANE	< 1. MCG/L
1,2-DIBROMOETHANE	< 1. MCG/L
2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
BROMOFORM	< 1. MCG/L
1,1,1,2-TETRACHLOROETHANE	< 1. MCG/L
1,2,3-TRICHLOROPROPANE	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

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OCT 7 1987
TOXIC SUBSTANCE ASSESSMENT

COPIES SENT TO: CO(2), RO(1), LPHE(2), FED( ), INFO-P( ), INFO-L( )

RONALD TRAMONTANO, PE
BUR. ENVIRONMENTAL EXPOSURE INVESTIGAT.
NY STATE DEP'T. HEALTH
IT UNIVERSITY PLACE
ALBANY, NY 12237

SUBMITTED BY:W MEYER

0402 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 874280 SAMPLE RECEIVED:87/09/16/ CHARGE: 52.50
POLITICAL SUBDIVISION:SAUGERTIES COUNTY:ULSTER
LOCATION: SAUGERTIES LANDFILL 212 SAUGERTIES NY
TIME OF SAMPLING: 87/09/15 13:50 TO 87/09/15 14:10 DATE PRINTED:87/09/30

PARAMETER	RESULT
1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
TETRACHLOROETHENE	< 1. MCG/L
PENTACHLOROETHANE	< 1. MCG/L
1-CHLOROCYCLOHEXENE-1	< 1. MCG/L
CHLOROBENZENE	< 1. MCG/L
BIS(2-CHLOROETHYL)ETHER	< 1. MCG/L
1,2-DIBROMO-3-CHLOROPROPANE	< 1. MCG/L
BROMOBENZENE	< 1. MCG/L
ORTHO-CHLOROTOLUENE	< 1. MCG/L
BIS(2-CHLOROISOPROPYL)ETHER	< 1. MCG/L
1,3-DICHLOROBENZENE	< 1. MCG/L
1,2-DICHLOROBENZENE	< 1. MCG/L
1,4-DICHLOROBENZENE	< 1. MCG/L

ANALYSIS: P5031 AROMATIC PURGEABLES EPA METHOD 503.1 (DES 310-22)
DATE REPORTED: 87/09/22 REPORT MAILED OUT

PARAMETER	RESULT
BENZENE	< 1. MCG/L
TOLUENE	< 1. MCG/L
ETHYLBENZENE	< 1. MCG/L
PARA-XYLENE	< 1. MCG/L
META-XYLENE	< 1. MCG/L
ORTHO-XYLENE	< 1. MCG/L
CUMENE	< 1. MCG/L
STYRENE	< 1. MCG/L
P-BROMOFLUOROBENZENE	< 1. MCG/L
N-PROPYLBENZENE	< 1. MCG/L
TERT-BUTYLBENZENE	< 1. MCG/L
O/P-CHLOROTOLUENE	< 1. MCG/L
META-CHLOROTOLUENE	< 1. MCG/L
1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
P-CYMENE	< 1. MCG/L
CYCLOPROPYLBENZENE	< 1. MCG/L
SEC-BUTYLBENZENE	< 1. MCG/L
N-BUTYLBENZENE	< 1. MCG/L
2,3-BENZOFURAN	< 1. MCG/L
HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
1,2,4-TRICHLOROBENZENE	< 5. MCG/L
NAPHTHALENE	< 5. MCG/L
1,2,3-TRICHLOROBENZENE	< 5. MCG/L

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 874280 SAMPLE RECEIVED:87/09/16/ CHARGE: 52.50
POLITICAL SUBDIVISION:SAUGERTIES COUNTY:ULSTER
LOCATION: SAUGERTIES LANDFILL 212 SAUGERTIES NY
TIME OF SAMPLING: 87/09/15 13:50 TO 87/09/15 14:10 DATE PRINTED:87/09/30

FOLLOWING PARAMETERS NOT PART OF TEST PATTERN

ANALYSIS: XPEST ORGANOCHLORINE PESTICIDES (DES 310-2)
DATE REPORTED: 87/09/22 REPORT MAILED OUT

PARAMETER	RESULT
HCH,ALPHA	< 0.04 MCG/L
HCH,BETA	< 0.04 MCG/L
HCH,GAMMA (LINDANE)	< 0.04 MCG/L
HCH,DELTA	< 0.04 MCG/L
HEPTACHLOR	< 0.05 MCG/L
ALDRIN	< 0.02 MCG/L
HEPTACHLOR EPOXIDE	< 0.05 MCG/L
ENDOSULFAN I	< 0.05 MCG/L
DDE -PARA, PARA	< 0.05 MCG/L
DIELDRIN	< 0.02 MCG/L
ENDRIN	< 0.02 MCG/L
DDD -PARA, PARA	< 0.05 MCG/L
ENDOSULFAN II	< 0.05 MCG/L
ENDRIN ALDEHYDE	< 0.02 MCG/L
ENDOSULFAN SULFATE	< 0.05 MCG/L
DDT -PARA, PARA	< 0.05 MCG/L
METHOXYCHLOR	< 1.0 MCG/L
TOXAPHENE	< 1.0 MCG/L
CHLORDANE	< 0.1 MCG/L
MIREX	< 0.05 MCG/L

ANALYSIS: 625A ACIDS - E.P.A. METHOD 625 (DES 310-8)
DATE REPORTED: 87/09/30 REPORT MAILED OUT

PARAMETER	RESULT
PHENOL	< 10. MCG/L
2-CHLOROPHENOL	< 10. MCG/L
2-NITROPHENOL	< 10. MCG/L
2,4-DIMETHYLPHENOL	< 10. MCG/L
2,4-DICHLOROPHENOL	< 10. MCG/L
4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
2,4,6-TRICHLOROPHENOL	< 10. MCG/L
2,4,5-TRICHLOROPHENOL	< 10. MCG/L
2,4-DINITROPHENOL	< 10. MCG/L
4-NITROPHENOL	< 10. MCG/L
2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
PENTACHLOROPHENOL	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 4 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 874280 SAMPLE RECEIVED:87/09/16/ CHARGE: 52.50
POLITICAL SUBDIVISION:SAUGERTIES COUNTY:ULSTER
LOCATION: SAUGERTIES LANDFILL 212 SAUGERTIES NY
TIME OF SAMPLING: 87/09/15 13:50 TO 87/09/15 14:10 DATE PRINTED:87/09/30

ANALYSIS: 625BN BASE/NEUTRALS - E.P. METHOD 625 (DES 310-8)
DATE REPORTED: 87/09/30 REPORT MAILED OUT

PARAMETER	RESULT
N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
HEXACHLOROETHANE	< 10. MCG/L
NITROBENZENE	< 10. MCG/L
ISOPHORONE	< 10. MCG/L
BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
HEXACHLOROCYCLOPENTADIENE (C-5o)	< 10. MCG/L
2-CHLORONAPHTHALENE	< 10. MCG/L
2,6-DINITROTOLUENE	< 10. MCG/L
ACENAPHTHYLENE	< 10. MCG/L
DIMETHYLPHTHALATE	< 10. MCG/L
ACENAPHTHENE	< 10. MCG/L
2,4-DINITROTOLUENE	< 10. MCG/L
DIETHYLPHTHALATE	< 10. MCG/L
FLUORENE	< 10. MCG/L
N-NITROSODIPHENYLAMINE	< 10. MCG/L
1,2-DIPHENYLHYDRAZINE	< 10. MCG/L
4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L
HEXACHLOROBENZENE	< 10. MCG/L
PHENANTHRENE	< 10. MCG/L
ANTHRACENE	< 10. MCG/L
DI-N-BUTYLPHTHALATE	< 10. MCG/L
FLUORANTHENE	< 10. MCG/L
PYRENE	< 10. MCG/L
BENZIDINE	< 30. MCG/L
BUTYL BENZYL PHTHALATE	< 30. MCG/L
BENZO(A)ANTHRACENE	< 30. MCG/L
3,3'-DICHLOROBENZIDINE	< 30. MCG/L
CHRYSENE	< 30. MCG/L
BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L
DI-N-OCTYL PHTHALATE	< 30. MCG/L
BENZO(B)FLUORANTHENE	< 30. MCG/L
BENZO(K)FLUORANTHENE	< 30. MCG/L
BENZO(A)PYRENE	< 30. MCG/L
INDENO(1,2,3-CD)PYRENE	< 30. MCG/L
DIBENZO(A,H)ANTHRACENE	< 30. MCG/L
BENZO(GHI)PERYLENE	< 30. MCG/L

ANALYSIS: PCBW PCB'S IN WATER (DES 310-2)
DATE REPORTED: 87/09/24 REPORT MAILED OUT

PARAMETER	RESULT
PCB,AROCLOR 1221	< 0.05 MCG/L
PCB,AROCLOR 1016/1242	< 0.05 MCG/L
PCB,AROCLOR 1248	< 0.05 MCG/L
PCB,AROCLOR 1254	< 0.05 MCG/L

**** CONTINUED ON NEXT PAGE ****

0405

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 5 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 874280 SAMPLE RECEIVED:87/09/16/ CHARGE: 52.50
POLITICAL SUBDIVISION:SAUGERTIES COUNTY:ULSTER
LOCATION: SAUGERTIES LANDFILL 212 SAUGERTIES NY
TIME OF SAMPLING: 87/09/15 13:50 TO 97/09/15 14:10 DATE PRINTED:87/09/30

PARAMETER	RESULT
PCB,AROCLOR 1260	< 0.05 MCG/L

ANALYSIS: KET KETONES - PURGE & TRAP TECHNIQUE (DES 310-25)
DATE PRINTED: 87/09/30 FINAL REPORT

PARAMETER	RESULT
METHYL ETHYL KETONE	< 10. MCG/L
METHYL ISOBUTYL KETONE	< 10. MCG/L
ACETONE	< 10. MCG/L

FOLLOWING PARAMETERS NOT PART OF TEST PATTERN

ANALYSIS: AMA NITROGEN CONTAINING PESTICIDES (DES 310-23)
DATE REPORTED: 87/09/24 REPORT MAILED OUT

PARAMETER	RESULT
EPTC (Eptam)	< 1. MCG/L
BUTYLATE (Sutan)	< 1. MCG/L
TRIFLURALIN	< 1. MCG/L
ATRAZINE	< 1. MCG/L
DIAZINON (Spectracide)	< 1. MCG/L
ALACHLOR (Lasso)	< 1. MCG/L
METOACHLOR (Dual)	< 1. MCG/L
CHLORPYRIFOS (Dursban)	< 1. MCG/L
MALATHION	< 1. MCG/L
CYANAZINE (Bladex)	< 1. MCG/L
AZINPHOS-METHYL (Gutnion)	< 1. MCG/L
ISOFENPHOS (Oftanol)	< 1. MCG/L

**** END OF REPORT ****

D.17

Telephone Conversation Record

Date: June 16, 1989

Time: 10:00 AM

Call by: Alex Kostic (Name) of Gibbs & Hill, Inc. (Company)

Answer by: Gloria Shovel (Name) Town Supervisor of Town of Saugerties (Company)

Contract No: 5583-107

Subject discussed: Saugerties Landfill Dumping

SUMMARY OF DISCUSSION, DECISIONS AND COMMITMENTS

Mrs. E. Shovel informed me that in 1969 a manufacturer of glossy paper reportedly dumped a few drums at the old landfill area that held inks containing toluene. There is no documentation of such a dumping. She thinks that these drums were dumped in the Village of Woodstock Landfill which was in operation at that time.

AK:aaf

D.18

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE 1 INVESTIGATION
Town of Saugerties Landfill
Site No. 356003
Town of Saugerties, Ulster County
Final - June 1987

RECEIVED
SEP 23 1987
BUREAU OF
HAZARDOUS SITE CONTROL
DIVISION OF HAZARDOUS
WASTE REMEDIATION

New York State
Department of
Environmental Conservation

50 Wolf Road, Albany, New York 12233
Henry G. Williams, Commissioner

Division of Solid and Hazardous Waste
Norman H. Nosenchuck, P.E., Director

Prepared by:

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

D-87

Gibbs & Hill, Inc. *Interoffice Memorandum*

TO: Norman Hinsey

DATE: August 14, 1989

FROM: Michael Valentino

JOB NO: 5583-107

SUBJECT: Saugerties Landfill
Groundwater Flow

REF. NO:

Mr. Shovel and a local well driller stated that groundwater in the vicinity of the Saugerties Landfill flows north in the same direction as the shale bed dip.

MV:aaf

D. 20

LEACHATE FROM MUNICIPAL LANDFILLS

Production and Management

by

James C.S. Lu
Bert Eichenberger
Robert J. Stearns

Calscience Research, Inc.
Huntington Beach, California

np NOYES PUBLICATIONS
Park Ridge, New Jersey, U.S.A.

D-89

TABLE C-1. MUNICIPAL LANDFILL LEACHATE COMPOSITION
(Values in mg/l except as noted)

Researcher	Fuller (1978)	W.E.S. (1978) Landfill A	W.E.S. (1978) Landfill B	W.E.S. (1978) Landfill C
Age of Refuse	5 months	15 years	4 years	3 years
Type of Study	Laboratory	Landfill	Landfill	Landfill
Constituents				
COD	150-500			
BOD_5				
TOC		21-50	22-148	16-208
pH (pH unit)	5.5-6.3			
E_h (millivolts)				
TS				
TDS				
TSS				
VSS				
FVS				
FS				
Sp. Cond. (µmhos/cm)	2,100-2,300			
Alk. as $CaCO_3$				
Hard. as $CaCO_3$				
Total P	6.3-7.9			
o-P				
PO_4 -inor.				
NH_3-N	70-190			
NO_3+NO_2-N		.05-.47	0.03-0.15	0.03-0.05
Org.-N				
TKN				
Ca	90-275	34-127	170-210	10-37
Mg		17-48.5	6.8-130	4.4-56
Na		20-72	33-75	6.7-220
K	150-950			
SO_4		23-47	44-240	8-24
Cl	93-3,900	5	<5-12	5-415
Fe (total)	48-120	3.5-18.6	0.2-20	0.08-18.20
Mn "	0.6-1.8	3-5	1-11.3	0.19-12.30
Zn "	0.1-3.4	0.24-1.36	0.03-0.7	0.06-2.73
Cu "	N.D.	<0.02	<0.02	<0.02
Cd "	N.D.	<0.03	<0.03	<0.03
Pb "	N.D.	<0.1	<0.1	0.14-0.37
Hg "	N.D.	<0.0002	<0.0003	0.0012-0.0018
Se "		<0.002	0.004-0.007	<0.02
Cr "	N.D.	<0.03	0.04	<0.03
Ni "	N.D.	0.04-0.13	0.53-0.63	0.07-1.61
Turb. (Jackson units)				

TABLE C-1. MUNICIPAL LANDFILL LEACHATE COMPOSITION
(Values in mg/l except as noted)

Researcher	Rovers and Farquhar (1973)	SCS Engineers (1976) Site A	SCS Engineers (1976) Site B	SCS Engineers (1976) Site C
Age of Refuse	1 year	Active	Active	Active
Type of Study	FTC	Landfill	Landfill	Landfill
Constituents				
COD	0-44,000	2,251-30,933	79-420	9,690-25,634
BOD_5		1,410-17,400	5-48	3,533-18,150
TOC		920-12,300	40-63	5,100-7,300
pH (pH unit)	5.3-11.5	5.37-6.11	5.34-7.10	5.54-6.7
E_h (millivolts)				
TS				
TDS	0-17,300	1,723-34,924	1,352-1,531	7,040-11,696
TSS		110-910	19-65	
VSS				
TVS				
FS				
Sp. Cond. (µmhos/cm)		1,350-13,500	2,050-2,335	5,750-9,600
Alk. as $CaCO_3$	2,000-8,000			
Hard. as $CaCO_3$		389-3,790	316-1,250	2,350-4,300
Total P				
o-P				
PO_4-inor.		0.2-15	0.05-11	0.47-16
NH_4-N	0-650	1.7-693	1.1-693	1.2-36
NO_3+NO_2-N		0.03-12	0.07-11	0.031-11
Org.-N	0-550			
TKN		61-752	5-31	34-57
Ca	0-2,800	162-1,705	105-251	1,505-2,113
Mg	0-600	37-324	68-158	282-372
Na	0-900	50-652	69-110	340-700
K				
SO_4		90-620	80-165	1-140
Cl	0-1,300	60-390	1-200	8-647
Fe (total)	0-300	74-1,126	0.8-120	111-1,300
Mn "	0-25			
Zn "		1.2-33	0.7-4.8	0.88-47
Cu "		0.01-1.13	0.01-0.38	0.01-2.75
Cd "		0.001-0.012	0.001-0.01	0.001-0.36
Pb "		0.06-0.32	0.04-0.16	0.19-0.60
Hg "		0.001-0.008	0.001-0.32	0.001-0.009
Se "		0.005-0.10	0.001-0.11	0.008-0.3
Cr "		0.025-2.04	0.001-0.19	0.01-0.46
Ni "		0.2-0.7	0.06-0.27	0.22-1.09
Turb. (Jackson units)				

TABLE C-1. MUNICIPAL LANDFILL LEACHATE COMPOSITION
(Values in mg/l except as noted)

Researcher	Rovers and Farquhar (1973)	SCS Engineers (1976) Site A	SCS Engineers (1976) Site B	SCS Engineers (1976) Site C
Age of Refuse	1 year	Active	Active	Active
Type of Study	FTC	Landfill	Landfill	Landfill
Constituents				
COD	0-44,000	2,251-30,933	79-420	9,590-25,634
BOD_5		1,410-17,400	5-48	3,333-18,150
TOC		920-12,300	40-63	5,100-7,300
pH (pH unit)	5.3-11.5	5.37-6.11	5.34-7.10	5.54-6.7
E_h (millivolts)				
TS				
TDS	0-17,300	1,723-34,924	1,352-1,531	7,040-11,696
TSS		110-910	19-65	
VSS				
TVS				
FS				
Sp. Cond. (µmnos/cm)		1,350-13,500	2,050-2,335	5,750-9,600
Alk. as $CaCO_3$	2,000-8,000			
Hard. as $CaCO_3$		589-3,790	316-1,250	2,950-4,300
Total P				
o-P				
PO_4-inor.		0.2-15	0.05-11	0.47-16
NH_4-N	0-650	1.7-693	1.1-693	1.2-36
NO_3+NO_2-N		0.03-12	0.07-11	0.031-11
Org.-N	0-550			
TKN		61-752	5-31	34-57
Ca	0-2,800	162-1,705	105-251	1,505-2,113
Mg	0-600	37-324	68-158	282-372
Na	0-900	50-652	69-110	340-700
K				
SO_4		90-620	80-165	1-140
Cl	0-1,300	60-390	1-200	8-647
Fe (total)	0-300	74-1,126	0.8-120	111-1,300
Mn "	0-25			
Zn "		1.2-33	0.7-4.8	0.88-47
Cu "		0.01-1.13	0.01-0.38	0.01-2.75
Cd "		0.001-0.012	0.001-0.01	0.001-0.36
Pb "		0.06-0.32	0.04-0.16	0.19-0.60
Hg "		0.001-0.008	0.001-0.32	0.001-0.009
Se "		0.005-0.10	0.001-0.11	0.008-0.3
Cr "		0.025-2.04	0.001-0.19	0.01-0.46
Ni "		0.2-0.7	0.06-0.27	0.22-1.09
Turb. (Jackson units)				

TABLE C-1. MUNICIPAL LANDFILL LEACHATE COMPOSITION
(Values in mg/l except as noted)

Researcher	SCS Engineers (1976) Site D	SCS Engineers (1976) Site E	Emrich and Landon (1969)	Emrich and Landon (1969)
Age of Refuse	2 years	Active	initial	3 years
Type of Study	Landfill	Landfill	Landfill	Landfill
Constituents				
COD	7,550-17,554	845-8,569	750,000	
BOD_5	3,960-15,300	104-2,300	720,000	
TOC	5,040-5,500	740-760		
pH (pH unit)	5.3-6.65	5.75-8.42		
Eh (millivolts)				
TS				
TDS	4,120-9,507	3,443-7,608		11,254
TSS	50-642	44-479		
VSS				
TVS				
FS				
Sp. Cond. (μmhos/cm)	3,730-8,300	2,350-10,080		
Alk. as $CaCO_3$				
Hard. as $CaCO_3$	1,400-2,920	480-3,023		8,700
Total P				
o-P				
PO_4-inor.	0.3-25	0.41-11		
NH_4-N	0.80-148	380-739		
NO_3+NO_2-N	0.047-12	0.24-27.24		
Org.-N				
TKN	94-210	16-936		
Ca	220-620	98-120		
Mg	171-224	96-104		
Na	162-662	750-1,130		
K				
SO_4	10-85			940
Cl	66-475	4-874	2,000	1,000
Fe (total)	18-1,550	4.4-35	1,000	
Mn "				
Zn "	0.53-28.2	0.32-27		
Cu "	0.01-0.65	0.016-0.48		
Cd "	0.001-0.07	0.004-0.01		
Pb "	0.17-0.31	0.02-0.33		
Hg "	0.001-0.06	0.0003-0.16		
Se "	0.01-0.33	0.002-0.21		
Cr "	0.05-0.29	0.06-0.13		
Ni "	0.07-0.56	0.08-0.21		
Turb. (Jackson units)				

TABLE C-1. MUNICIPAL LANDFILL LEACHATE COMPOSITION
(Values in mg/l except as noted)

Researcher	SCS Engineers (1978) Site 1	SCS Engineers (1978) Site 2	SCS Engineers (1978) Site 5	SCS Engineers (1978) Site 6
Age of Refuse	7 years	20 years	50 years	20 years
Type of Study	Landfill	Landfill	Landfill	Landfill
Constituents				
COD	7789	723	1198	4792
BOD_5				
TOC	3440	315	420	3000
pH (pH unit)	5.8	8.2		
Eh (millivolts)				
TS				
TDS				
TSS				
VSS				
FVS				
FS				
Sp. Cond. (µmhos/cm)				
Alk. as $CaCO_3$				
Hard. as $CaCO_3$				
Total P				
o-P				
PO_4- inor.				
NH_4-N	111	11.1	3	62
NO_3-NO_2-N	< 0.4	< 0.4	<0.1	1
Org.-N				
TKN	132	124	12	78
Ca	1375	6	96	103
Mg				
Na				
K				
SO_4	220	170	183	120
Cl	270	72	47	96
Fe (total)	0.86	4.20	30	2
Mn "				
Zn "				
Cu "	< 0.20	< 0.20	0.50	< 0.20
Cd "	< 0.03	< 0.03	< 0.01	< 0.01
Pb "	< 0.20	0.4	0.2	< 0.2
Hg "	0.005	0.005	0.002	0.140
Se "				
Cr "	< 0.30	< 0.30	1.80	< 0.20
Ni "				
Turb. (Jackson units)				

TABLE C-1. MUNICIPAL LANDFILL LEACHATE COMPOSITION
(Values in mg/l except as noted)

Researcher	County of Los Angeles	Zenone et al. (1974) Elmendorf	SCS Engineers (1978) Site 7	Summary Range of Values
Age of Refuse	n.i.	13 years	25-30 years	
Type of Study	Landfill	Landfill	Landfill	
Constituents				
COD			3631	0-750,000
BOD_5				6-57,300
TOC		0	1300	6.3-27,700
pH (pH unit)	3.2	7.1 -7.6		3.7-11.5
Eh (millivolts)				-132-8,602
TS				0-59,200
TDS	2,000			0-44,300
TSS				10-1,243
VSS				25-602
TVS				1,270-32,250
FS				
Sp. Cond. (umhos/cm)				960-16,300
Alk. as $CaCO_3$	1,290			0-20,350
Hard. as $CaCO_3$	537			0-22,300
Total P		0.0-0.1		0-38
o-P		0		0-85
PO_4-inor.				0-154
NH_4-N		0	160	0-1,106
NO_3+NO_2-N	78	0.29-0.32	< 1	0-27.2
Org.-N		0.08-0.09		0-1,416
TKN			175	0-936
Ca	72	17-20	118	0-7,200
Mg	87	2.6-3.2		0-15,600
Na	600	3		0-7,700
K		0.3-0.4		2.3-3,770
SO_4	99	18-19	55	0-1,558
Cl	300	1.0-1.3	406(120)	0-3,900
Fe (total)	219	0-50	76	0-5,500
Mn "				0-50
Zn "		10		0-370
Cu "			5.00	0-9.9
Cd "		0	0.04	0-0.375
Pb "			2.08	0-2.0
Hg "			0.002	0-0.16
Se "		0-14		0-2.7
Cr "		0	1.19	0.01-18
Ni "				0.04-13.0
Turb. (Jackson units)				

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: 356003
EPA ID: NYD980507636

NAME OF SITE: Saugerties Town Landfill
STREET ADDRESS: State Route 212
TOWN/CITY: Saugerties COUNTY: Ulster ZIP: 12477

SITE TYPE: Open Dump ___ Structure ___ Lagoon ___
Landfill _X_ Treatment Pond ___

ESTIMATED SIZE: 15 acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME: Town of Saugerties
CURRENT OWNER ADDRESS: Main Street, Saugerties, New York 12477
OWNER(S) DURING USE:
OPERATOR DURING USE: Town of Saugerties
OPERATOR ADDRESS: Main Street, Saugerties, New York 12477
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1970 to 1979

SITE DESCRIPTION:

The site is a 15-acre active municipal landfill which has been active since 1970. The original, inactive dump site area reportedly received approximately 750 tons of grinding swarf (unknown content), 350 tons of grinding swarf (95+ percent iron oxide with water and oil), and 55 cubic yards of wastewater treatment sludges (high in iron, zinc, oxide, and manganese oxide) per year. The original dump site is presently covered with soil. Currently, the town is using the southern section of the site to dispose refuse generated in the incorporated part of the Town of Saugerties. The landfill was issued a New York State permit in March 1979 under which it is not allowed to accept hazardous industrial wastes or septic sludges.

RECOMMEND:
HAZARDOUS WASTE DISPOSED: Confirmed ___ Suspected _X_

TYPE	QUANTITY (units)
Unknown	Unknonw

ANALYTICAL DATA AVAILABLE:

Air ___ Surface Water _X_ Groundwater _X_ Sediment _X_

Soil ___ Leachate ___ None ___

CONTRAVENTION OF STANDARDS:

Groundwater ___ Drinking Water _X_ Surface Water _X_ Air ___

LEGAL ACTION:

TYPE: None State ___ Federal ___
STATUS: Negotiations In Progress ___ Order Signed ___

REMEDIAL ACTION:

Proposed ___ Under Design ___ In Progress Completed ___

NATURE OF ACTION:

GEOTECHNICAL INFORMATION:
SOIL TYPE:
GROUNDWATER DEPTH:

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

The Phase II investigation has been completed in March 1990. There is no release of organic contaminants in the groundwater and surface water. Principal TCL metals found in high elevations in the samples are iron and manganese.

ASSESSMENT OF HEALTH PROBLEMS:

Medium	Contaminants Available	Migration Potential	Potentially Exposed Population	Need for Investigatio
Air	Likely	Unlikely	Yes	Medium
Surface Soil	Likely	Unlikely	Yes	Low
Groundwater	Likely	Unlikely	Yes	Medium
Surface Water	Unlikely	Likely	No	Low

HEALTH DEPARTMENT SITE INSPECTION DATE: 11/85

MUNICIPAL WASTE ID: 56-S-19#