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USEPA CONTRACT NO. 68-W8-0110
FOSTER WHEELER ENVIRONMENTAL CORPORATION
ARCS II PROGRAM

FINAL
SITE INSPECTION PRIORITIZATION (SIP)
GLENS FALLS LANDFILL
TOWN OF QUEENSBURY
WARREN COUNTY, NEW YORK
CERCLIS NO.: NYD980506620

APRIL 1996

VOLUME II OF III

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REFERENCE NO. 13

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

Glens Falls Landfill **Site No. 557003**
Queensbury (T) **Warren County**

DATE: February 1987

Prepared for:
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*

By:

Recra Environmental, Inc.

PRELIMINARY ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK

PHASE II INVESTIGATIONS

GLENS FALLS LANDFILL
Site #557003
Queensbury, Warren County

Prepared For:

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March 1987

GLENS FALLS LANDFILL
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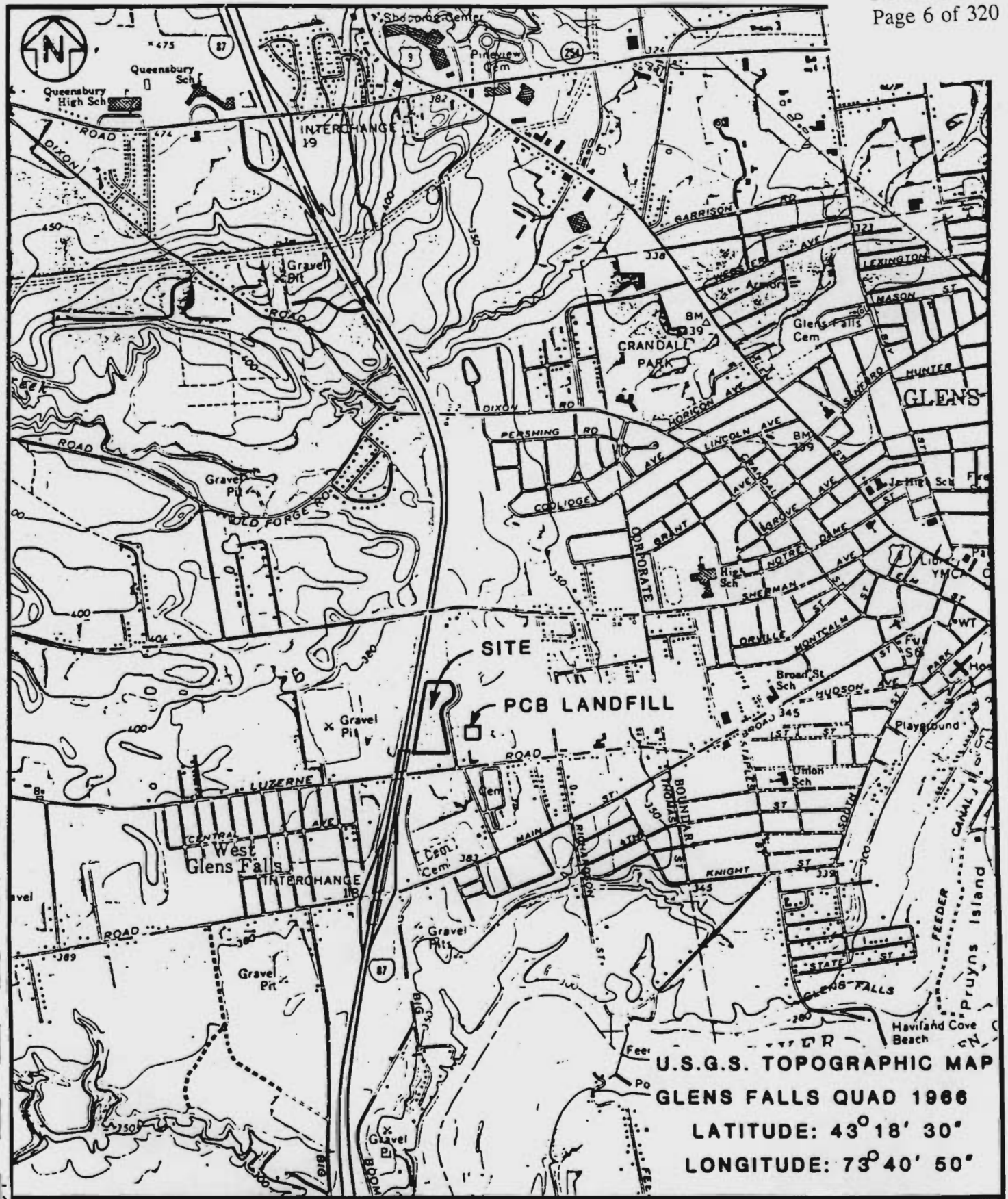
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1.0 EXECUTIVE SUMMARY

The Glens Falls Landfill is located on Luzerne Road adjacent to U.S. Interstate 87, Glens Falls, Warren County, New York (Figures 1 and 2). The site and much of the adjacent property, is owned by the City of Glens Falls. The area surrounding the site is moderately populated with private residences and commercial properties located within 500 feet of the site. Access to the site is partially restricted by a fence which runs along the property front on Luzerne Road and for a short distance on the southeast side of the property. The fence primarily controls the access of trucks to a municipal waste transfer station located in the southern portion of the site. The site is frequently used by local residents for motorcycle riding.

During the years of active operation, 1961 to 1977, the 14-acre landfill area was used primarily for disposal of municipal refuse. However, the site may have also received a quantity of PCB bearing capacitors. The only reported waste other than municipal refuse were Ink Sludges, 5.0 tons, from Valcour Imprinted Paper, Inc. (1984, Right to Know).

An additional concern in the site area is the presence of a secure PCB landfill located adjacent to the east side of the Glens Falls Landfill. Prior to construction of the secure landfill, much of the surrounding land was found to be highly contaminated with PCB's. This is currently referred to as the Alkes facility. Reportedly, private haulers and individuals disposed of PCB oils, PCB bearing capacitors, and scrap from capacitor salvaging operations. Following discovery of PCB contamination in the area, the contaminated soil, capacitors and scrap was excavated



U.S.G.S. TOPOGRAPHIC MAP
GLENS FALLS QUAD 1966
LATITUDE: 43° 18' 30"
LONGITUDE: 73° 40' 50"

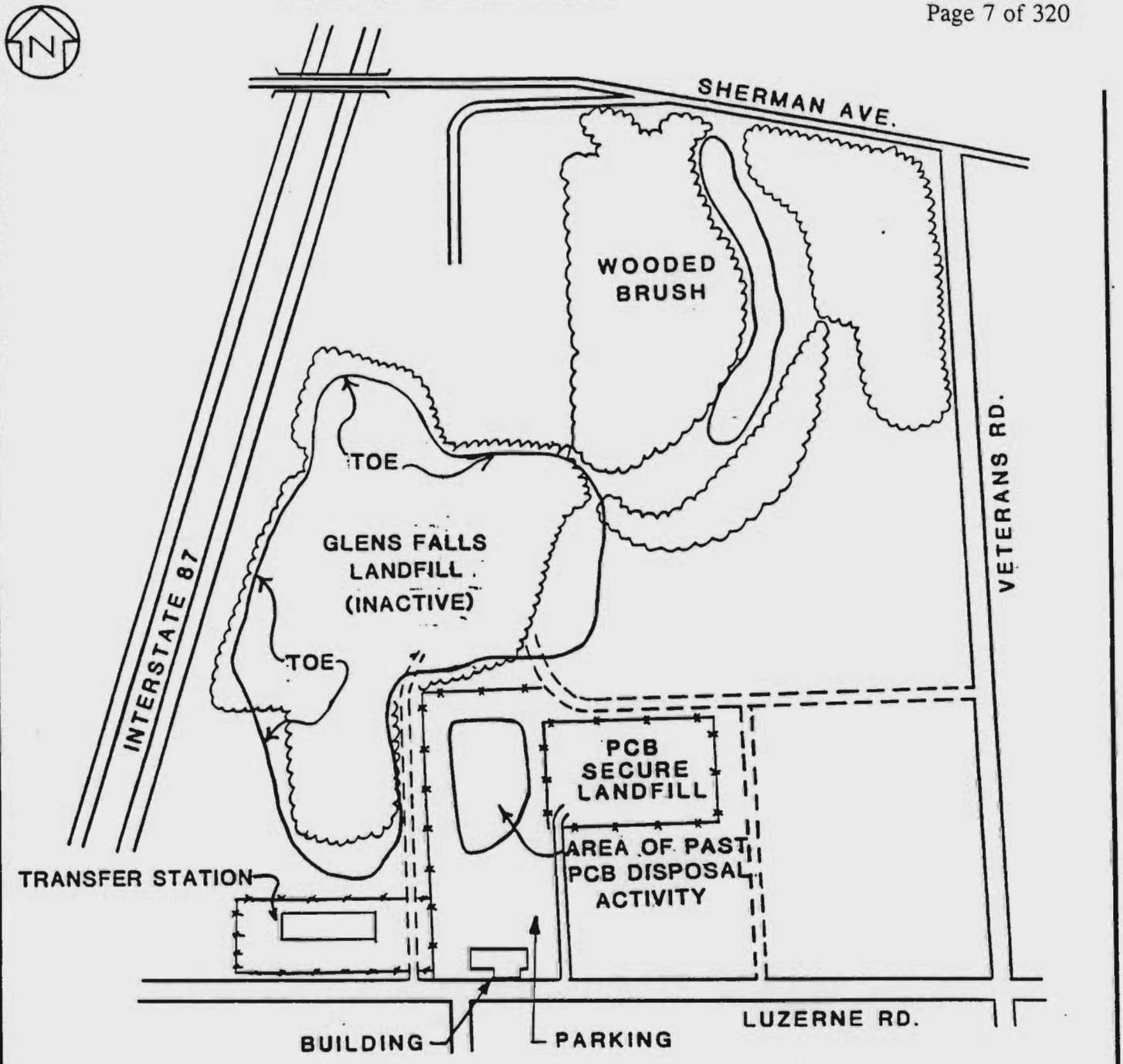
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	By	Date
Dwn.	DLS	3/86
Ckd.	SSN	3/87
Ap'vd.	PFA	3/87
Rev.		

GLENS FALLS LANDFILL
GLENS FALLS, N.Y.
N.Y.S. SUPERFUND
PHASE II

Project No. 5C280101

VICINITY MAP

A | FIGURE 1



Scale: NTS			GLENS FALLS LANDFILL GLENS FALLS N.Y. N.Y.S. SUPERFUND PHASE II
	By	Date	
Dwn.	MJS	3/86	
Ckd.	SSN	7/86	
Ap'vd.	DFA	7/86	
Rev.	SSN	2/87	
Project No. 5C280101			A FIGURE 2

SITE MAP

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and placed in the one-acre secure landfill. The PCB landfill has been considered separately from the Glens Falls Landfill.

Phase II investigation activities involved expanding the information required for completing the Hazard Ranking System (HRS) score for assessing preliminary remedial alternatives. The Phase II activities, conducted by Recra Environmental, Inc. (Recra), included:

- o screening of on-site air quality;
- o geophysical exploration;
- o exploratory boring and monitoring well installation;
- o groundwater, surface sediment and soil sampling and analysis, site surveying, and an evaluation of all Phase II and previously existing data for development of remedial options and associated cost estimates was conducted by URS Company, Inc.

Analytical results from groundwater, soil, and sediment samples obtained from the Glens Falls site have identified detectable concentrations of several heavy metals and PCBs. From a review of the groundwater data, a significant release of PCBs to the shallow groundwater system exists. However, due to limited data available, it is difficult to discern whether PCB contamination may be attributed to the landfill or to residual contamination from past disposal activities carried out in the vicinity.

It is therefore suggested that in order to delineate between the presence and/or release of hazardous substances as a result of the Glens Falls Landfill, the "secure" PCB disposal cell, and/or the PCB contaminated

soil region (Alkes facility), additional monitoring wells be installed in the vicinity of the above mentioned locations. Additional surficial soil samples should also be obtained from the landfill proper utilizing a hand auger. The analytical data obtained from these samples will aid in assessing site conditions.

A Phase I study of the site was conducted under the auspices of NYSDEC in 1983. The preliminary Hazard Ranking Score (HRS) as determined during the Phase I investigation indicated a migration potential (Sm) equal to 1.0 (Sgw=1.2, Ssw=0.5, Sa=0). Results of this Phase II investigation have determined a migration potential score (Sm) of 16.38 (Sgw = 28.34, Ssw = 0, Sa = 0), Fire and Explosion Score (S_{FE}) of 0, and a Direct Contact Score (S_{DC}) of 0.

2.0 PURPOSE/OBJECTIVES

A NYSDEC approved Phase II Work Plan was developed to address the data inadequacies which were itemized in Section 6.0 of the Phase I Investigation Report. The data inadequacies are as follows:

- o Lack of information regarding type and quantity of materials disposed of at the site.
- o Lack of analytical data regarding groundwater, surface water, and soil quality in the area.
- o Depth of landfilling is unknown.
- o Information regarding specific on-site geology and hydrogeology is insufficient.
- o Use of groundwater in the area is unknown.
- o No air quality data.

Implementation of the work plan, to the extent possible, provided information to assist in the determination of: 1) the environmental effects of the disposal area, 2) the immediate extent and magnitude of contamination based on site specific hydrogeological characteristics and analytical results, and 3) recommendations for cost-effective preliminary remedial actions and/or further investigative considerations.

Phase II investigation is designed to supply the information necessary to address the data inadequacies identified from the Phase I Investigation Report. A more detailed investigative effort may be necessary for the development of a remedial program recommended for the site.

3.0 SCOPE OF WORK

The primary objective of the Phase II investigation is: to obtain the information identified in the data inadequacies section of the Phase I Investigation Report; to provide a more complete site characterization/ranking (HRS); and to enable the development of preliminary engineering remedial alternatives. To facilitate these determinations, the Phase II field investigation utilized the following techniques:

- o Air Monitoring
- o Geophysical Exploration
- o Exploratory Borings
- o Monitoring Well Installation
- o Sampling and Analysis
- o Surveying

Throughout the investigative effort, field activities were performed in accordance with established safety protocol presented in Recra Research, Inc.'s, Operation Manual - Field and Analytical Services. This document was submitted to NYSDEC by Recra as part of the pre-qualifying submission for Phase I investigations.

Details of the specific items involved in the Phase II program are summarized in the following sections.

3.1 Air Monitoring

Prior to the implementation of the various field investigation activities, an initial screening of ambient air quality on site was conducted

using a Photovac (TIP) photoionizer. The photoionizer unit was maintained on site during all field activities. For initial screening purposes, the site was traversed and air quality readings were recorded at selected intervals and areas of interest. All readings recorded during air monitoring were below background levels and within acceptable limits for level D protective equipment measures. TIP measurements were also taken periodically during other field activities (see Section 3.3). Acceptable levels were also recorded during those measurements.

Additionally, during advancement of each subsurface boring, the possible presence of explosive gases was monitored using an explosimeter. At no time during drilling were explosive gases detected.

3.2 Geophysical Investigation

3.2.1 Introduction

The geophysical investigation performed at the Glens Falls Landfill employed two (2) geophysical techniques: terrain conductivity survey and seismic refraction. These techniques were selected to aid in the determination of the limits of the disposal area, the possibility and extent of groundwater contaminant plumes, and supplement data on the subsurface geology of the area.

A model EM-31, ground conductivity meter designed by Geonics Limited, was used to measure terrain conductivity of the study area. The EM-31 is a non-contact instrument that can measure the subsurface conductivity to an average depth of approximately 6 meters (18 feet). It measures the apparent conductivity of the ground in milliohms per meter and has a

noise level of <0.1 milliohms per meter. The EM-31 Terrain Conductivity Survey is valuable for obtaining information on areas made up of unknown materials and can also support other geophysical investigations that present common objectives. The instrument may be sensitive to underground conductors (i.e. metallic objects, large pipes, buried drums, etc.), and can also reflect lateral changes in the conductivity of materials in the subsurface.

The seismic refraction survey was conducted with a Bison Instruments Model 1570C single channel signal enhancing seismograph. The 1570C measures the waveform produced by a sixteen (16) pound sledge hammer at various distances from the geophone. The signal enhancing feature of this unit allows the user to build up a recognizable signal by repeated blows of the hammer to the earth. From this information the seismic velocity and depths of various layers of earth materials can be deduced, thereby aiding in the stratigraphic interpretation of the subsurface.

3.2.2 Methodologies

The terrain conductivity survey was performed by recording continuous and station by station conductivity measurements with an EM-31 Terrain Conductivity meter equipped with a strip chart recorder. Station readings were obtained at grid nodes along lines established by a grid system developed to collect data at equidistant locations on the sites. Two (2) readings were made at each station; 1) parallel EM-31 reading, and 2) perpendicular EM-31 reading. The parallel readings were recorded along the direction of the lines established by the grid layout while the perpendicular readings were obtained by rotating the measuring instrument

through an angle of 90°. The average of two (2) readings represent the conductivity value used for the data reduction. Two (2) conductivity readings were recorded in an attempt to resolve lateral heterogeneities of the materials underlying the sites. Continuous conductivity readings were obtained by traversing the grid layout with special attention directed towards areas where disposed wastes were evident. The field data was then reduced and the conductivity values were plotted and contoured to produce a conductivity map of the site. The maps and strip charts were then reviewed for necessary interpretation of the conductivity features displayed. The strip charts containing records of the continuous conductivity readings were also evaluated in order to provide additional information of the general interpretation of the data.

The seismic refraction survey consisted of four (4) forward and reverse seismic lines. The field data was then plotted on a time versus distance graph. From these graphs the velocity and depths of the various layers can be calculated using standard accepted methods.

3.2.3 Field Survey

One hundred and nine (109) pairs of Terrain Conductivity readings were recorded at stations established by an orthogonal grid system with spacings of fifty (50) feet between grid nodes. Geophysical site maps are presented in Appendix 1, Plates B and C and illustrate the position of the conductivity grid, continuous conductivity lines, resistivity soundings, seismic lines, and conductivity contours. Readings were taken at all stations that were accessible and are reported in Appendix 4. Three traverse lines of continuous conductivity, labeled line 1 through 3, were

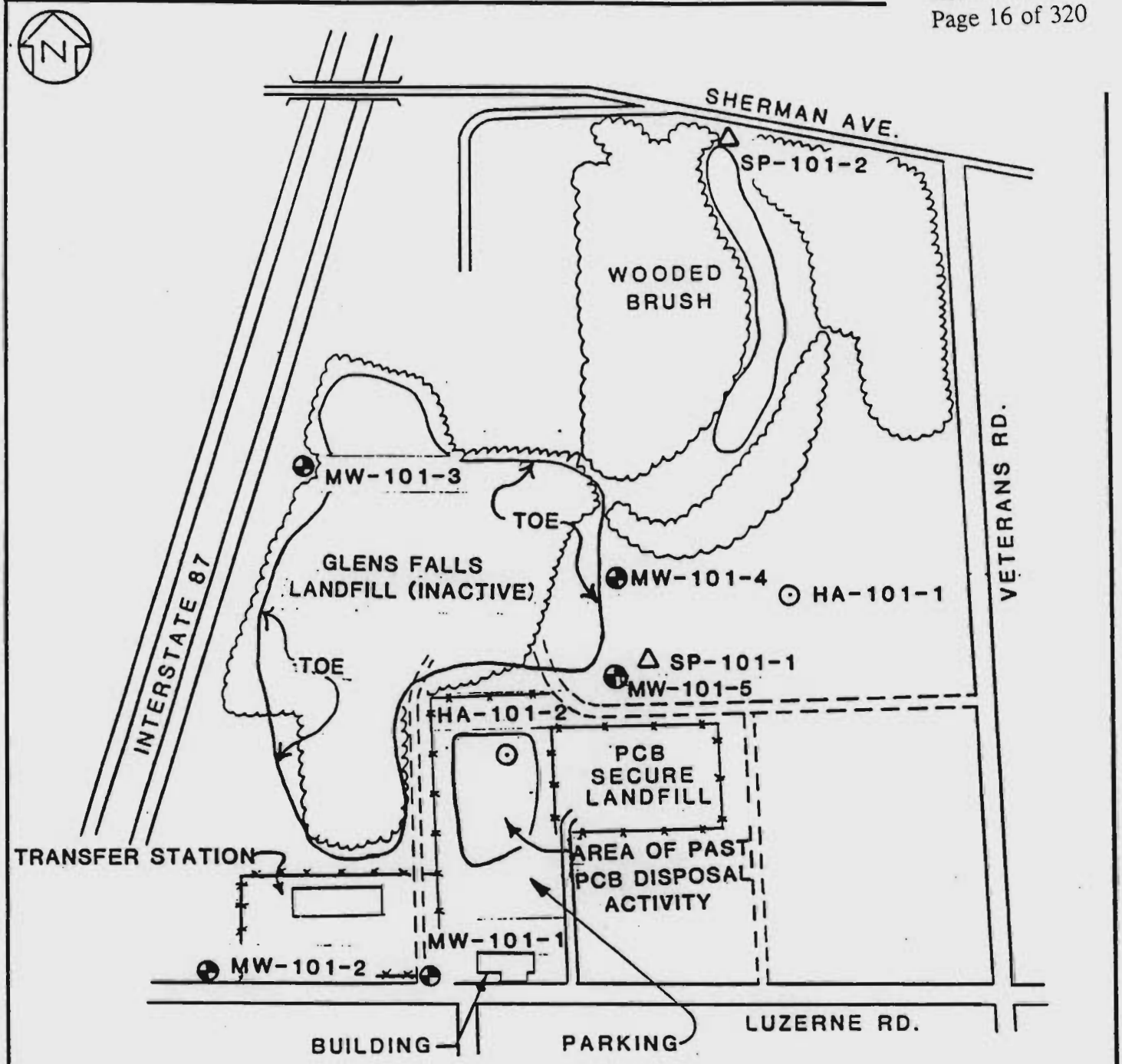
performed. The traverses were annotated and are presented in Appendix 1, Plate C.

3.3 Subsurface Investigation

The Phase II investigative program was designed and conducted to assess the impact of landfilling activities on the immediate site area. To facilitate this determination, five subsurface borings were advanced at the locations shown on Plate A in Appendix 1, with subsequent installation of shallow groundwater monitoring wells (MW101-1 through MW101-5). Boring and monitoring well locations were selected based upon interpretation of geophysical information and all other available data to insure optimum well placement. See Figure 3 for monitoring well and sampling locations.

Drilling activities began on July 11, 1985, in the southeastern portion of the site. This area was chosen for the upgradient background monitoring well (MW101-1) location based on existing information and site features. Following completion of MW101-1, the four additional borings (MW101-2 through MW101-5) were completed around the perimeter of the fill areas (see Plate A, Appendix 1).

The boring program was conducted during the period of July 11, 1985 through July 17, 1985, with the assistance of Drill & Test, Inc. of Orchard Park, New York. All borings were advanced with a CME-45C trailer-mounted-skid-drill rig using 4-1/4" I.D. continuous flight hollow stem augers. The entire back end of the drill rig and all drilling tools were decontaminated with high pressure steam prior to advancing each



LEGEND

- ⊙ HAND AUGER
- △ SURFACE WATER AND SEDIMENT SAMPLES
- ⊕ MONITORING WELL AND EXPLORATORY BORING

Scale: NTS			GLENS FALLS LANDFILL GLENS FALLS N.Y. N.Y.S. SUPERFUND PHASE II	MONITORING WELLS AND SAMPLING LOCATIONS
	By	Date		
Dwn.	MJS	3/86		
Ckd.	SSN	7/86		
Ap'vd.	PFA	7/86		
Rev.	SSN	2/87	Project No. 5C280101	A FIGURE 3

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IRUNING

boring. All borings were advanced into the first encountered water bearing zone which occurred at a depth of approximately 20 feet.

Representative soil samples were taken at every five (5) foot interval or when a change in lithology occurred at all borings by means of a split spoon sampler. Standard penetration measurements were recorded for each sampling attempt in accordance with ASTM D-1586. Soil samples were collected continuously within the water bearing zone of borings MW101-2 through MW101-5. Soils from the water bearing zone were evaluated for various geotechnical properties in an effort to characterize the natural unconsolidated materials in this zone.

All soil samples were collected into pre-cleaned 16 ounce glass jars, sealed with Teflon liners and screw-on caps. Samples selected for chemical analyses were relinquished by chain of custody to Recra's Environmental Laboratory (REL) in Tonawanda, New York, for analysis. Samples selected for geotechnical evaluation were relinquished by chain of custody to Recra's Geotechnical Laboratory for analyses. In addition, portions of samples MW101-4 (SS-2) and MW101-5 (SS-4) were shipped via Federal Express and relinquished by chain of custody to IT Corporation, Export, Pennsylvania, for priority pollutant analysis. All sampling tools were cleaned with soap and water and rinsed with distilled water, acetone, and again with distilled water prior to recovery of each sample.

Upon recovery, each sample was inspected for visual signs of contamination, characterized for material physical properties, monitored for volatile organic and explosive compounds and visually identified in general accordance with ASTM D-2488. Information on sample descriptions

and identification was entered on boring logs which are presented in Appendix 3. Information from the boring logs was then used to construct cross sections of the site area (Plate D, Appendix 2). More detailed descriptions of site specific geology and landfill characteristics are presented in Section 4.0.

3.4 Monitoring Well Installation

3.4.1 Well Construction

Each monitoring well was installed within the first encountered water bearing zone in order to evaluate shallow groundwater quality and allow a determination of localized groundwater flow directions.

Monitoring well construction utilized two inch I.D. Schedule 40 PVC riser pipe joined with a flush thread to a five foot section of 0.01 inch slotted Schedule 40 PVC well screen. A sand pack was placed in the annular space from the base of the boring up to at least two feet above the top of the screen section. A bentonite pellet seal, no less than 1.5 feet thick, was placed above the sand pack to prohibit downward migration of surface water. Cement/bentonite grout was placed in the annular space from the top of the bentonite seal to one foot below the ground surface. The remaining annular space was filled with concrete to the ground surface. Each well was then supplied with a steel protective casing and a hinged locking cap. All casings were vented to allow equilibration of static water levels with barometric pressure. The concrete was mounded around the protective steel casing at the ground surface to prohibit ponding of surface water around the well. Typical well construction

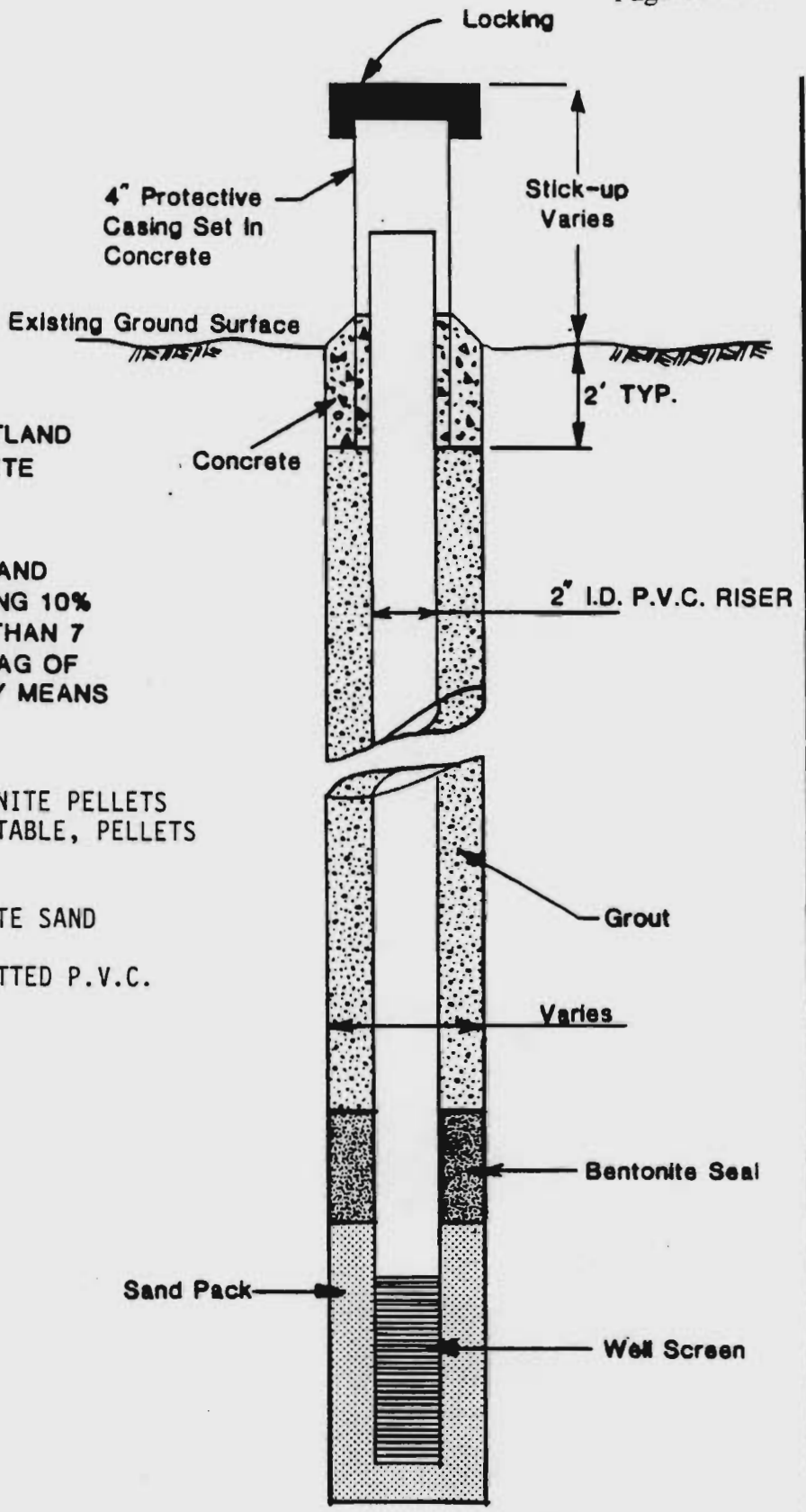
details are presented in Figure 4. Specific well construction details for each monitoring well are shown on the appropriate boring logs presented in Appendix 3.

3.4.2 Well Development

Monitoring wells MW101-1 through MW101-5 were developed by Recra Field Services personnel on August 27, 1985. Development was accomplished by using over-pumping methods using an ISCO model 1580 peristaltic pump and polyethylene tubing. The tubing was frequently moved up and down the well casing to disturb the water column and suspend any settled or attached particulate matter for removal by the pump. Discharged water was monitored for appearance, pH and specific conductance during the development process. Wells were considered sufficiently developed when the pH, specific conductance and water clarity stabilized. Details of well development activities are presented in Recra's Field Report Collection of Groundwater, Sediment and Soil Samples at Glens Falls Site, located in Appendix 5.

3.4.3 Permeability Testing

In-situ variable head permeability testing could not be performed on the newly installed monitoring wells at the Glens Falls Landfill due to rapid groundwater in-flow rates which precluded accurate water level measurements during testing. However, through the use of geotechncial data which describes the physical properties of the subsurface soils and an empirical correlation of the soil properties, a first order approximation of the magnitude of the permeability value has been calculated. This



NOTES:

(1) CONCRETE: SAND AND PORTLAND CEMENT MIXTURE OR SAKRETE PREPACKED MIX

(2) GROUT: MIXTURE OF PORTLAND CEMENT AND BENTONITE USING 10% BENTONITE AND NO MORE THAN 7 GALLONS OF WATER PER BAG OF CEMENT. GROUT PLACED BY MEANS OF TREMIE GROUTING.

(3) BENTONITE SEAL: ½" BENTONITE PELLETS TREMIED. IF ABOVE WATER TABLE, PELLETS WERE HYDRATED.

(4) SAND PACK: NO. 4 QUARTZITE SAND

(5) WELL SCREEN: 2" I.D. SLOTTED P.V.C. (0.01" SLOT)

Scale: NTS			GLENS FALLS LANDFILL N.Y.S. SUPERFUND PHASE II	TYPICAL MONITORING WELL IN UNCONSOLIDATED MATERIAL
	By	Date		
Dwn.	DLS	5/65		
Ckd.	JSN	3/87		
Ap'vd.	PFL	3/87		
Rev.			Project No. 5C280101	A FIGURE 4

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determination is applicable to loose sands having a high uniformity coefficient (Ref. 16). Using this approach, a first order of magnitude approximation was determined to be 10^{-2} cm/sec (see Permeability Calculations, Appendix 4).

3.5 Sampling and Analysis

The following subsections describe the procedures used for the sampling and subsequent analysis of groundwater from the newly installed wells and two private wells, selected soil samples from the subsurface investigation, and on-site soils and surface sediments.

3.5.1 Groundwater

Representative groundwater samples were collected following the evacuation of at least three times the volume of standing water within the wells. Evacuation of groundwater from the wells was accomplished with an ISCO Model 1580 Peristaltic Pump using dedicated low density polyethylene tubing for each well and changing the silicon rubber tubing within the ISCO pump between each well. Once the well had recovered, samples were obtained using a new pre-cleaned 1¼ inch O.D., five foot long PVC bailer with nylon rope. Samples were collected in general accordance with the protocols presented in the Test Methods for Evaluating Solid Waste (USEPA SE-846).

All samples obtained were placed in appropriate pre-cleaned bottles/septa vials, preserved, labelled, chilled, chain of custody initiated, and delivered to REL for analysis. Chain of custody was maintained until delivery to REL.

Field pH, temperature, and conductivity measurements were recorded at each well and are presented in Appendix 5, Table III.

Groundwater samples obtained from two domestic sources, Houses #21 and #23, were collected from outside faucets that were allowed to run for several minutes prior to sample collection. Each sample was collected directly into the appropriate pre-cleaned glass container, a chain of custody initiated, and transported to REL.

3.5.2 Soil

Subsurface soils were evaluated through the procurement of split spoon samples during boring activities. Soil samples were collected using a 2 foot long, 2 inch O.D. split spoon sampler that was driven with a 140 pound hammer falling 30 inches. While sampling, the soil penetration count for every 6 inches of drive were recorded. Sampling activities were carried out in general accordance with ASTM D-1586.

In addition, surface soils were collected in the vicinity of the site using a pre-cleaned, 3 inch stainless steel bucket hand auger in general accordance with the protocols presented in Test Methods for Evaluating Solid Waste (USEPA SW-846, April 1984).

All split spoons and hand auger equipment were cleaned with Liquinox soap, hexane, acetone, and rinsed thoroughly with deionized water prior to and between each sampling attempt.

Upon recovery, samples were placed in pre-cleaned, 16 ounce glass jars, labelled, chilled, and delivered to REL under chain of custody for sub-

sequent analysis. In addition, portions of samples MW101-4 (SS-2) and MW101-5 (SS-4), were shipped via Federal Express and relinquished by chain of custody to IT Corporation, Export, Pennsylvania, for priority pollutant analysis.

3.5.3 Surface Sediment

Surface sediment samples were collected from the drainage channel located to the northeast of the landfill area. Sediment samples were obtained using a pre-cleaned stainless steel trowel. The trowel was cleaned between each sampling point with Liquinox soap, hexane, acetone, and thoroughly rinsed with deionized water. The samples were collected directly into the appropriate pre-cleaned bottles, labelled, chilled, chain of custody initiated, and delivered to REL for analysis.

3.5.4 Chemical and Geotechnical Parameters

Chemical Parameters

Samples collected during the Phase II investigation for chemical analysis were evaluated for those parameters listed in Table 3-1. All parameters listed with the exception of the priority pollutant organics are referred to as standard parameters in the text.

All samples analyzed for standard parameters and priority pollutant organic analysis (required for groundwater samples) were performed at REL. Soil samples obtained from split spoon sampling for evaluation of priority pollutant organics were sent to IT Corporation's laboratory in Export, Pennsylvania.

TABLE 3-1

ANALYTICAL PARAMETERS

Glens Falls Landfill

Parameters	Surface Sediment	Groundwater	Soils
Number of Sample - This Site	2	7	7
pH	.	.	NA
Specific Conductance	.	.	NA
Chloride	.	.	NA
Sulfate	.	.	NA
Cyanide (Total)	.	.	NA
Total Organic Carbon	.	.	*
Cadmium	*	o	*
Chromium (Total)	*	o	*
Chromium (Hexavalent)	*	o	*
Copper	*	o	*
Iron	*	o	*
Lead	*	o	*
Mercury	*	o	*
Nickel	*	o	*
Silver	*	o	*
Zinc	*	o	*
Polychlorinated Biphenyls (PCB)	.	.	.
Volatile Halogenated Organic Scan (VHOS)	.	.	.
Halogenated Organic Scan (HOS-E)	.	.	.
Dry Weight	NA	NA	.
Priority Pollutant Organics plus library search includes Contract Laboratory Protocol specifications	.(1)	.(3)	.(2)

o = Soluble Metals
* = Total Metals

The priority pollutant constituents were determined via GC/MS analysis of volatiles by purge and trap and non-volatiles via GC/MS analysis of base/neutrals and acids extractables. At the time of analysis of each fraction (extract) the priority pollutant constituents were qualified and quantified in accordance with the method. Additionally, all non-priority pollutant peaks >10% of the nearest interval standard were examined and qualified using the >25,000 compound library contained within the system. Quantifications were based upon the nearest internal standard.

Geotechnical Parameters

The geotechnical parameters performed on select split spoon samples collected during boring advancement included:

- o moisture content
- o particle-size analysis
- o Atterburg limits
- o soil classification

All geotechnical evaluations were performed at Recra's Geotechnical Laboratory in Amherst, New York.

3.5.5 Chemical and Geotechnical Methodologies

Chemical Methods

The procedures utilized for chemical analyses of water and soil samples during this investigation were in basic accordance with one or more of the following reference texts:

8/3551

Methods for Chemical Analysis of Water and Wastes, United States Environmental Protection Agency.

Standard Methods for the Examination of Water and Wastewater, 14th Edition, APHA, AWWA, WPCF.

Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act (40 CFR 136)

- o Volatile Organics - Method 624
- o Base/Neutrals and Acids Extractables - Method 625
- o Organochlorine Pesticides and PCBs - Method 608

Test Methods for Evaluating Solid Wastes - SW-846, 2nd Edition

- o Volatile Organics - Method 8240
- o Base/Neutrals and Acids Extractables - Method 8270
- o Organochlorine Pesticides and PCBs - Method 8080

The Volatile Halogenated Organic Scan, VHOS, is based on U.S. Environmental Protection Agency Method 601 for Purgeable Halocarbons. This method is applicable in the determination of many hazardous volatile organic halogenated materials that are amenable to the purge and trap method. This method employs a Coulson's Modified Electrolytic Thermal Conductivity Detector.

The Halogenated Organic Scan-Electron Capture Detector, HOS-E, is based on U.S. Environmental Protection Agency Method 608 for Organochlorine Pesticides and PCBs. This method is applicable in the determination of the majority of the U.S. Environmental Protection Agency designated Priority Pollutant Pesticides, Polychlorinated Biphenyls, and many other halogenated organics. This method employs an electron capture detecotr (ECD) which is very sensitive to chlorinated compounds.

Geotechnical Methodologies

Soil samples received for geotechnical evaluation were prepared and tested in accordance with procedures from the American Society for Testing and Materials (ASTM), Annual Book of ASTM Standards: Section 4 Construction, Volume 04.08 Soil and Rock; Building Stones, c-1985. The following standard test methods were utilized in whole or in part:

- ASTM D 2216-80 Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures.
- ASTM D 421-58 Dry Preparation of Soil Samples for Particle Size Analysis and Determination of Soil Constants.
- ASTM D 1140-54 Amount of Material in Soils Finer than the No. 200 (0.075-mm) Seive.
- ASTM D 422-63 Particle-Size Analysis of Soils.
- ASTM D 4318-84 Liquid Limit, and Plasticity Index of Soils.
- ASTM D 2487-83 Classification of Soils for Engineering Purposes.

3.5.6 Quality Assurance Program

An overall Quality Assurance Program is essential for the production of high-quality analytical data. For the Quality Assurance Program in effect during sampling activities and at the laboratories of Recra, the reader is referred to a document previously submitted by Recra to NYSDEC entitled, "Operation Manual - Field and Analytical Services."

The following quality control information pertains specifically to analytical data presented in this report (Appendix 4). All samples were collected and maintained under chain of custody.

Each gas chromatography/mass spectrometry (GC/MS) data page includes quality control information including internal and surrogate standard levels and their respective recoveries for each sample. Surrogates were added to all samples prior to solvent extraction.

Specific quality control results are included in Appendix 4 concerning the following:

- o pesticide recoveries from method blanks
- o PCB recoveries from method blanks
- o benzene recovery from sample
- o volatile organic scan replicate from sample
- o metals and water quality replicates from various samples
- o metals and water quality recoveries from various samples

3.6 Surveying

Following completion of the subsurface investigation and sampling activities discussed in Sections 3.3 and 3.5, all monitoring wells and sampling station points were surveyed for elevations (mean sea level) and location by URS Company, Inc., of Buffalo, New York. Elevations were based on a brass rod benchmark set in the concrete base at monitoring well M-1 on the west side of the secure PCB cell.

4.0 SITE ASSESSMENT

4.1 Site Area Characteristics

4.1.1 Topography and Drainage

Topography of the Glens Falls area is characterized as relatively flat and slopes gently to the north, east, and south. Within the site area, the Glens Falls Landfill and the secure PCB landfill appear as the only elevated surface features. The Glens Falls landfill is mounded approximately 40 feet high with generally steep side slopes. The secure PCB landfill is mounded approximately ten feet high and graded.

The Glens Falls area is bisected by the drainage divide between the Upper Hudson River Drainage Basin and the Lake Champlain Drainage Basin. Regionally, surface drainage is directed toward Halfway Creek to the north and the Hudson River to the south. However, drainage is believed to be controlled predominantly by subsurface infiltration rather than overland runoff due to the typically high permeability of the soils in the area. Drainage of the Glens Falls area is controlled by storm sewers which presumably discharge to the Hudson River. Within the immediate site area surface drainage is directed north via a small drainage channel located east of the landfill. This drainage channel ultimately discharges to Halfway Creek approximately one mile north of the landfill site.

Halfway Creek is classified as a "Class AA" water resource and as such is suitable as a source of water suppy for drinking, culinary or food processing purposes, and any other usages (Reference 12). The Hudson River

in the area of the Glens Falls landfill is classified as a "Class B" water resource suitable for primary contact recreation and any other uses except as a source of water supply for drinking, culinary or food processing purposes (Reference 12).

4.1.2 Environmental Setting

The inactive Glens Falls landfill site occupies fourteen acres of land in a moderately populated section of the Town of Queensbury. The site is located east of Interstate 87 on Luzerne Road just west of the City of Glens Falls. Presently, the Glens Falls municipal waste transfer station is located on the southern portion of the site. Residential and commercial properties are located within 700 feet north of the site and along Luzerne Road. Access to the landfill is partially restricted by a fence which runs along the property front on Luzerne Road and for a short distance on the southeast side of the site. Local residents frequently use the site for recreation such as motorcycle riding.

Wooded land borders the landfill to the north and open land lies to the east. Much of the landfill area, as well as the surrounding land, is grass covered. However, portions of these areas are completely unvegetated and eroded. A large portion of the landfill is covered with paper mill waste such as wood chips, bark, and mulch (Reference 22). Refuse has been observed on the ground surface and protruding through the thin cover material. There has been no final cover applied to the landfill (Reference 20).

Although considered separate from the Glens Falls landfill, a secure PCB landfill is located adjacent to the east side of the site. Prior to construction of the secure landfill, much of the surrounding land was found to be contaminated with PCBs (referred to as the Alkes Facility). Reportedly, area residents disposed of PCB oils, PCB bearing capacitors, and scrap from capacitor salvaging operations (Ref. 1). Following discovery of PCB contamination in the area, contaminated soil, capacitors, and scrap was excavated and placed in the one acre secure landfill. This area of contamination has been illustrated on Plate A, Appendix 1. The secure cell is monitored monthly (Ref. 23). The samples are prepared and analyzed as composites which represent upgradient and downgradient groundwater quality (Ref. 23). Although these wells were not sampled as part of the Phase II investigation, analytical results have been obtained from the NYSDEC and are presented in Reference 24.

There are no protected wetlands, critical habitats of endangered species, or wildlife refuges in the vicinity of the Glens Falls landfill (Reference 6).

4.1.3 Groundwater Usage

Most residents in the area are serviced by municipal water supplied by the Town of Queensbury and City of Glens Falls water departments which draw from the Hudson River, Halfway Creek, and three upland reservoirs. Although municipal water is available, a number of local residents use private groundwater wells for domestic water supplies. The nearest of these domestic wells has been identified approximately 700 feet north of the landfill along Sherman Avenue. These wells reportedly range in depth

from 20 to 40 feet and draw from the sand and gravel aquifer. Yield from the sand and gravel aquifer reportedly ranges from 50 to 100 gallons per minute.

4.2 Geophysical Results

The evaluation of the geophysical investigation represents an interpretation of subsurface conditions prior to and without the benefit of the data produced during the boring program conducted in the Phase II investigation. The purpose of the geophysical investigation is primarily to aid in the placement of borings and monitoring wells. The intent is to avoid drilling through fill material and to attempt to locate monitoring wells so as to yield the most data. Identification of the specific subsurface material and the thickness of that material is an interpretative product. The geophysical interpretation should be used as a tool in evaluating the findings of the boring program which represents actual conditions at the site.

Terrain conductivity measurements were recorded at one hundred and nine (109) stations and are presented in Table 1, Appendix 4. Three (3) continuous conductivity traverses were made along the eastern and northeastern region of the landfill. These profiles are shown on Figures 1 through 3, Appendix 4. A contour map of the terrain conductivity data, including the three traverse line locations, is provided on Plate B, Appendix 1.

Station locations were referenced to the northeast corner of the fence surrounding the PCB landfill. Limited access along the western perimeter of the landfill prevented additional station measurements.

Background terrain conductivity values outside the affected or landfill area range from 0.3 to approximately 15 millimhos/meter. The landfill boundary is approximately delineated by the 25 millimhos/meter contour. Two anomalous high readings (>1,000 millimhos/meter) occur on the landfill proper and are located in the northeastern area. These high readings may indicate buried metallic objects. From the conductivity survey, there appears to be no indication of a plume or other anomalous conductivity readings outside of the landfill proper.

The seismic refraction survey was performed using a Bison Instruments Model 1570C single channel seismograph and consisted of four (4) seismic lines. These lines were labelled AA, BB, CC, and DD, respectively. The locations of the lines are shown on Plate B, Appendix 1. The surficial material of the site consists of a very loose sandy soil, which is not conducive to seismic studies because of its ability to absorb seismic energy. Therefore, the depth of investigation was limited to approximately fifteen (15) feet. The field data and results of the seismic surveys are presented in Tables 2 through 5 and Figures 1 through 4, Appendix 4. The interpretation of seismic data is as follows:

- The subsurface at Line AA consisted of two layers with velocities of 833 ft/sec and 1,363 ft/sec for the first and second layers, respectively. The depth to the second layer from the surface was calculated to be 9.18 feet. Line BB also had a two layer seismic

model, with a first layer velocity of 1,262 ft/sec and a second layer velocity of 1,654 ft/sec. The depth from the surface to the second layer was calculated to be 10.33 feet. The 33% difference between the forward and reverse first layer velocities is attributed to a more compact sand surface (near a road) to the east. This 33% difference is consistent for the second layer and intercept times for the forward and reverse data. As a result, no dip analysis was done for the second layer.

- Seismic Line CC is interpreted as a two layer case with the first layer having a velocity of 1,250 ft/sec and the second layer having a velocity of 2,022 ft/sec. The average depth to layer two was calculated to be 11.32 feet from the surface.

- Line DD did not illustrate a second layer and is interpreted as a one layer subsurface with a velocity of 1,192 ft/sec.

All the first layer velocities can be associated with a loose unsaturated sand while the second layer velocities are indicative of a saturated or more consolidated sand which is located at an approximate depth of 10 feet. All calculations and graphs are given in Tables 2 through 5 and Figures 4 through 7.

4.3 Site Hydrogeology

4.3.1 Geology

Specific geology of the Glens Falls area is not well documented. Bedrock in the immediate site vicinity is reported to vary between shale and

limestone and is encountered at an approximate depth of 120 feet (Ref. 13).

The Phase II subsurface investigation was limited to definition of the unconsolidated materials extending to the water table. In general, the unconsolidated deposits underlying the area of the Glens Falls site have been identified as lake sands. These materials are typically very fine sands to pebbly sands which have been deposited by glacial lakes Albany, Quaker Springs, or Coveville (Ref. 17). The sands are also characterized as being very well sorted, well drained and easily excavated.

During the Phase II investigation, five borings were advanced to depths ranging from 14-32 feet below ground surface. The soils were visually identified as light brown to gray, fine to medium grained sands (Appendix 3). These materials appear to be well sorted, homogeneous and continuous with isolated occurrences of seams of silty fine sand or gravel (Appendix 3).

Geotechnical results indicate that the largest percentage, up to 98.8, of material composition consists of sand with the remaining composition consisting of silt and clay. The soils were classified using the Classification of Soils for Engineering Purposes ASTM D 2487-83, as poorly graded sand, poorly graded sand with silt to a clayey, silty sand (geotechnical results, Appendix 4).

4.3.2 Groundwater

Five monitoring wells (MW101-1 through MW101-5) were installed to monitor groundwater quality in the first water bearing zone encountered. Saturated deposits consisting of poorly graded sands and poorly graded sands with silt were first encountered at depths ranging from 8 feet at MW101-4 to 19-20 feet at MW101-1, MW101-2, and MW101-3, below ground surface.

Water levels measured during sampling activities conducted at the site on November 6, 1985, ranged from 357.82 feet (msl) at MW101-1 to 363.24 feet (msl) at MW101-3. The groundwater flow direction as indicated from water levels measured on November 6, 1985 appears to flow generally in a southeast direction under a hydraulic gradient of 0.005 ft./ft. (see Water Table Map, Plate A, Appendix 1).

First order of magnitude approximation for permeability of the saturated material was calculated to be 10^{-2} cm/sec as described in Section 3.4.3. The permeability calculations are presented in Appendix 4.

4.4 Analytical Results

The use of the halogenated organic scan (HOS) is intended to be a tool for screening samples for the possible presence of halogenated organics. The scan is not intended to quantify or qualify specific organic compounds. Analytical results are calculated from the total chromatographic response and are based upon the response factor and chlorine content of lindane. Consequently, analysis of identical samples by the HOS and by a method involving compound specific quantification and identification,

such as EPA Method 608, may result in values which are not in agreement. This occurs due to the variability of response factors as compared to the standard, lindane, and the scan's bias to produce false positives rather than potentially not indicate the presence of a compound. In all cases, analytical results from a compound specific method should be interpreted as being more concise than values produced by the scan.

4.4.1 Air Analytical Data

Previous Air Quality Data

There is no previous air quality data available for the Glens Falls landfill site.

Phase II Air Quality Data

Prior to initiating Phase II field activities, overall ambient air quality readings were recorded throughout the site area using a Photovac TIP photoionizer. In addition, the possible presence of explosive gases venting from boreholes during the subsurface investigation was monitored using an explosimeter. All readings recorded with both the photoionizer and the explosimeter were found to be within acceptable limits.

4.4.2 Soil and Sediment Analytical Data

Previous Soil Analytical Data

No previous soil analytical data is known to exist for the site.

Phase II Soil Analytical Data

Standard Parameters

Soil samples were evaluated from each boring at the depths specified on Table 4-1. In addition, two hand auger samples and two sediment samples were obtained for chemical analyses. The locations of borings, sediment points, and hand auger samples may be found on Plate A, contained in Appendix 1. A summary of the analytical results presenting only those constituents found above the detection limit may be found in Tables 4-1 and 4-2. A complete presentation of the analytical data can be found in Appendix 4.

As shown in Table 4-1, several heavy metal constituents appear to be common in all the analyzed samples obtained from the subsurface borings. Boring MW101-3 is considered to be representative of background soil quality since it is located hydraulically upgradient of the site. When the analytical results from downgradient samples are compared to the analytical results obtained from MW101-3, there appears to be no significant difference in detectable concentrations. However, soils obtained from MW101-1, hydraulically downgradient, and MW101-2, hydraulically upgradient, reveal elevated iron concentrations (8,160 and 5,820 ug/g, respectively), when compared to MW101-3 (77 ug/g). The relatively high iron concentrations in the soils from monitoring wells MW101-1 and MW101-2 reflect the possibility of relatively high iron concentrations in the parent material of these soils and/or the location of the wells within close proximity to past cultural activities which may have existed

TABLE 4-1

SOIL SAMPLES
STANDARD AND PRIORITY POLLUTANT ANALYSIS

Glens Falls Landfill

Parameter (ug/g, dry)	MW-101-3** (SS-4) (12-14 ft)	MW-101-2** (SS-4) (15-17 ft)	MW-101-1 (SS-4) 15-17 ft)	MW-101-4 (SS-2) (5-7 ft)	MW-101-5 (SS-4) (15-17 ft)
Total Chromium	<2	1.8	4.7	<3	<2
Total Copper	3.2	2.9	9.8	3.7	3.0
Total Iron	77	5820	8160	79	83
Total Lead	1.1	4.8	5.9	2.1	1.1
Total Nickel	6.9	5.5	14	6.6	4.4
Total Silver	<0.9	<0.8	3.3	<0.8	<1
Total Zinc	16	15	25	11	2.3
Dry Weight (103°C)	94.2	96.7	94.2	90.2	89.9
1,1-dichloro-ethene (ug/kg)	-	-	-	44.0	26.0
1,1,2,2-tetra-chloroethane (ug/kg)	-	-	-		100*

* Indicates an estimated value. Compound was tentatively identified indicating the presence of the compound that meets the identification criteria, but the result is less than the specified detection limit but > 0 (see CLP documentation, Appendix 4).

** Samples were obtained from upgradient monitoring wells.

along Luzerne Road south of the site. Additionally, silver and copper detected in soils obtained from MW101-1 show elevated concentrations when compared to MW101-3. Concentrations in MW101-1 for silver and copper are 3.3 and 9.8 ug/g, respectively, as compared to <0.9 and 3.2 ug/g in MW101-3.

Hand auger samples and sediment samples were collected from the location identified on Plate A, Appendix 1 and analyzed for the various parameters listed in Table 3-1. The hand auger samples were taken from depths of 0-2.0 feet (HA-101-1) and 0-2.5 feet (HA-101-2). Sediment samples were collected from the ground surface.

As indicated on Table 4-2, several heavy metals were detected in low concentrations at the hand auger locations and sediment sampling points with the exceptions of iron, which was detected at higher concentrations, (6,160 to 27,800 ug/g), and lead and zinc at SP101-2 which were detected at 473 ug/g and 622 ug/g, respectively. Sampling point SP101-2, within close proximity to Sherman Avenue, was located in a dried pond area with no indication of any present or past leachate contamination. Reported concentrations of zinc and lead in soils range from 10-300 ppm and 2-200 ppm, respectively (Reference 25). The distance of this sampling point from the study area, and the associated uninvestigated area between the study area and the sampling point and the proximity of Sherman Avenue, makes it difficult to identify the source of these anomalous levels. The

TABLE 4-2

SURFACE SOIL AND SEDIMENT
STANDARD ANALYSIS

Glens Falls Landfill

Parameter (ug/g)	SP-101-1 (Sediment)	SP-101-2 (Sediment)	HA-101-1 (Soil)	HA-101-2 (Soil)
Total Chromium	3.31	30.1	2.54	4.99
Hexavalent Chromium	0:019	0.267	0.017	0.033
Total Copper	4.48	84.2	3.50	6.07
Total Iron	9440	27800	10500	6160
Total Lead	3.57	473	1.63	4.26
Total Mercury	<0.01	0.530	0.035	0.045
Total Nickel	1.59	21.7	2.73	1.97
Total Silver	<0.7	3.05	<0.6	<0.7
Total Zinc	28.6	622	19.6	33.2
Halogenated Organic Scan (HOS-E)*	0.13	1.5	0.075	99
Total PCBt	0.35	2.3	<0.2	160**
Dry Weight (103°C)	76.6	42.3	89.1	89.9

* HOS-E concentrations reported as ug/g dry as Chlorine; Lindane standard.

† Quality Control was performed on SP101-1 which further delineated the Total PCB values as 0.27 ug/g Aroclor 1242 and 0.078 ug/g Aroclor 1254.

** Exceeds US EPA 50 ppm "Action Level".

Halogenated Organic Scan analysis indicated the presence of halogenated compounds in both hand auger and sediment samples with the highest concentration occurring at sampling point HA101-2. Analysis for total polychlorinated biphenyls (Aroclor 1254) revealed PCB concentrations in all samples except in sample HA101-1. PCBs in the highest concentration was found at location HA-101-2 at 160 ug/g. This location corresponds to the area of past PCB disposal activities (see Plate A, Appendix 1).

Priority Pollutant Organics

Soil samples from boring MW-101-4 (SS #2, 5-7 feet) and MW-101-5 (SS #4, 15-17 feet) were selected for priority pollutant analysis utilizing Contract Laboratory Protocol (CLP) specifications. The priority pollutant analysis involves testing for volatile constituents, pesticides, PCBs, and base/neutrals and acids extractables. The priority pollutant organic 1,1-dichloroethene was detected in soil samples analyzed from MW101-4 and MW101-5 at concentrations of 44.0 ug/kg, and 26.0 ug/kg, respectively (Table 4-1). Priority pollutant orgnaics detected but at concentrations below the detection limit were benzene and bis(2-ethylhexyl) phthalate.

An evaluation of all peaks >10% of the nearest internval standard resulted in the tenative identification of several non-priority pollutant organics. Based on this elevation, the compound 1,1,2,2-tetrachloroethane was tentatively identified in sample MW-101-5 (Table 4-1). The analysis also tentatively identified several unknown compounds in soil sample MW-101-4.

In addition, surface sediment sample SP-101-2 was evaluated for priority pollutant organics utilizing Contract Laboratory Protocol (CLP) specifications. The priority pollutant organics, PCBs Aroclor 1248 and Aroclor 1254, were detected at concentrations of 1.4 ppm and 1.1 ppm, respectively (see Appendix 4). Priority pollutant organics detected, but at concentration below the detection limit include:

1,4-dichlorobenzene

naphthalene

2-methylnaphthalene

dibenzofuran

phenanthrene

An elevation of all peaks >10% of the nearest internal standard resulted in the tentative identification of several non-priority pollutant organics. Based on this evaluation, the constituent benzene, (1-methylethyl) also known as cumene, and several unknown substituted aromatic and aliphatic hydrocarbons were tenatively identified in sample SP-101-2.

4.4.3 Groundwater Analytical Results

Previous Groundwater Analytical Results

There is no previous groundwater analytical data for the site.

Phase II Groundwater Analytical Results

Standard Parameters

Groundwater samples were collected and analyzed from each monitoring well (MW101-1 through MW101-5) installed during the Phase II investigation. In addition, groundwater samples were collected from two domestic wells (House #21 and House #23). A summary of the analytical results presenting only those constituents found above the detection limit are shown on Table 4-3. A complete presentation of the analytical results have been provided in Appendix 4.

As shown in Table 4-3, analytical results indicate detectable levels of heavy metals including nickel, silver, zinc, and iron in some of the groundwater samples collected from the on-site monitoring wells. Also, the presence of halogenated compounds was detected in all on-site wells. The presence of PCBs was detected in wells MW101-1 and MW101-5 at concentrations of 4.8 and 19 ug/l, respectively. MW101-3 was installed to provide groundwater samples that are representative of background groundwater quality as it is located hydraulically upgradient of the disposal area. The concentrations of PCBs detected in the downgradient wells (MW101-1 and MW101-5) when compared to background (MW101-3) appear to indicate a significant increase in PCB concentrations in the groundwater. However, due to limited data available, it is difficult to discern whether PCB contamination may be attributed to the landfill or to residual contamination from past disposal activities carried out in the vicinity.

TABLE 4-3

GROUNDWATER MONITORING WELLS
STANDARD AND PRIORITY POLLUTANT ANALYSIS

Glens Falls Landfill

Parameter (mg/l)	Upgradient		Downgradient		
	MW-101-3	MW-101-2	MW-101-1	MW-101-4	MW-101-5
Soluble Iron	<0.04	<0.04	34.0***	8.97***	0.389***
Soluble Nickel	<0.005	<0.005	0.011	<0.005	0.046
Soluble Silver	<0.006	<0.006	0.008	<0.006	<0.006
Soluble Zinc	0.022	0.017	0.043	0.023	0.036
Chloride	197	29	184	99	145
Sulfate	23	16	2.5	115	103
Total Organic Carbon	15	17	54	37	48
Halogenated Organic Scan (HOSE)(ug/l Cl)*	0.12	0.15	0.81	0.80	4.0
Total Polychlorinated Biphenyls**	<0.2	<1	4.8***	<1	19***
PCB (Aroclor 1016)(ug/l)					62***

* HOS-E concentrations reported as ug/l as Chlorine; Lindane standard

** PCB concentrations detected at MW101-1 and MW101-2 reported as ug/l on Aroclor 1232, at MW101-3 and MW101-4 reported as ug/l on Aroclor 1242, and at MW101-5 reported as ug/l on Aroclor 1016.

*** Exceeds groundwater (Class GA) standards of NYS Rules and Regulations Part 703.5 (Polychlorinated Biphenyls, PCB Arochlor: 0.1 µg/l; Iron: 0.3 mg/l)

As presented in Table 4-4, analytical results indicate the presence of copper, zinc, and iron in low concentrations in the domestic wells at Houses #21 and #23. The concentrations of these metals may be attributable to domestic plumbing systems. The halogenated organic scan revealed low but detectable concentrations of halogenated compounds; however, analysis for PCBs were found to be non-detected in both domestic wells.

Priority Pollutant Organics

Groundwater samples from monitoring wells MW101-4 and MW101-5 and from House #21 were selected for priority pollutant analysis utilizing Contract Laboratory Protocol (CLP) specifications. The priority pollutant analysis involves testing for volatile constituents, pesticides, PCBs, and base neutrals and acids extractables compounds. Priority pollutant analysis revealed the presence of PCB (aroclor 1016) in MW101-5 at a concentration of 62 ug/l. This exceeds the Groundwater (Class GA) Standards for PCB's. Several priority pollutant organics were found at concentrations below the detection limit in MW101-4 and MW101-5 (see Priority Pollutant Analysis, Appendix 4).

TABLE 4-4

DOMESTIC GROUNDWATER
STANDARD ANALYSIS

Glens Falls Landfill

Parameter (mg/l)	Sample Identification	
	House #21	House #23
Total Copper	0.053	0.028
Total Iron	0.10	0.14
Total Zinc	0.268	0.021
Chloride	56	103
Sulfate	18	23
Total Organic Carbon	12	12
Halogenated Organic Scan (ECD) ug/l as Chlorine; Lindane Standard	0.65	0.14

5.2 Updated HRS Worksheet

Facility name: Glens Falls Landfill

Location: Luzerne Road at Interstate 87

EPA Region: 2

Person(s) in charge of the facility: City of Glens Falls
City Hall
Glens Falls, NY 12801

Name of Reviewer: Recra Environmental, Inc. Date: June, 1986

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 operated from 1961 to 1977 during which time the site received primarily municipal waste. However, it is suspected that PCB bearing capacitors may also have been disposed in the landfill. The surrounding area is moderately populated with residences and businesses as near as 500 feet. Analytical results from groundwater, sediments, and soils collected from on site appear to indicate the presence of PCB contaminations within these matrices.

Scores: $S_M = 16.38$ $S_{gw} = 28.34$ $S_{sw} = 0$ $S_a = 0$)

S_{FE} = N/A

$S_{DC} = 0$

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	45	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	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score			-	15	
3 Containment	0 1 2 3	1	-	3	3.3
4 Waste Characteristics					3.4
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	1	8	
Total Waste Characteristics Score			19	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	10	40	
Total Targets Score			19	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			16245	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} =	28.34		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

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

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	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		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
[4] Multiply [1] x [2] x [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a = 0			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	28.34	803.16
Surface Water Route Score (S_{sw})	0	0
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		803.16
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		28.34
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		16.38

FIGURE 10
WORKSHEET FOR COMPUTING S_M

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

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	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	0	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 (5)	4	20	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			20	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600	
7 Divide line 6 by 21,600 and multiply by 100	S_{DC} = 0				

FIGURE 12
DIRECT CONTACT WORK SHEET

Jun

5.3 Updated HRS Documentation Records

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. 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 that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Glens Falls Landfill

LOCATION: Luzerne Road, Queensbury, New York

DATE SCORED: June, 1986

PERSON SCORING: Recra Environmental, Inc.

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

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

COMMENTS OR QUALIFICATIONS:

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

PCB's (Ref: Recra Phase II Investigation, 1985)

Rationale for attributing the contaminants to the facility:

Analytical data obtained from monitoring wells MW-101-1 thru MW101-5. A comparison of downgradient well data to upgradient well data.

(Ref: Appendix 4, Recra Phase II Investigation Report, 1985)

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Lake sands (Ref: Recra Phase II Investigation, 1985)

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

8 feet (Ref: Recra Phase II Investigation, 1985)

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

Unknown, however it is assumed that the bottom of the landfill is below or at the water table.

(Ref. 20)

Net Precipitation

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

Approximately 40 inches. (Ref. 26)

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

Approximately 27 inches. (Ref. 26)

Net precipitation (subtract the above figures):

Approximately 13 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Sand (Ref: Recra Phase II Investigation, 1985)

Permeability associated with soil type:

10^{-2} (Ref: Recra Phase II Investigaiton, 1985

Physical State

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

Municipal Waste (Solids, liquids, etc.)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill - no liner, inadequate cover material (Ref. 20 & 22)

Method with highest score:

Landfill

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

PCB's (Ref. 18 and Recra Phase II Investigation, 1985)

Compound with highest score:

PCB's

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):

Unknown

Basis of estimating and/or computing waste quantity:

---

* * *

5 TARGETS

Ground Water Use

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

Drinking water supply

Distance to Nearest Well

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

House #21 located directly northeast of the site.

(Ref: 11)
& Phase II Investigation

Distance to above well or building:

700 feet (Ref: 11)

Population Served by Ground Water 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:

12 x 3.8 = 46

(Ref. 10)

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):

Unknown

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

46 (Ref. 10)

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

Surface water sampling was not conducted as part of the Phase II investigation

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

<3%

(Ref: 11)

Name/description of nearest downslope surface water:

Halfway Creek - a Class "AA" water resource suitable as a source of water supply for drinking, culinary, or food processing purposes.

(Ref: 12)

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

$\approx$1.5%

(Ref: 11)

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

No

Is the facility completely surrounded by areas of higher elevation?

No

(Ref: 11)

1-Year 24-Hour Rainfall in Inches

2.2 (Ref: HRS Manual, figure 8)

Distance to Nearest Downslope Surface Water

5200 feet

(Ref: 11)

Physical State of Waste

Municipal waste consisting of solids, liquids, etc.

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill - no liner; inadequate cover material

(Ref: 20 & 22)

Method with highest score:

Landfill

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Compounds which have been attributed to the landfill (for HRS groundwater route) have not been shown analytically to leave the site via this (surface water) migration path. (Ref. 18 & Recra Phase II Investigation, 1985)

Compound with highest score:

N/A

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):

Unknown

Basis of estimating and/or computing waste quantity:

---

* * *

5 TARGETS

Surface Water Use

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

Halfway Creek - uses include possible drinking water source, culinary or food processing purposes.

Is there tidal influence?

No

Distance to a Sensitive Environment

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

N/A

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

N/A

(Ref: 6)

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

N/A

(Ref: 6)

Population Served by Surface Water

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

N/A

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

N/A

Total population served:

N/A

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes, measured in stream miles.

N/A

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

No airborne contaminants detected

(Ref: Recra Phase II investigation, 1985)

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

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Unknown

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

PCB's

(Ref. 18 & Recra Phase II investigation, 1985)

Hazardous Waste Quantity

Total quantity of hazardous waste:

Unknown

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

>10,000

Distance to a Sensitive Environment

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

N/A

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

No wetlands

(Ref: 6)

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

N/A

Land Use

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

≈ 500 feet

(Ref: 11)

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

Adirondack State Park is located ≈4 miles to the west of facility

(Ref: 11)

Distance to residential area, if 2 miles or less:

700 feet

(Ref: 11)

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

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

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

FIRE AND EXPLOSION

1 CONTAINMENT

Hazardous substances present:

N/A

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

* * *

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

500 feet

(Ref: 11)

Distance to Nearest Building

500 feet

(Ref: 11)

Distance to Sensitive Environment

Distance to wetlands:

No wetlands within 1 mile of the site

(Ref:6)

Distance to critical habitat:

N/A

Land Use

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

500 feet

(Ref: 11)

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

≈ 4 miles west of site

Distance to residential area, if 2 miles or less:

700 feet (Ref: 11 and Recra Phase II investigation, 1985)

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

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

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

Population Within 2-Mile Radius

>10,000

(Ref: 11)

Buildings Within 2-Mile Radius

>10,000

(Ref: 11)

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

N/A

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

Access is unrestricted (Ref: Recra Phase II Investigation, 1985)

* * *

3 CONTAINMENT

Type of containment, if applicable:

None - no liner in landfill, inadequate cover (Ref. 20)

* * *

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Compounds which have been attributed to the landfill (for HRS groundwater route) have not been shown analytically to leave the site via the surface water migration path. (Ref. 18 & Recra Phase II Investigation, 1985

Compound with highest score:

N/A

* * *

5 TARGETS

Population within one-mile radius

≈15,600

(Ref: 11)

Distance to critical habitat (of endangered species)

N/A

5.4 Updated Site Inspection form (EPA 2070-13)

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 557003

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Glens Falls Landfill	Luzerne Road at Interstate 87				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Glens Falls (C)	NY	12801	Warren		

09 COORDINATES: LATITUDE 43 18 19.0 | LONGITUDE 073 40 33.0

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	02 SITE STATUS	03 YEARS OF OPERATION
7 / 11 / 85 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1961 (BEGINNING YEAR) – 1977 (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 Recra Environmental Inc. (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Andre J. LaPres	Staff Geologist	Recra Environmental	(716) 833-8203
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Kevin M. Connare	Staff Geologist	Recra Environmental	(716) 833-8203
Mike Komoroske	Sanitary Engineer	NYSDEC Albany	(518) 457-0639
Dan Steenberge		NYSDEC Region 5 Raybrook	( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
			( )
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	8:30	Sunny, clear, 80° F.

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Pedro Fierro	Recra Environmental, Inc.	(716) 833-8203

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Andre J. LaPres		Recra Environmental, Inc.	716 833-8203	9 / 10 / 85 (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	557003

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

- TONS _____
- CUBIC YARDS Unknown
- NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

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

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

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

V. FEEDSTOCKS (See Appendix for CAS Numbers)

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

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

NYSDEC Hazardous Waste Disposal Site Report completed by Ray E. Cowen, P.E. and G. David Knowles, P.E. on April 7, 1980

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 557003

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION
02 [X] OBSERVED (DATE: 11-7-85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

PCB's detected in downgradient monitoring wells MW-101-1 and MW-101-5 sampled on November 7, 1985 by Recra Research, Inc.

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

Surface water samples were not collected during Phase II investigation.

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

None detected

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

None detected

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

Access to site is unrestricted and site is frequently used by local residents for recreation such as motorcycle riding.

01 [X] F. CONTAMINATION OF SOIL
02 [X] OBSERVED (DATE: 11-7-85) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: unknown (Acres)
04 NARRATIVE DESCRIPTION

PCB's detected in soil and surface sediment samples evaluated during the Phase II Investigation.

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

None observed. Two houses located to the north and upgradient of the site were evaluated for various chemical parameters including PCB. PCB's were not detected in the groundwater.

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

None reported

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

Access to site is unrestricted and site is frequently used by local residents for recreation such as motorcycle riding. Residents within 700 ft. North of site use shallow groundwater for domestic supply.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	557003

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

None observed or reported

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

None observed or reported

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

None reported

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

Landfill is unlined and wastes were reportedly disposed of in large gravel pit.

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

Unknown

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

Unknown

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

Unknown

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

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

The area immediately to south east of the site has been contaminated with PCB's. The soils and PCB bearing capacitors have been removed and placed into a secure cell located in the same general area.

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

Recra Environmental, Inc. Phase II Investigation performed for NYSDEC, June 1986, Appendix 4-analytical results.
Recra Environmental, Inc. Daily Field Report completed July 11, 1985.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	557003

II. PERMIT INFORMATION

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

III. SITE DESCRIPTION

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

04 TREATMENT (Check all that apply)
☐ A. INCINERATION
☐ 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
14 (Acres)

07 COMMENTS

Landfilling operations involved backfilling an abandoned gravel pit with municipal waste. It is suspected that PCB bearing capacitors may have also been disposed in the landfill.

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.

Landfill does not have a liner or leachate collection system. No final cap has ever been applied. Landfill surface was re-graded and seeded by a local citizen group.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

Landfill cover material is inadequate and waste protrudes in eroded areas.

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

Conversation with NYSDEC Region 5 representative regarding landfill history, June 11., 1986.

NYSDEC Hazardous Waste Disposal Site Report, April 7, 1980.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	557003

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)			02 STATUS			03 DISTANCE TO SITE
	SURFACE	WELL	ENDANGERED	AFFECTED	MONITORED	
COMMUNITY	A. X	B. ☐	A. ☐	B. ☐	C. ☐	A. >3 (mi)
NON-COMMUNITY	C. ☐	D. XX	D. ☐	E. ☐	F. ☐	B. 700 Ft. (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING X 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	03 DISTANCE TO NEAREST DRINKING WATER WELL
46	700 Ft. (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
20 (ft)	Southeast	20 (ft)	(gpd)	☐ YES X NO

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

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES ☐ NO	COMMENTS: Unknown	☐ YES ☐ NO	COMMENTS: Unknown

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

X 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
Municipal water is drawn from the Hudson River, Halfway Creek and three reservoirs. All sources are well upstream and upland of landfill.	☐ ☐ ☐	>3 (mi), 5200ft, &>3mi, (mi), Respectively (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN			02 DISTANCE TO NEAREST POPULATION
ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE	500 ft. XX (mi)
A. >10,000 (NO. OF PERSONS)	B. (NO. OF PERSONS)	C. (NO. OF PERSONS)	

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
>10,000	500 ft. XX (mi)

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

Landfill is located in a moderately populated area outside of the city limits of Glens Falls. Residential and commercial properties are located with 500 to 700 feet of the site.

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 557003

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Choose 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 (Choose 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	
≈120 (ft)	---- (ft)	----	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
13 (in)	2.2 (in)	15 %		1 %

09 FLOOD POTENTIAL
SITE IS IN N/A YEAR FLOODPLAIN

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

11 DISTANCE TO WETLANDS (5 acre minimum)
ESTUARINE: A. N/A (mi)
OTHER: B. N/A (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
N/A (mi)
ENDANGERED SPECIES: N/A

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. 500 ft (mi)	B. 700 ft. (mi)	C. _____ (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Topography of the Glens Falls area is characterized as relatively flat and grades gently north, east and south. Within the site area, the Glens Falls Landfill and a secure PCB landfill nearby appear as the only elevated surface features. The Glens Falls Landfill is mounded approximately 30 feet high with generally steep sideslopes. The secure PCB landfill is mounded approximately ten feet high and graded.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling results)

Phone conversation with Glens Falls Water Dept. personnel regarding water distribution by the City and Town of Queensbury, June 19, 1986.

Recra Environmental, Inc. Phase II Investigation Report prepared for NYSDEC, June 1986. Recra Environmental, Inc. Daily Field Report completed July 11, 1985.

Recra Record of Telephone Conversation with American Drilling Co., August 29, 1983.

U.S.G.S. topographic quadrangle map for Glens Falls, 1966.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	557003

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	7	Recra Environmental Laboratories	
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	7	Recra Environmental Laboratories	
VEGETATION			
OTHER Sediment	2	Recra Environmental Laboratories	

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Recra Environmental, Inc.
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS
Recra Environmental, Inc., 10 Hazelwood Dr., Amherst, NY 14150

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

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

Recra Environmental, Inc. Phase II Investigation Report prepared for NYSDEC June 1986.

EPA FORM 2070-13 (7-81)

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 557003

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
City of Glens Falls			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**10 STREET ADDRESS (P.O. Box, RFD #, etc.)**	**11 SIC CODE**
City Hall			
05 CITY	**06 STATE** / **07 ZIP CODE**	**12 CITY**	**13 STATE** / **14 ZIP CODE**
Glens Falls	NY 12801		

PARENT COMPANY (if applicable)

08 NAME	09 D+B NUMBER
10 STREET ADDRESS (P.O. Box, RFD #, etc.)	**11 SIC 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**

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)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
City of Glens Falls			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS (P.O. Box, RFD #, etc.)**	**04 SIC CODE**
City Hall			
05 CITY	**06 STATE** / **07 ZIP CODE**	**05 CITY**	**06 STATE** / **07 ZIP CODE**
Glens Falls	NY 12801		

IV. REALTY OWNER(S) (If applicable, list most recent first)

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)

NYSDEC Hazardous Waste Disposal Site Report, April 7, 1980.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - OPERATOR INFORMATION

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 557003

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
N/A Inactive			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**12 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**13 SIC CODE**
05 CITY	**06 STATE** / **07 ZIP CODE**	**14 CITY**	**15 STATE** / **16 ZIP CODE**
08 YEARS OF OPERATION	**09 NAME OF OWNER**		

OPERATOR'S PARENT COMPANY (If applicable)

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

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
City of Glens Falls			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**12 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**13 SIC CODE**
City Hall			
05 CITY	**06 STATE** / **07 ZIP CODE**	**14 CITY**	**15 STATE** / **16 ZIP CODE**
Glens Falls	NY 12801		
08 YEARS OF OPERATION	**09 NAME OF OWNER DURING THIS PERIOD**		
01 NAME	**02 D+B NUMBER**	**10 NAME**	**11 D+B NUMBER**
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**12 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**13 SIC CODE**
05 CITY	**06 STATE** / **07 ZIP CODE**	**14 CITY**	**15 STATE** / **16 ZIP CODE**
08 YEARS OF OPERATION	**09 NAME OF OWNER DURING THIS PERIOD**		
01 NAME	**02 D+B NUMBER**	**10 NAME**	**11 D+B NUMBER**
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**12 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**13 SIC CODE**
05 CITY	**06 STATE** / **07 ZIP CODE**	**14 CITY**	**15 STATE** / **16 ZIP CODE**
08 YEARS OF OPERATION	**09 NAME OF OWNER DURING THIS PERIOD**		

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

NYSDEC Hazardous Waste Disposal Site Report, April 7, 1980.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	557003

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
City of Glens Falls			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
City Hall			
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Glens Falls	NY	12801			
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)

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	557003

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ F. WASTE REPACKAGED 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ H. ON SITE BURIAL 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ L. ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ N. CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	
01 ☐ Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY
	N/A	

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	557003

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ S. CAPPING/COVERING 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ T. BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ U. GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ V. BOTTOM SEALED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ W. GAS CONTROL 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ X. FIRE CONTROL 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ Y. LEACHATE TREATMENT 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ Z. AREA EVACUATED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ 1. ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ 2. POPULATION RELOCATED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
	N/A	
01 ☐ 3. OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE _____	03 AGENCY _____

Although considered separate, a PCB secure landfill cell is located to the southeast of the site. This landfill was constructed when PCB contamination was discovered in the area immediately southeast of the Glens Falls landfill. The surficial soils and any PCB bearing capacitors in this area were removed and placed in the secure cell. The cell is monitored monthly by NYSDEC, Region 5.

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

NYSDEC memorandum to Recra regarding the secure PCB cell located southeast of the Glens Falls landfill.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	557003

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

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

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

EPA FORM 2070-13 (7-81)

SECTION 6.0 - PRELIMINARY ENGINEERING ASSESSMENT OF REMEDIAL ALTERNATIVES

The purpose of this assessment is to identify and evaluate technically feasible measures to remediate hazards identified at the Glens Falls site. This assessment is limited in scope and serves the following objectives:

- o Identification of technically feasible remedial measures
- o Preparation of order-of-magnitude cost estimates for these measures, based on data presently available
- o Screening of these measures for their effectiveness in remediating hazards
- o Combining the measures into comprehensive, alternate remedial plans, which may then be evaluated as part of a subsequent detailed Remedial Investigation/Feasibility Study (RI/FS) for the site.

The assessment is preliminary in scope. Furthermore, it is not intended to determine whether or not an RI/FS or site cleanup is required at the site. Such a determination must be based upon the site's environmental conditions and potential environmental hazards reflected in the revised HRS score.

6.1 Identification of Feasible Remedial Measures Remedial action is taken at a site to eliminate or reduce hazards to human health and the environment. In order to select the most desirable remedial action, several feasible measures are identified and evaluated, combined into remedial alternatives and further evaluated for cost and environmental soundness. Table 6-1 contains a list of remedial actions which were identified and reviewed for the Glens Falls site. A brief description of those remedial measures which appear feasible at this site, is presented below. This discussion is based upon the currently available information, and includes an identification of additional field data which would be necessary to confirm the feasibility and to determine more accurate cost of these measures.

- o No-Action - The no-action alternative is always feasible from a technical standpoint. Under this option, the site would be monitored for a specific period to further assess the need for remediation. The implementation of remedial measures will be put off to a future date and there is a possibility that spreading of contaminants would continue until such time when remedial action is implemented.

- o Removal of Surface Water and Sediments - There are two marshy areas located to the northeast of the landfill site. Contaminants have been detected in the sediments in these areas. At the time of sampling, there was no surface water. Based upon the probable seasonal variation of the occurence of

TABLE 6-1

Identification of Feasible Remedial Measures

Glens Falls Site

No Action	Feasible
Drum Removal and Offsite Disposal	Not Applicable
Removal and Disposal of Waste	Not Feasible
Control of Surface Water	Not Applicable
Removal of Surface Water and Sediments	Feasible
Capping and Grading	Feasible
Slurry Wall	Feasible
Subsurface Drainage	Not Feasible
Grouting	Not Feasible
Groundwater Pumping	Not Applicable

surface water in these marshes, this analysis assumes the worst case; removal of sediment during the wet season and thus removal of potentially contaminated surface water. The area on the north side appears to drain through a culvert under Sherman Avenue. This assessment is limited to the area up to the culvert and does not address the drainage area past that point, which should be investigated during RI/FS study. The sediments and the contaminated water (if any) from these marsh areas should be removed; the water should be treated and disposed of and the sediments should be disposed of in a secure landfill. The removal would consist of pumping the surface water into tank trucks and transporting it to a treatment facility. The sediments would be removed and stockpiled on site for drainage. The drainage would be achieved by windrowing on a specially constructed impervious platform (such as asphalt surface). The drainage water would be collected and transported to the treatment plant. The drained sediments would be disposed of in a secure landfill and the area restored to its current contours.

o Capping and Grading - The landfill covers an area of about 13 acres. The site was operated from 1961 to 1977 as a depository for municipal waste and it is suspected that some PCB capacitors may also have been disposed of in the landfill. A secure PCB landfill is located just east of the site. Prior to being used as landfill, the site was a sand and gravel pit

with depth approaching 50 feet to 70 feet below ground. Thus, the bottom of the refuse may be as much as 70 feet below ground, which is almost 50 feet below the groundwater table. The landfill is mounded approximately 40 feet above ground and has relatively steep side slopes. The soil cover over the landfill is deteriorated, brush and small trees are growing, and the surface is drainage is poor. Presently, the Queensbury - Glens Falls municipal waste transfer station occupies the southern portion of the site.

Although, a significant portion of the landfill is located below the groundwater table in relatively permeable materials, uncontrolled infiltration of rainwater and snowmelt only accentuates the production of leachate from the landfill located above the water table. The purpose of capping and grading would be to significantly reduce this infiltration, and thus production of leachate. The cap would consist of 2 foot of compacted clay, a 50 mil high density polyethylene liner, 1 foot thick layer of sand, a layer of filter fabric, 18 inches of loam soil and 6 inches of topsoil. It will cover the entire 13 acres of the landfill and extend up to 50 feet beyond the toe (limits) of the landfill slopes. Steep slopes would require rebuilding with common borrow to create a 2H:1V slope in order to permit construction of cap on stable slopes, and the landfill surface will be graded with common borrow to achieve a 3 percent slope prior to the cap placement. The

entire area would be mulched and seeded, and proper drainage ditches would be constructed to lead surface runoff away from the landfill.

o Slurry Wall - As stated previously, a significant portion of the refuse is located below the groundwater table, and most likely the soils surrounding it are relatively permeable (the site was used as a sand and gravel pit). Contaminants have been detected in the groundwater monitoring wells. If substantial quantities of hazardous substances are present in the landfill, they may continue to impact groundwater in an adverse manner even after the landfill surface is capped and graded. The landfill wastes therefore must be isolated from the groundwater. This isolation insitu can be effected by the construction of a slurry wall around the landfill. Construction of these impervious slurry walls will create a barrier across the flow of groundwater. This barrier can be used both to redirect the groundwater flow upgradient of the site, and to contain groundwater leaving the site on the downgradient side. These slurry walls are constructed of either a soil-bentonite or a cement-bentonite slurry. In the most commonly used method, a vertical trench of limited width is excavated with a backhoe or other appropriate equipment. In a soil-bentonite slurry wall, the trench sides are supported by a hydrated bentonite slurry during excavation and the trench is subsequently filled with a mixture of (select)

soil and bentonite slurry, thus creating a continuous wall. In a cement-bentonite slurry wall, the slurry is introduced into the trench during excavation and is allowed to harden to form the wall.

Slurry walls are most effective when constructed as a continuous diaphragm around the entire site and keyed into an impervious stratum at the bottom. Although lithology of the Glens Falls site is not adequately known at this time, it is reported that bedrock exists at an approximate depth of 120 feet below ground. For this assessment, it has been assumed that the slurry wall would be keyed into this bedrock at a depth of 120 feet. This would require construction of a cement-bentonite wall as it would be difficult to construct a soil-bentonite wall to such a depth in sandy-gravelly strata. A detailed investigation of site lithology should be conducted during the RI/FS to determine if a continuous impervious layer exist at a shallower depth above bedrock, and to determine depth, weathering and permeability of the bedrock. The slurry wall would be constructed along the perimeter of the landfill (or landfill cap) and a subsurface drain will be constructed upgradient of the wall along the downgradient side of the landfill. The purpose of this subsurface drain would be to prevent rise in the groundwater surface inside the slurry wall enclosure which can result in positive hydraulic gradient across the slurry wall.

Excavation and removal of the waste is not practical at this site due to the large quantities of waste present in the landfill. Particularly, most of this waste is sanitary refuse and other non-hazardous waste.

Also, groundwater pumping is not considered practical unless it is determined that the groundwater quality has seriously deteriorated and is impacting potable water supplies. This determination should be made during RI/FS and appropriate actions evaluated.

6.2 Estimated Cost of Remedial Measures - This section provides order-of-magnitude cost estimates for the separate remedial measures identified in Section 6.1. Since the primary purpose of these estimates is to provide budgetary planning guidelines, they have been prepared from a conservative standpoint, insofar as practical. EPA document (EPA/625/6-8/006) entitled Handbook of Remedial Action of Waste Disposal Sites (Revised) was consulted in developing these costs. It should be recognized, however, that the estimates are based upon very limited data, and are therefore considerably less reliable that those which would be developed as part of a RI/FS. The estimates include the cost of construction (analytical allowances, safety equipment, mobilization/demobilization, insurance, restoration), engineering services, RI/FS, construction contingencies, and operation and maintenance. They do not however include the cost associated with administrative or legal tasks. Table 6-2 summarizes the costs of the various feasible remedial

measures considered. The following paragraphs highlight the major assumptions and quantities upon which these costs are based.

- Removal of Surface Water and Sediment - Due to the seasonal nature of the occurence of surface water, removal and treatment of surface water has been assumed. This assumption would comprise removal of 1,140,500 gallons of surface water and 16,200 cubic yards of potentially contaminated sediments from a total of 5 acres of marsh, excavation and maintenance of drainage ditches around the marsh, and restoration of the area to its original contours. Sediments would be stockpiled on a specially constructed pad for drainage and drying and the drainage water would be collected. Sediments would then be transported to a secure landfill for disposal. Surface water and the drainage water from sediments would be transported to a treatment facility. Considering the large quantities of sediments to be disposed of, it is conceivable to construct a secure landfill at the site right next to the existing secure PCB landfill. This concept has not been costed out under this assessment but could be pursued during RI/FS.

- Capping and Grading - Impermeable cap would cover approximately 13 acres area and would be supplemented with surface drainage ditches. The steep side slopes would be flattened with common borrow to create stable slopes and covered with clay cap extending approximately 50 feet beyond the toe of the

slope. Resulting runoff would be directed away from the landfill by constructing appropriate runoff structures.

- Slurry Wall - This would include construction of approximately 432,000 sq. ft. of slurry wall around the perimeter of the landfill. The slurry wall, about 120 feet deep, would be keyed into bedrock or other impervious stratum. A subsurface drainage, approximately 3,900 feet long, would be constructed along the downgradient side of the landfill but upgradient of the slurry wall along with appropriate appurtenant structures.

6.3 Remedial Alternatives - Table 6-3 lists comprehensive remedial alternatives, which consist of various combinations of the individual feasible remedial measures identified previously. The rationale for these combinations is explained below.

- Alternative #1 - The no action alternative is self explanatory. Under this alternative, no remediation is carried out, and any hazards present at the site continue to spread. This alternative should only be acceptable if it is accepted that the site does not pose a threat to human health or the environment.

- Alternative #2 - This alternative would stand by itself if only the marsh areas were determined to endanger the environment. Contaminated water and sediments, the source of

Table 6-3

Remedial Alternatives

Glens Falls Landfill Site

Remedial Measure	Cost (x 1,000)	Alternative 1	2	3	4
No Action	$0.0	X			
Removal of Surface Water andSediments	12,080.5		X	X	X
Capping & Grading	7,012.0			X	X
Slurry Wall	29,626.2				X
Total		0	12,080.5	8,833.6	38,459.8

Note: Alternative 3 and 4 assume that dewatered sediments would be disposed of in the landfill on site and not in a secure landfill offsite. The cost of offsite disposal therefore is not included in determining the total cost of these alternatives.

Reference 13
Page 101 of 320

contaminant release, would be removed from the site and thus eliminate environmental hazards. This however does not appear to be the case as contaminants have been detected in groundwater as well. This remedial action therefore would have to be combined with other more extensive measures.

- Alternative #3 - This alternative would include capping and grading of the landfill plus removal and disposal of the contaminated water and the sediments from the marsh areas. Under this alternative, contaminated water would be transported to a treatment facility but the sediments would be dewatered and buried within the landfill under the clay cap. This alternative would effectively reduce infiltration of surface water into the landfill, reduce production of leachate caused by infiltration water, and leave the marsh areas in a clean condition. The alternative however would not stop the release of contaminants into the groundwater from the landfill located below the groundwater table.

- Alternative #4 - This is the most comprehensive remedial alternative. It would include all elements of alternative #3 plus the slurry wall around the entire landfill. An alternative with a partial slurry wall has not been considered as it would be quite ineffective in controlling the release of contaminants into the environment. This alternative should

completely isolate the source of contaminants from the environment as follows:

- Capping would minimize infiltration of surface water and thus production of leachate.

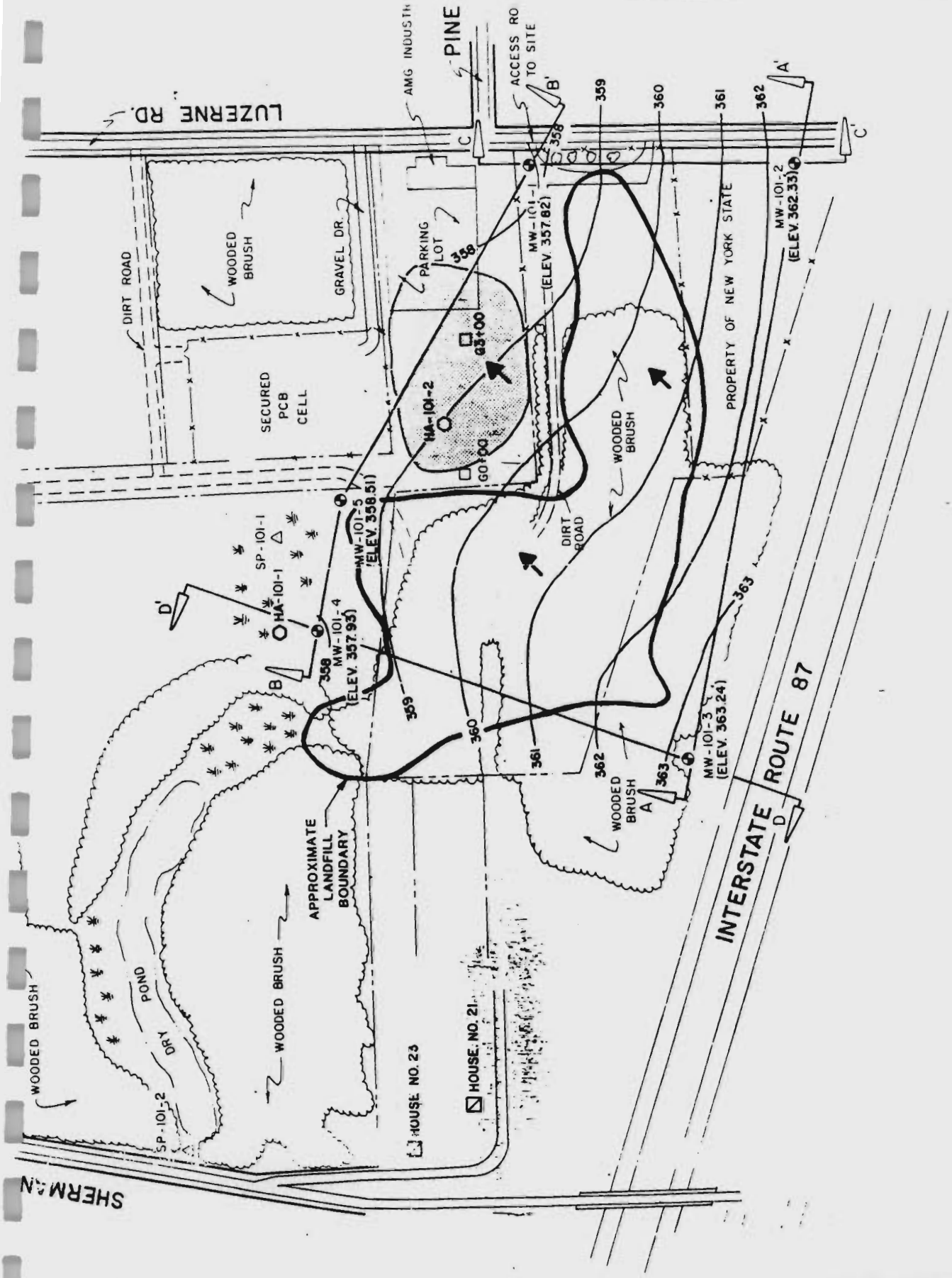
- Grading would promote drainage over and around the landfill and prevent infiltration caused by runon.

- Slurry wall will isolate the landfill waste and the groundwater underneath it from the surrounding soils, and thus, practically eliminate the release of contaminated groundwater into the regional groundwater regime.

This alternative is also the most costly of all.

APPENDIX 1

SITE PLAN, POTENTIOMETRIC SURFACE MAP (PLATE A)
GEOPHYSICAL CONDUCTIVITY CONTOUR MAP (PLATE B)
LOCATION OF CONDUCTIVITY TRANSVERSE LINES (PLATE C)



CROSS SECTION LOCATIONS
AND WATER TABLE MAP (11/6/85)

SITE PLAN

APR 23 19

PLATE A

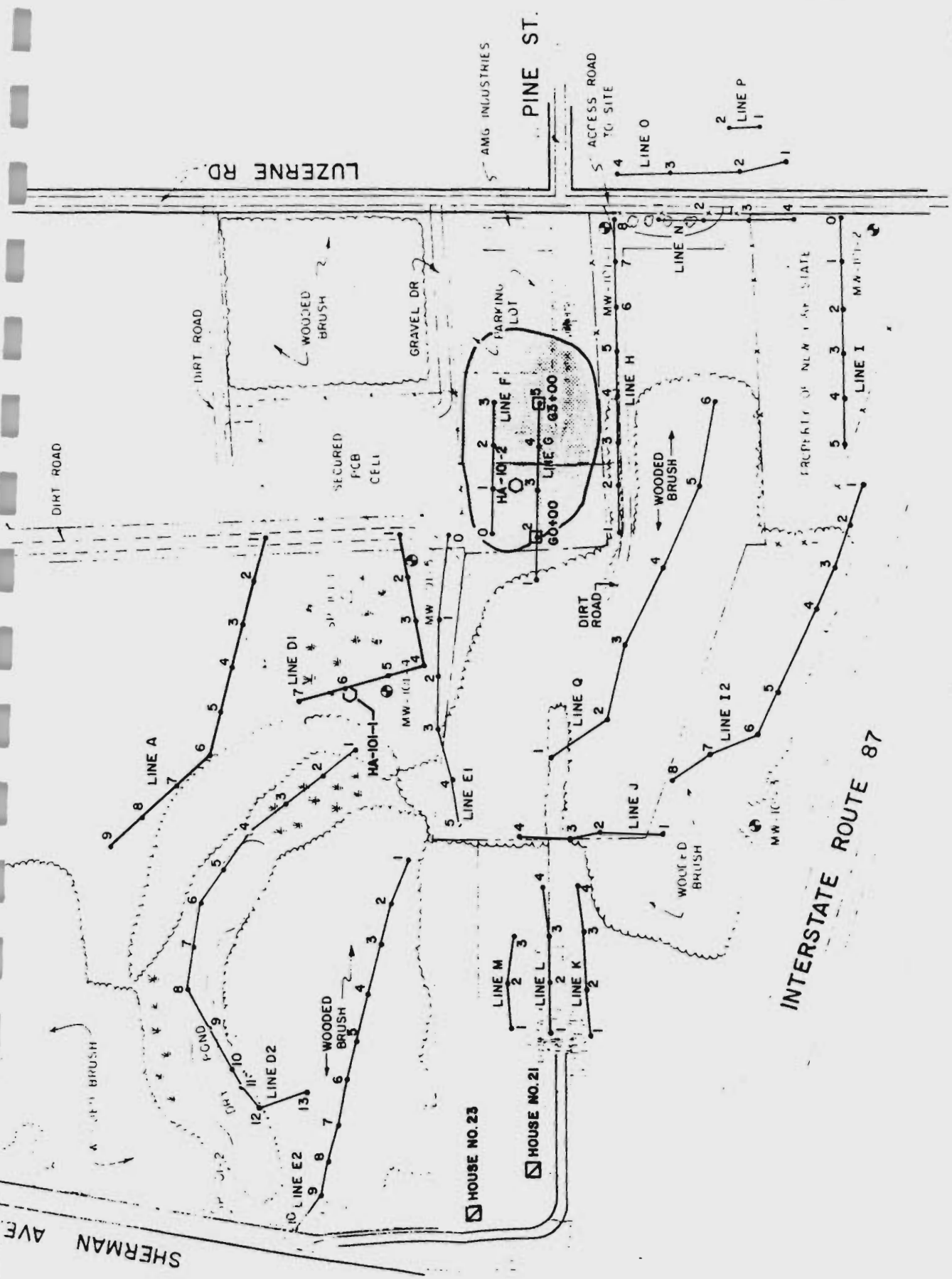
Scale: 1" = 200'	Date: OCT. 85	DWG. NO. D-111

APR 23 1987

GEOPHYSICAL CONDUCTIVITY CONTOUR MAP
WITH SEISMIC LOCATIONS

PLATE B

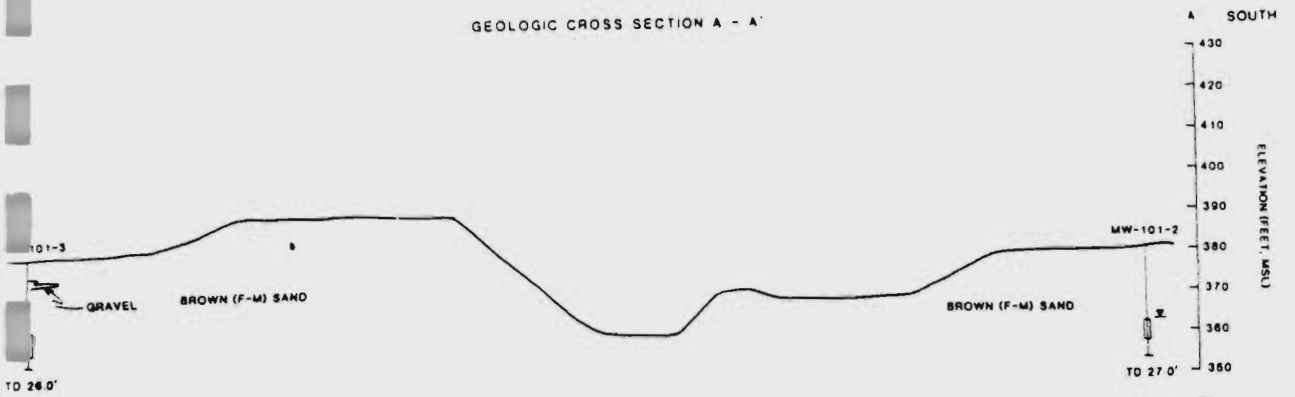
Scale 1" = 200'	Date [illegible] 85	DWG. NO. D-1115


PINE ST.
LUZERNE RD.
AMG INDUSTRIES
ACCESS ROAD TO SITE
LINE O
LINE P
LINE N
LINE I
LINE H
LINE F
LINE G
LINE D1
LINE A
LINE E1
LINE Q
LINE J
LINE I2
LINE D2
LINE E2
LINE M
LINE L
LINE K
HA-101-1
HA-101-2
MW-101
MW-101-2
MW-101-3
MW-101-4
MW-101-5
MW-101-6
MW-101-7
MW-101-8
MW-101-9
MW-101-10
MW-101-11
MW-101-12
MW-101-13
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MW-101-40
MW-101-41

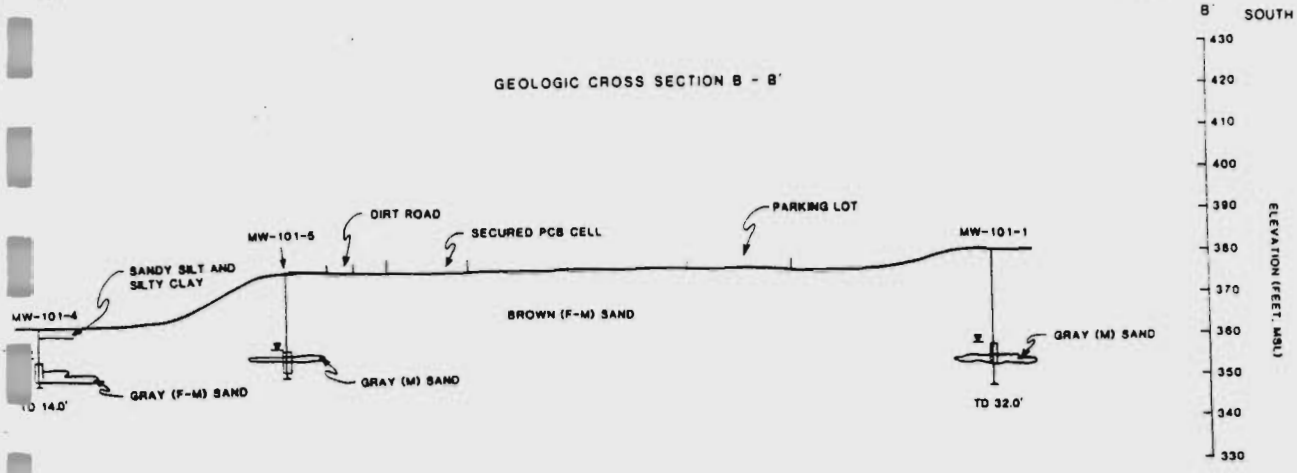
APPENDIX 2

CROSS SECTIONS

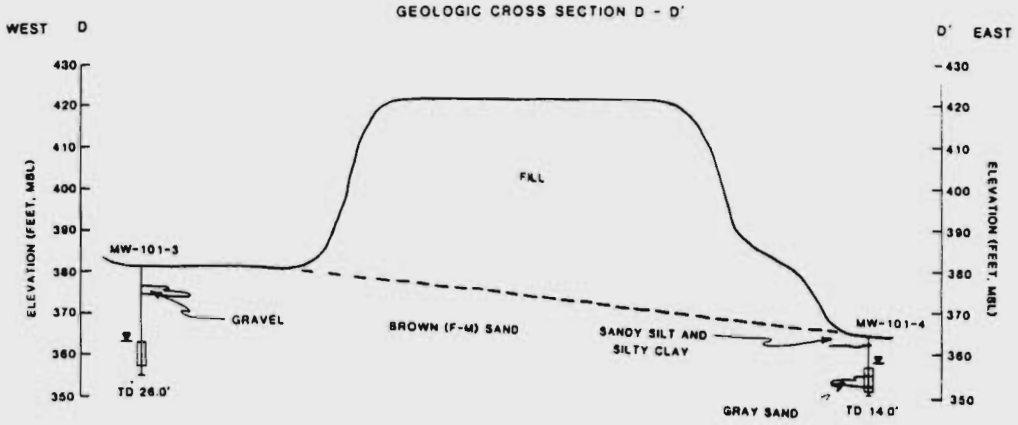
GEOLOGIC CROSS SECTION A - A'



GEOLOGIC CROSS SECTION B - B'



GEOLOGIC CROSS SECTION D - D'



SECTION A-A'
SECTION B-B'
SECTION C-C'
SECTION D-D'
APR 23 1987

GEOLOGIC CROSS SECTIONS

D 5C280101-0002

APPENDIX 2

APPENDIX 3

BORING LOGS

NOTES ON SUBSURFACE LOGS

1. Soil investigations and sampling by auger borings performed in accordance with ASTM designation D 1452-80.

2. Penetration test and split-barrel sampling of soils performed in accordance with ASTM designation D 1586-84.

3. Description and identification of soils performed in accordance with ASTM designation D 2488-84.

Relative Density of Sand	
Penetration Resistance N (blows/ft)	Relative Density
0- 4	Very loose
4-10	Loose
10-30	Medium
30-50	Dense
>50	Very dense

From Terzaghi and Peck, 1948.

- abbreviated textural descriptions for sand and gravel are as follows:

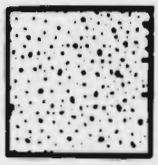
  Fine (F)
  Medium (M)
  Coarse (C)

- the percentages of gravel, sand, and fines are stated in terms indicating a range of percentages as follows:

Term	Range of Percentages
and	35 to 50
some	20 to 35
little	10 to 20
trace	1 to 10

4. Dashed stratification lines are approximate where in-situ.

5. Groundwater elevations were measured by Recra personnel on November 24, 1985.



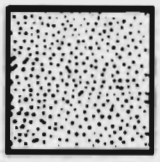
GROUT



BENTONITE



SAND PACK



FORMATION CAVE-IN



GLACIAL DRIFT



WELL SCREEN



CONCRETE

61160-1

RECRA RESEARCH INC.
BUFFALO, NEW YORK

Scale:		
	By	Date
Dwn.	MJS	11/85
Ckd.		
Ap'vd.		
Rev.		

Project No.

PATTERNS
FOR
WELL CONSTRUCTION
DIAGRAMS

A

DATE STARTED 7/11/85
FINISHED 7/11/85
SHEET 1 OF 1

RECRA RESEARCH, INC.

SUBSURFACE LOG

HOLE NO
SURFACE
G.W. ELEV. (11-6-85)

PROJECT NYSDEC Superfund Phase II Investigation
LOCATION Glens Falls Landfill Southeast Corner

DEPTH-FT	LOG	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	BLOWS ON SAMPLER 6/12	BLOWS ON SAMPLER 12/18	BLOWS ON SAMPLER 18/24	DESCRIPTION	NOTES
									CME-45 trailer mounted drill rig using 4¼" HSA. Split spoon sampling with 2' long 2" OD split spoon and 140 lb. hammer falling 30".
		SS	1	4	20	12	12	Brown and light brown FINE to MEDIUM SAND. Loose. Dry.	50% Recovery HNU = 0 Explosimeter = 0
5		SS	2	5	7	8	9	Becoming more MEDIUM SAND Well sorted. Loose. Moist.	80% Recovery HNU = 0 Explosimeter = 0
10		SS	3	5	7	10	11	Becoming wet.	90% Recovery HNU = 0 Explosimeter = 0
15		SS	4	6	9	11	13		90% Recovery HNU = 0 Explosimeter = 0 Sample Retained for Chemical Analysis
20		SS	5	8	13	18	20	Wet to saturated Occurrence of grayish brown SILTY FINE SAND seam. Compacted. Wet.	80% Recovery HNU = 0 Explosimeter = 0 Water Level 22.5 ft. BGS
25		SS	6	3	3	7	11	Gray MEDIUM SAND. Loose. Well sorted. Saturated.	75% Recovery HNU = 0 Explosimeter = 0
30		SS	7	6	7	16	12	Increased FINE SAND content Boring Terminated at 32 ft. BGS.	50% Recovery HNU = 0 Explosimeter = 0

CLASSIFICATION Visual by AJL, ASTM D 2488
METHOD OF INVESTIGATION ASTM D 1452 and D 1586

DATE STARTED 7/16/85
FINISHED 7/16/85
SHEET 1 OF 1

RECRA RESEARCH, INC.

SUBSURFACE LOG

HOLE N
SURFACE
G.W. ELE (11-6-85)

PROJECT NYSDEC Superfund Phase II Investigation

LOCATION Glens Falls Landfill Southwest Corner

DEPTH-FT	LOG	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	DESCRIPTION	NOTES
		SS	1	3	5	6	8	Brown and light brown MEDIUM TO FINE SAND. Loose. Dry to moist.	60% Recovery HNU = 0 Explosimeter = 0
5		SS	2	4	8	8	10	Becoming more MEDIUM SAND. Well sorted. Loose. Moist.	80% Recovery HNU = 0 Explosimeter = 0
10		SS	3	6	10	13	16	Becoming wet.	70% Recovery HNU = 0 Explosimeter = 0 Sample SS-4 Retained for Chemical Analysis
15		SS	4	8	11	18	18		90% Recovery HNU = 0 Explosimeter = 0 Water Level 17.8 ft. BGS
20		SS	5	5	7	17	27	Saturated Becoming brown FINE SAND.	80% Recovery
		SS	6	38	42	44	49	Occurrence of ROUNDED COARSE SAND grains within. Saturated.	100% Recovery HNU & Explosimeter = 0
25		SS	7	5	8	12	13		50% Recovery HNU & Explosimeter = 0
								Boring Terminated at 27 ft. BGS	
30									

NOTES: CME-45 trailer mounted drill rig using 4¼" HSA. Split spoon sampling with 2' long 2" OD split spoon and 140 lb. hammer falling 30".

CLASSIFICATION ASTM visual by AJL, ASTM D 2488

METHOD OF INVESTIGATION ASTM D 1452 and D 1586

DATE STARTED 7/16/85
FINISHED 7/16/85
SHEET 1 OF 1

RECRA RESEARCH, INC.

SUBSURFACE LOG

HOLE
SURFAC
G.W. ELEV. 303.24 (11-6-85)

PROJECT NYSDEC Superfund Phase II Investigation

LOCATION Glens Falls Landfill Northwest Corner

NOTES: CME-45 trailer mounted drill rig using 4¼" HSA. Split spoon sampling with 2' long 2" OD split spoon and 140 lb. hammer falling 30".

DEPTH-FT	LOG	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	DESCRIPTION	
		SS	1	3	7	15	24	Brown and light brown MEDIUM TO FINE SAND. Loose. Moist.	No Recovery
5		SS	2	5	6	9	11	Becoming MEDIUM SAND. Occurrence of ROUNDED GRAVEL. Loose. Moist.	50% Recovery HNU = 0 Explosimeter = 0
10		SS	3	6	8	12	16	Becoming more moist.	50% Recovery HNU = 0 Explosimeter = 0
15		SS	4	6	9	9	11	Becoming wet.	60% Recovery HNU = 0 Explosimeter = 0 Sample Retained for Chemical Analysis Water Level 17.8 ft. BGS
20		SS	5	4	7	13	17	Saturated	25% Recovery HNU & Explosimeter = 0
		SS	6	14	14	15	16		50% Recovery HNU & Explosimeter = 0
25		SS	7	7	7	6	9		50% Recovery HNU & Explosimeter = 0
								Boring Terminated at 26 ft. BGS	
30									

CLASSIFICATION visual by AJL, ASTM D 2488

METHOD OF INVESTIGATION ASTM D 1452 and D 1586

DATE STARTED 7/17/85
FINISHED 7/17/85
SHEET 1 OF 1

RECRA RESEARCH, INC.

SUBSURFACE LOG

HOLE NO.
SURFACE
G.W. ELEV. 357.93 (11-6-85)

PROJECT NYSDEC Superfund Phase II Investigation

LOCATION Glens Falls Landfill Northeast Corner

DEPTH-FT	LOG	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	DESCRIPTION	NOTES
		SS	1	7	7			Dark brown FINE SANDY SILT. Occurrence of SMALL GRAVEL. Loose. Dry.	CME-45 trailer mounted drill rig using 4¼" HSA. Split spoon sampling with 2' long 2" OD split spoon and 140 lb. hammer falling 30".
				8	12				20% Recovery HNU = 0 Explosimeter = 0
								Occurrence of gray CLAY in auger cuttings. Gray SILTY CLAY. Moist. Plastic.	
5		SS	2	14	24			Light brown MEDIUM SAND.	
				24	25			Loose wet.	80% Recovery HNU & Explosimeter = 0
								Becoming saturated.	Sample Retained for Chemical Analysis Water Level 6.0 ft. BGS.
10		SS	3	4	3			Gray FINE TO MEDIUM SAND.	
				4	4			Loose. Saturated.	75% Recovery HNU & Explosimeter = 0
		SS	4	6	6			Light brown MEDIUM SAND	
				6	8				100% Recovery HNU & Explosimeter = 0
								Boring Completed at 14.0 ft. BGS	
15									

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METHOD OF INVESTIGATION ASTM D 1452 and D 1586

DATE STARTED 7/17/85
FINISHED 7/17/85
SHEET 1 OF 1

RECRA RESEARCH, INC.

SUBSURFACE LOG

HOLE
SURFACE
G.W. EL

(11-6-85)

PROJECT NYSDEC Superfund Phase II Investigation

LOCATION Glens Falls Landfill Central East Side

NOTES: CME-45 trailer mounted drill rig using 4¼" HSA. Split spoon sampling with 2' long 2" OD split spoon and 140 lb. hammer falling 30".

DEPTH-FT	LOG	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	DESCRIPTION	
0		SS	1	6	8	10	13	Dark brown SILTY FINE SAND topsoil. Organic. Loose dry.	25% Recovery HNU = 0 Explosimeter = 0
								Brown and light brown MEDIUM AND FINE SAND. Occurrence of gravel. Loose. Dry.	
5		SS	2	4	6	6	8	Becoming MEDIUM SAND. Loose. Moist to wet.	80% Recovery HNU = 0 Explosimeter = 0
10		SS	3	5	7	12	12		60% Recovery HNU = 0 Explosimeter = 0
15		SS	4	5	14	18	18	Increased FINE SAND content. Loose. Moist.	100% Recovery HNU & Explosimeter = 0 Sample Retained for Chemical Analysis Water level 19.0 ft. BGS
								- Becoming wet to saturated.	
20		SS	5	4	5	8	8	Gray MEDIUM SAND. Loose. Saturated	60% Recovery HNU & Explosimeter =0
		SS	6	14	14	15	17	Light brown MEDIUM SAND. Loose. Saturated	70% Recovery HNU & Explosimeter = 0
25								Boring Terminated at 25 ft. BGS	
30									

CLASSIFICATION visual by AJL, ASTM D 2488

METHOD OF INVESTIGATION ASTM D 1452 and D 1586

APPENDIX 4

ANALYTICAL FIELD DATA

Geophysical Results

1/3480

TABLE 1
GEOPHYSICAL RESULTS
APPENDIX 4
CONDUCTIVITY SURVEY DATA
GLENS FALLS

LINE	STATION	AVERAGE CONDUCTIVITY (mmhos/meter)	COMMENTS
A	1	6.8	----
A	2	4.9	----
A	3	3.5	----
A	4	2.7	----
A	5	1.5	----
A	6	0.7	----
A	7	0.6	----
A	8	0.4	----
A	9	0.7	----
B	0	6.7	----
C	0	7.2	----
D1	1	4.5	----
D1	2	24.3	----
D1	3	12.9	----
D1	4	20.5	----
D1	5	18.5	----
D1	6	14.5	----
D1	7	14.3	----
D2	1	11.5	----
D2	2	5.9	----
D2	3	4.6	----
D2	4	4.4	----
D2	5	5.7	----
D2	6	7.1	----
D2	7	5.5	----
D2	8	5.8	----
D2	9	6.0	----
D2	10	6.3	----
D2	11	6.8	----
D2	12	3.8	----
D2	13	1.4	----
E1	0	4.3	----
E1	1	100*	----
E1	2	23.5	----
E1	3	13.0	----
E1	4	100*	----
E1	5	100*	----

1/3480

TABLE 1

(continued)

LINE	STATION	AVERAGE CONDUCTIVITY (mmhos/meter)	COMMENTS
E2	1	0.4	----
E2	2	0.3	----
E2	3	0.3	----
E2	4	0.4	----
E2	5	1.0	----
E2	6	1.8	----
E2	7	0.9	----
E2	8	1.5	----
E2	9	2.0	----
E2	10	5.4	----
F	0	4.4	----
F	1	22.3	----
F	2	5.4	----
F	3	7.3	----
G	1	59.0	----
G	2	3.3	----
G	3	4.7	----
G	4	5.1	----
G	5	5.2	----
G1	0	4.1	----
H	1	8.9	----
H	2	12.9	----
H	3	12.9	----
H	4	13.8	----
H	5	9.5	----
H	6	13.3	----
H	7	11.0	----
H	8	12.0	----
I	0	3.2	----
I	1	0.8	----
I	2	0.8	----
I	3	1.5	----
I	4	9.8	----
I	5	9.1	----
I2	1	5.7	----
I2	2	3.1	----
I2	3	3.0	----
I2	4	6.2	----
I2	5	7.7	----
I2	6	5.0	----
I2	7	45.5	----
I2	8	15.5	----

TABLE 1

(continued)

LINE	STATION	AVERAGE CONDUCTIVITY (mmhos/meter)	COMMENTS
J	1	1.7	----
J	2	5.8	----
J	3	1.2	----
J	4	2.5	----
K	1	1.3	----
K	2	0.4	----
K	3	0.4	----
K	4	0.3	----
L	1	1.2	----
L	2	0.8	----
L	3	0.4	----
L	4	0.8	----
M	1	0.9	----
M	2	0.7	----
M	3	1.8	----
N	1	17.0	----
N	2	18.5	----
N	3	6.9	----
N	4	4.9	----
O	1	1.8	----
O	2	8.8	----
O	3	1.6	----
O	4	1.6	----
P	1	0.4	----
P	2	1.0	----
Q	1	34.0	----
Q	2	89.0	----
Q	3	76.0	----
Q	4	73.0	----
Q	5	75.0	----
Q	6	65.0	----

*Set to 100 mmhos/m, may be much higher (>1000 mmhos/m)

~~GLENS FALLS AA SEISMIC~~

	FORWARD DISTANCE (FEET)	TIME (milliseconds)
	10.000	14.300
	20.000	25.700
	30.000	34.100
	40.000	40.800
	50.000	49.300
	60.000	56.000
	70.000	62.100
	80.000	69.200
	90.000	77.000
0	100.000	83.400
1	110.000	91.200
12	10.000 ← REVERSE	95.000
13	20.000	85.100
14	30.000	76.500
15	40.000	69.600
16	50.000	62.100
17	60.000	54.700
18	70.000	50.000
19	80.000	41.000
20	90.000	34.000
21	100.000	24.000
22	110.000	13.500

TABLE 2
GEOPHYSICAL RESULTS
APPENDIX 4

CALCULATIONS

$V_{1\,FORWARD} = .833$ ft/millisecond, $V_{2\,FORWARD} = 1.379$ ft/millisecond, $Ti_{FORWARD} = 11$ milliseconds

$V_{1\,REVERSE} = .833$ ft/millisecond, $V_{2\,REVERSE} = 1.348$ ft/millisecond, $Ti_{REVERSE} = 10.5$ milliseconds

% Difference 0% 2.3% 4.8%

$$\Theta = \frac{1}{2}\left[\sin^{-1}\left(\frac{.833}{1.348}\right) - \sin^{-1}\left(\frac{.833}{1.379}\right)\right] = +0.50°$$

$$V_2 = 2\cos(0.50)\left[\frac{(1.379)\cdot(1.348)}{(1.379+1.348)}\right] = 1.363 \text{ ft/millisecond}$$

$$\text{Depth Forward} = \left[\frac{(1.379)\cdot(11)}{2}\right]\cdot\left[\sqrt{\frac{1}{\frac{1.379}{.833}-1}}\right] = 9.37 \text{ ft}$$

$$\text{Depth REVERSE} = \left[\frac{(1.348)\cdot(10.5)}{2}\right]\cdot\left[\sqrt{\frac{1}{\frac{1.348}{.833}-1}}\right] = 9.00 \text{ ft}$$

LAYER 1 velocity = 833 ft/second

LAYER 2 velocity = 1.363 ft/second

Depth to layer 2 = 9.18 ft

FORWARD

GLENS FALLS ~~BASELINE~~ SEISMIC REFRACT.

SET	DISTANCE (FEET)	TIME (MILLISECONDS)	
1	10.000	10.600	
2	20.000	20.400	
3	30.000	29.500	
4	40.000	39.400	
5	50.000	49.000	
6	60.000	58.800	
7	70.000	67.800	
8	80.000	73.700	
9	90.000	81.100	
10	100.000	88.800	
11	110.000	96.800	→ REVERSE
12	110.000	7.900	
13	100.000	14.700	
14	90.000	20.700	
15	80.000	28.000	
16	70.000	33.100	
17	60.000	38.600	
18	50.000	43.100	
19	40.000	47.700	
20	30.000	52.900	
21	20.000	57.800	
22	10.000	63.700	

TABLE 3
GEOPHYSICAL RESULTS
APPENDIX 4

CALCULATIONS

$V_{1\ FORWARD} = 1.015 \frac{ft}{millisecond}$ $V_{2\ FORWARD} = 1.316 \frac{ft}{millisecond}$ $T_{i\ FORWARD} = 13$ milliseconds

$V_{1\ REVERSE} = 1.510 \frac{ft}{millisecond}$ $V_{2\ REVERSE} = 1.992 \frac{ft}{millisecond}$ $T_{i\ REVERSE} = 8.9$ millisec.

32%

33%

Percent Difference = 33%

$Depth_{FORWARD} = 10.36$ ft

$Depth_{REVERSE} = 10.30$ ft

Layer One Velocity $(V_1)_{AVERAGE} = 1{,}2625$ ft/sec

Layer Two Velocity $(V_2)_{AVERAGE} = 1{,}654$ ft/sec

$Depth_{AVERAGE} = 10.33$ ft

TABLE 4
GEOPHYSICAL RESULTS
APPENDIX 4

DISTANCE (FEET) FORWARD	TIME (milliseconds)
10.000	9.300
20.000	14.600
30.000	20.600
40.000	27.200
50.000	30.700
60.000	36.800
70.000	43.600
80.000	49.200
90.000	53.900
100.000	58.800
110.000	64.000
120.000 ← REVERSE	67.800
10.000	67.000
20.000	61.800
30.000	59.000
40.000	54.500
50.000	48.800
60.000	41.100
70.000	38.2
80.000	33.100
90.000	30.400
100.000	22.200
110.000	15.900
120.000	9.800

Calculations

$V_{1\,FORWARD} = 1.25$ ft/milliseconds $V_{2\,FORWARD} = 1.965$ ft/millisecond $T_{i\,FORWARD} = 8.6$ milliseconds

$V_{1\,REVERSE} = 1.25$ ft/millisecond $V_{2\,REVERSE} = 2.083$ ft/millisecond $T_{i\,BACKWARD} = 9.0$ milliseconds

% Difference 0% 5.8% 4.5%

$$\Theta = \frac{1}{2}\left[\sin^{-1}\left(\frac{1.25}{2.083}\right) - \sin^{-1}\left(\frac{1.25}{1.965}\right)\right] = -1.31$$

$$V_2 = 2\cos(-1.31)\left[\frac{1.965 * 2.083}{1.965 + 2.083}\right] = 2.022 \text{ ft/millisecond}$$

$$D_{FORWARD}^{DEPTH} = \left[\frac{1.965 * 8.6}{2}\right] \cdot \left[\frac{1}{\sqrt{\frac{1.965}{1.25} - 1}}\right] = 11.17 \text{ ft}$$

$$D_{REVERSE}^{DEPTH} = \left[\frac{2.083 \times 9.0}{2}\right] \cdot \left[\frac{1}{\sqrt{\frac{2.083}{1.25} - 1}}\right] = 11.48$$

Layer 1 Velocity = 1,250 ft/sec

Layer 2 Velocity = 2,022 ft/sec

Depth to Layer 2 = 11.32 ft

FORWARD

GLENS FALLS SEISMIC REFRACTION L1

SET	DISTANCE	TIME
1	10.000	10.800
2	20.000	19.400
3	30.000	29.100
4	40.000	36.100
5	50.000	43.400
6	60.000	55.200
7	70.000	64.600
8	80.000	76.400
9	90.000	83.600
10	100.000	95.200
11	110.000	100.000
12	120.000	110.000
13	20.000	89.900 → REVERSE
14	30.000	82.300
15	40.000	77.700
16	50.000	65.000
17	60.000	61.000
18	70.000	51.600
19	80.000	42.900
20	90.000	34.700
21	100.000	25.600
22	110.000	18.100
23	120.000	11.600

TABLE 5
GEOPHYSICAL RESULTS
APPENDIX 4

Calculations:

$V_{1\ FORWARD} = 1.108$ ft/millisecond

$V_{1\ REVERSE} = 1.277$ ft/millisecond.

Percent Difference = 13.2%

Layer 1 Velocity Vaverage = 1,192 ft/sec.

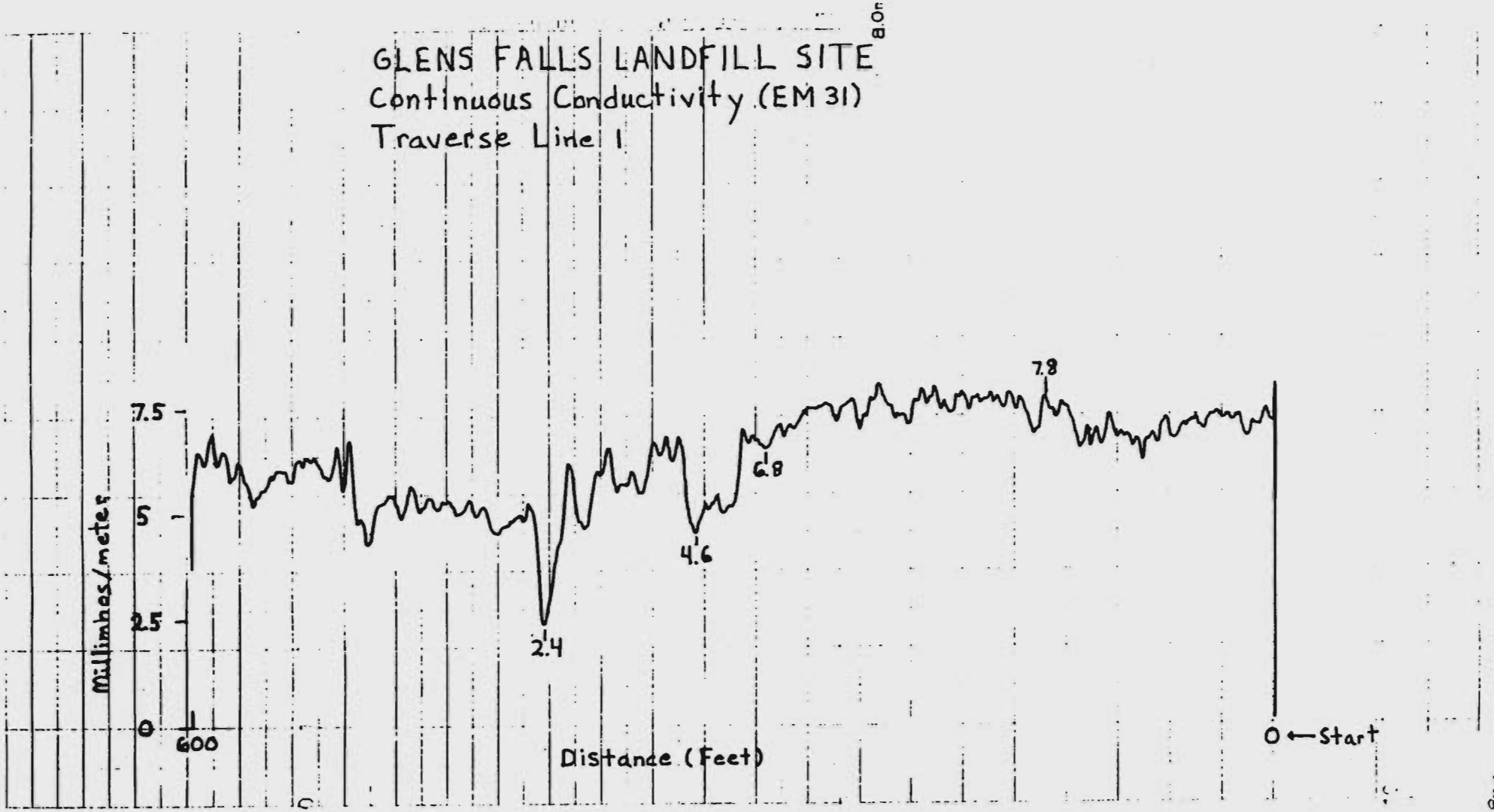


FIGURE 1
GEOPHYSICAL RESULTS
APPENDIX 4

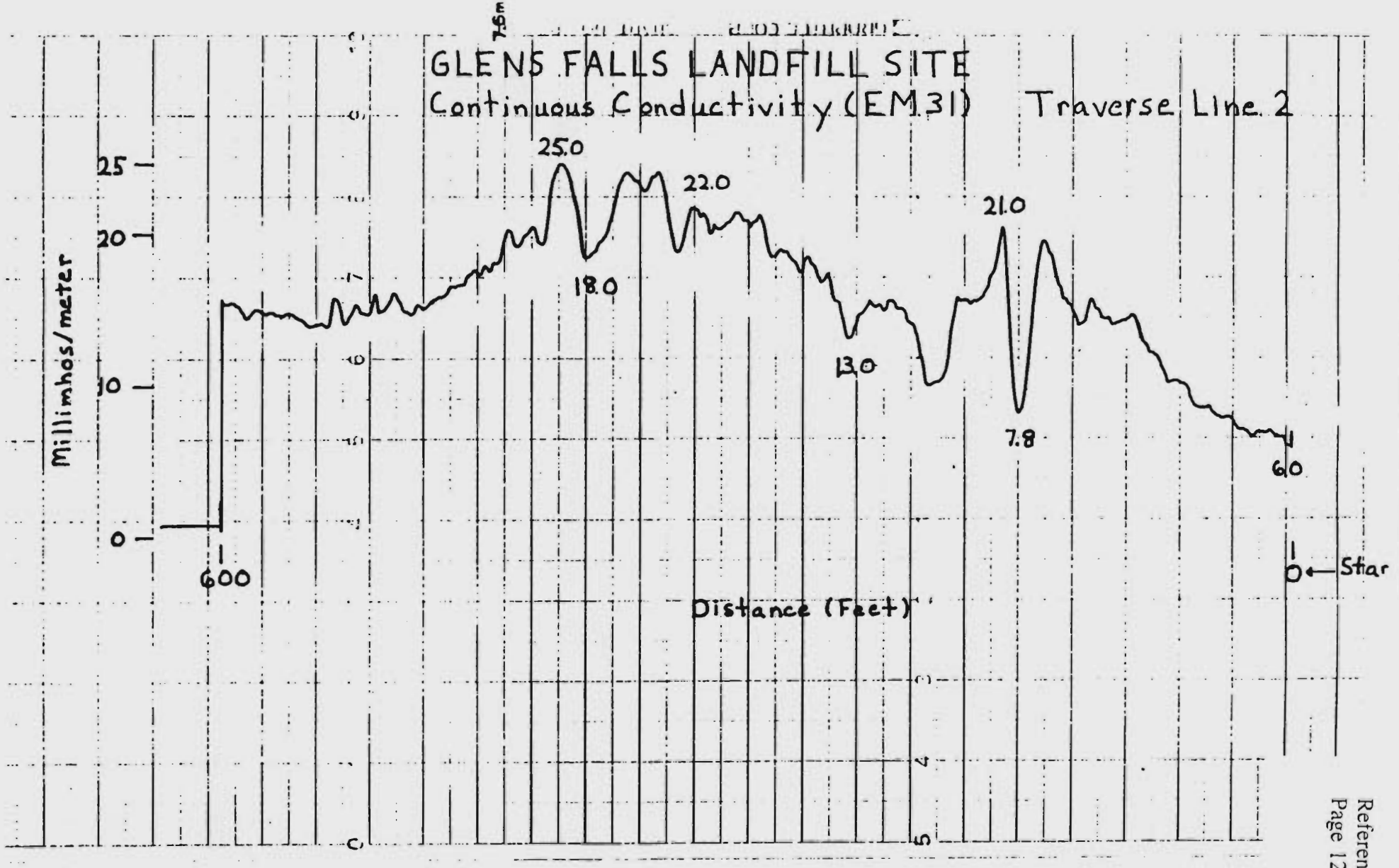


FIGURE 2
GEOPHYSICAL RESULTS
APPENDIX 4

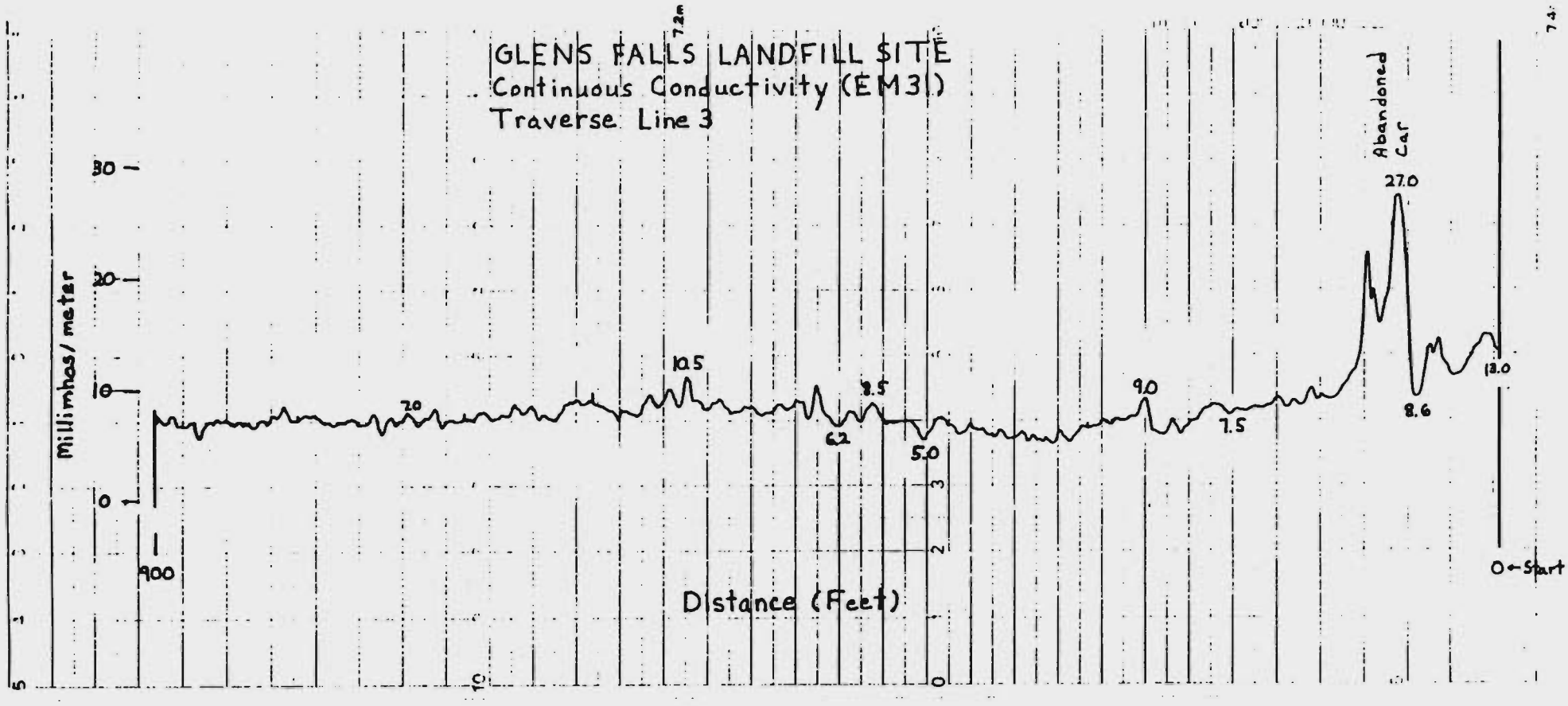
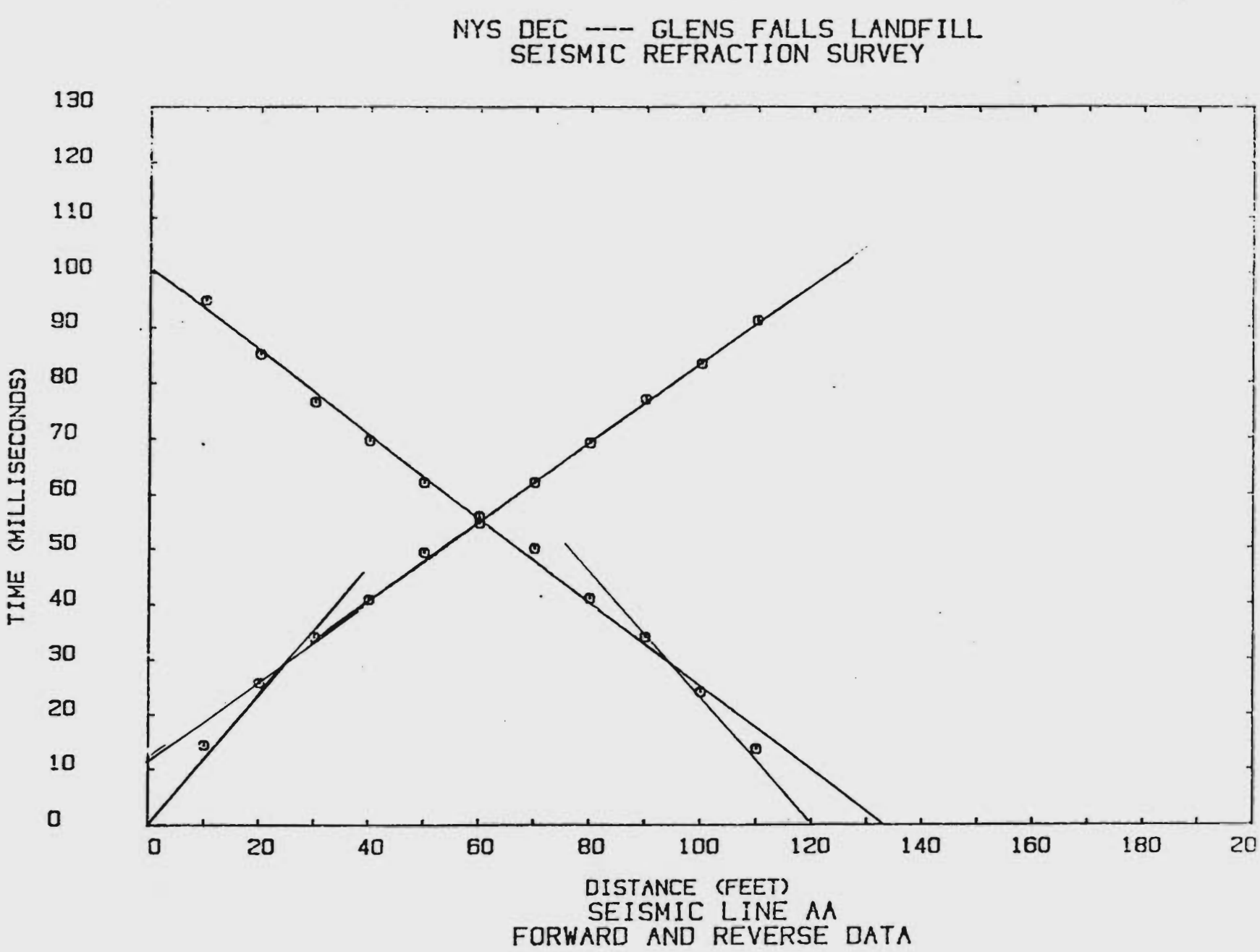
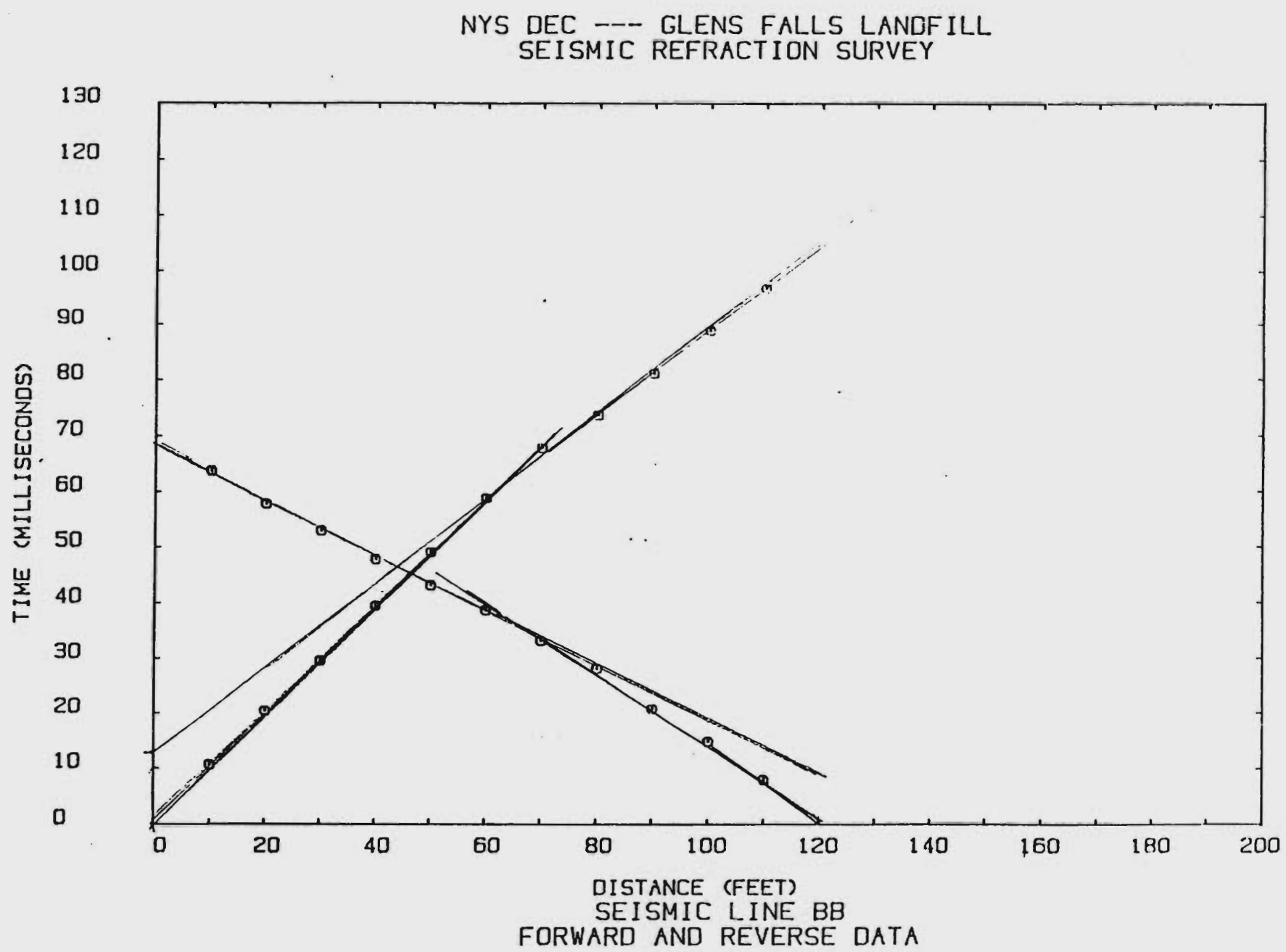


FIGURE 3
GEOPHYSICAL RESULTS
APPENDIX 4



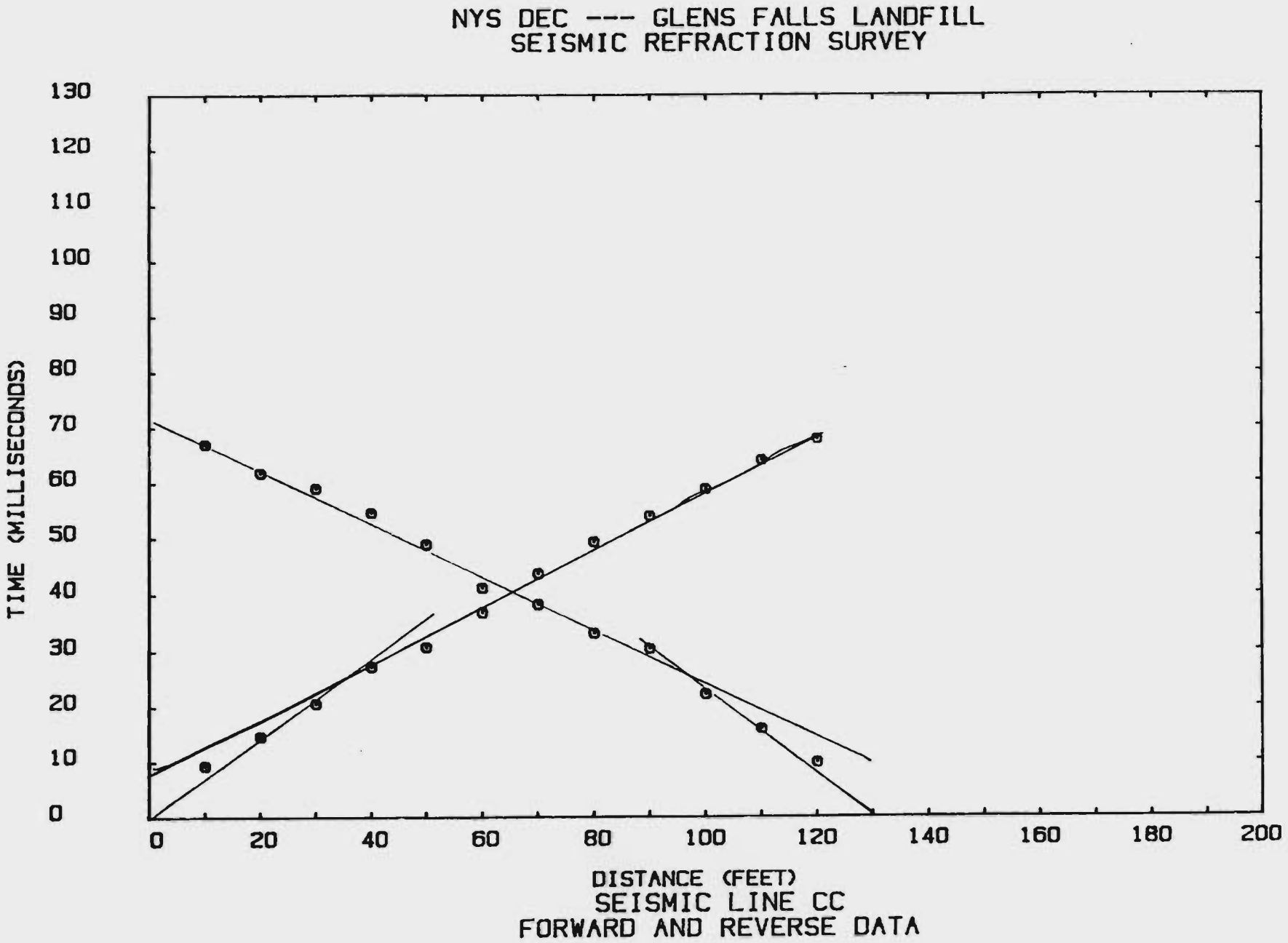
DRAFT 06/02/86

FIGURE 4
GEOPHYSICAL RESULTS
APPENDIX 4



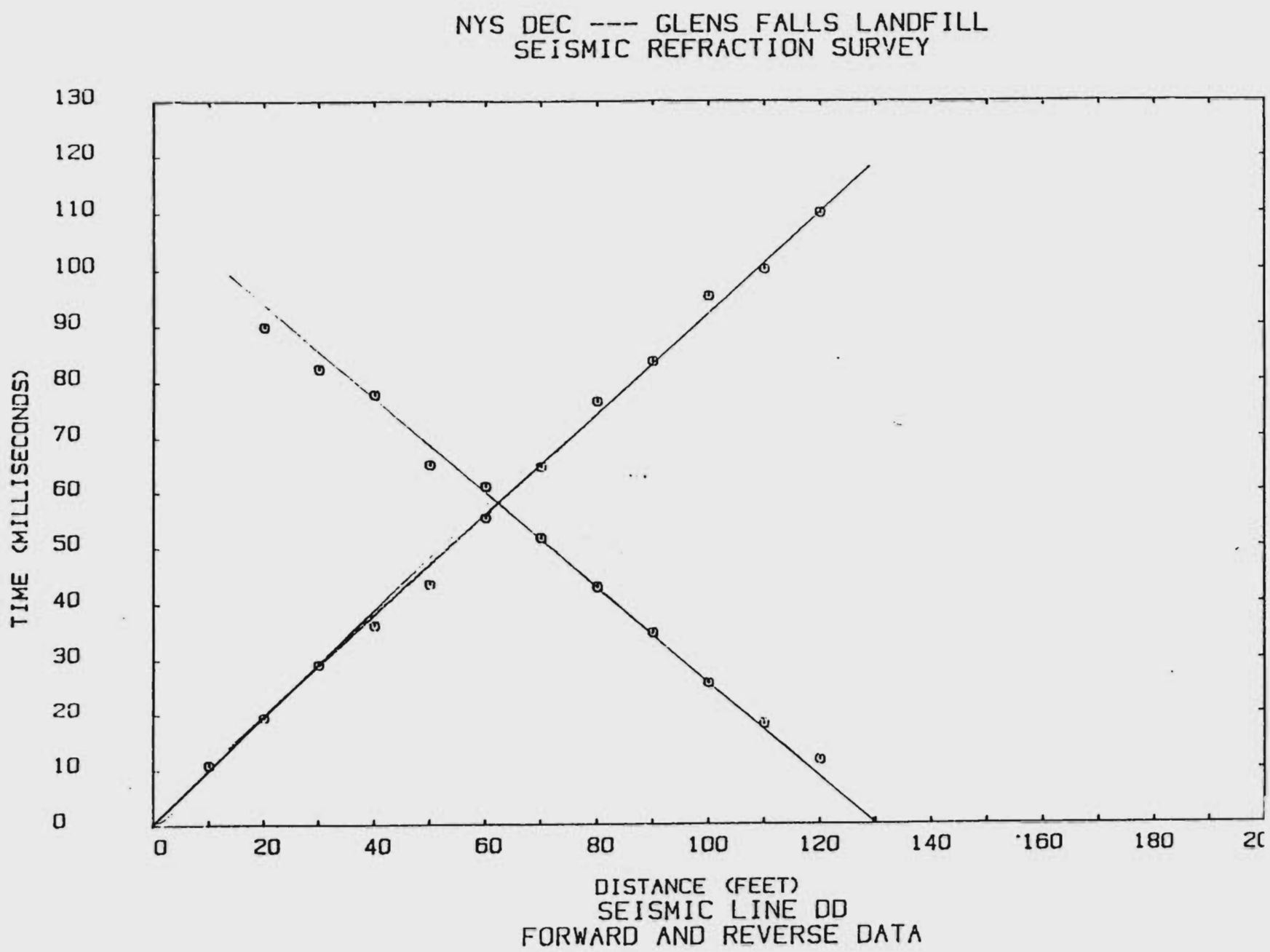
DRAFT 4/24/86

FIGURE 5
GEOPHYSICAL RESULTS
APPENDIX 4



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FIGURE 6
GEOPHYSICAL RESULTS
APPENDIX 4



DRAFT 4/24/86

FIGURE 7
GEOPHYSICAL RESULTS
APPENDIX 4

Geotechnical Results

SOIL ANALYTICAL TEST REPORT
NEW YORK STATE
DEPARTMENTAL OF ENVIRONMENTAL CONSERVATION

Glens Falls Landfill
Glens Falls, New York

PREPARED FOR: Andre LaPres and James Stachowski

PREPARED BY: Gustave Efotte

DATE: September 24, 1985

RE: Analytical Results - Soil Physical Properties

Attached are the analytical results of I.D. #5C280101.43. Physical properties of the following soil samples were determined:

Split Spoon Samples

Boring #	Sample #	Depth (ft.)
MW 101-1	SS-5	20-22
MW 101-1	SS-6	25-27
MW 101-2A	SS-5	20-22
MW 101-2	SS-6	22-24
MW 101-3	SS-5	20-22
MW 101-3	SS-6	22-24
MW 101-4	SS-3	10-12
MW 101-4	SS-4	12-14
MW 101-5	SS-5	20-22
MW 101-5	SS-6	22-24

Carmen M. Panuccio
Carmen M. Panuccio

CMP/pal
Attachment

CC: RGL Central File
RRI Central File

I.D. #5C280101.43

SOIL ANALYTICAL PROCEDURES
NEW YORK STATE
DEPARTMENTAL OF ENVIRONMENTAL CONSERVATION

Glens Falls Landfill
Glens Falls, New York

Report Date: 9-24-85

Soil samples, which were received by Recra Geotechnical Laboratory, were prepared and tested in accordance with procedures from the American Society for Testing and Materials (ASTM), 1985 Annual Book of ASTM Standards: Section 4 Construction, Volume 04.08 Soil and Rock; Building Stones, c-1985. The following standard test methods were utilized in whole or in part:

- o ASTM D 2216-80 Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures.
- o ASTM D 421-58 Dry Preparation of Soil Samples for Particle Size Analysis and Determination of Soil Constants.
- o ASTM D 1140-54 Amount of Material in Soils Finer than the No. 200 (0.075-mm) Seive.
- o ASTM D 422-63 Particle-Size Analysis of Soils.
- o ASTM D 4318-84 Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- o ASTM D 2487-83 Classification of Soils for Engineering Purposes.

FOR RECRA GEOTECHNICAL LABORATORY Carmen M. Panucci

DATE 9-24-85

I.D. # 5C280101.43

SOIL ANALYTICAL RESULTS
NEW YORK STATE
DEPARTMENTAL OF ENVIRONMENTAL CONSERVATION

Glens Falls Landfill
Glens Falls, New York

Report Date: 9-24-85

PARAMETER	UNITS OF MEASURE	SOIL SAMPLE IDENTIFICATION		
		MW 101-1 SS-5	MW 101-1 SS-6	MW 101-2A SS-5
Depth	feet	20-22	25-27	20-22
Blow Count (N)	blows/ft.	31	10	24
Moisture Content, Natural	%	13.1	18.2	23.0
Gravel (> 4.75 mm)	%	0.0	0.0	1.1
Sand (4.75 mm > and > 0.075 mm)	%	97.4	94.9	97.3
Silt and Clay (< 0.075 mm)	%	2.6	5.1	1.6
Coefficient of Uniformity (Cu)	-	2.3	2.0	2.9
Coefficient of Curvature (Cc)	-	1.1	1.0	1.1
Liquid Limit	%	-	NP	-
Plastic Limit	%	-	NP	-
Plasticity Index	%	-	NP	-
Flow Index (F_w)	%	-	-	-
Soil Classification	-	SP	SP-SM	SP
Soil Group Name	-	Poorly Graded Sand	Poorly Graded Sand with Silt	Poorly Graded Sand

Additional Soil Sample Information

Sample Date	7-11-85	7-11-85	7-12-85
Analysis Date: Moisture Content	9-4-85	9-4-85	9-4-85
Analysis Date: Particle Size	9-6-85	9-6-85	9-6-85
Analysis Date: Atterberg Limits	-	9-4-85	-

FOR RECRA GEOTECHNICAL LABORATORY Carmen M. Panucci

DATE 9-24-85

I.D.# 5C280101.43

SOIL ANALYTICAL RESULTS
NEW YORK STATE
DEPARTMENTAL OF ENVIRONMENTAL CONSERVATION

Glens Falls Landfill
Glens Falls, New York

Report Date: 9-24-85

PARAMETER	UNITS OF MEASURE	SOIL SAMPLE IDENTIFICATION		
		MW 101-2 SS-6	MW 101-3 SS-5	MW 101-3 SS-6
Depth	feet	22-24	20-22	22-24
Blow Count (N)	blows/ft.	86	20	29
Moisture Content, Natural	%	17.8	22.7	17.6
Gravel (> 4.75 mm)	%	0.0	0.1	0.0
Sand (4.75 mm > and > 0.075 mm)	%	95.2	97.6	93.7
Silt and Clay (< 0.075 mm)	%	4.8	2.3	6.3
Coefficient of Uniformity (Cu)	-	2.8	2.4	3.8
Coefficient of Curvature (Cz)	-	0.9	1.2	1.5
Liquid Limit	%	-	-	NP
Plastic Limit	%	-	-	NP
Plasticity Index	%	-	-	NP
Flow Index (F_w)	%	-	-	-
Soil Classification	-	SP	SP	SP-SM
Soil Group Name	-	Poorly Graded Sand	Poorly Graded Sand with Silt	Poorly Graded Sand with Silt

Additional Soil Sample Information

Sample Date	7-12-85	7-16-85	7-16-85
Analysis Date: Moisture Content	9-4-85	9-4-85	9-4-85
Analysis Date: Particle Size	9-6-85	9-6-85	9-6-85
Analysis Date: Atterberg Limits	-	-	9-4-85

FOR RECRA GEOTECHNICAL LABORATORY Carmen M. Panucci

DATE 9-24-85

I.D.# 5C280101.43

SOIL ANALYTICAL RESULTS
NEW YORK STATE
DEPARTMENTAL OF ENVIRONMENTAL CONSERVATION

Glens Falls Landfill
Glens Falls, New York

Report Date: 9-24-85

PARAMETER	UNITS OF MEASURE	SOIL SAMPLE IDENTIFICATION		
		MW 101-4 SS-3	MW 101-4 SS-4	MW 101-5 SS-5
Depth	feet	10-12	12-14	20-22
Blow Count (N)	blows/ft.	7	12	13
Moisture Content, Natural	%	24.3	25.1	22.0
Gravel (> 4.75 mm)	%	0.1	0.0	0.0
Sand (4.75 mm > and > 0.075 mm)	%	76.7	94.0	98.8
Silt and Clay (< 0.075 mm)	%	23.2	6.0	1.2
Coefficient of Uniformity (Cu)	-	-	3.2	2.1
Coefficient of Curvature (Cc)	-	-	1.2	1.0
Liquid Limit	%	5. -	NP	-
Plastic Limit	%	-	NP	-
Plasticity Index	%	-	NP	-
Flow Index (F_w)	%	-	-	-
Soil Classification	-	SC-SM	SP-SM	SP
Soil Group Name	-	Clayey, Silty sand	Poorly Graded Sand with Silt	Poorly Graded Sand

Additional Soil Sample Information

Sample Date	7-17-85	7-17-85	7-17-85
Analysis Date: Moisture Content	7-4-85	9-4-85	9-4-85
Analysis Date: Particle Size	9-6-85	9-6-85	9-6-85
Analysis Date: Atterberg Limits	-	9-4-85	-

FOR RECRA GEOTECHNICAL LABORATORY Carmen M. Panucci

DATE 9-24-85

I.D.# 5C280101.43

SOIL ANALYTICAL RESULTS
NEW YORK STATE
DEPARTMENTAL OF ENVIRONMENTAL CONSERVATION

Glens Falls Landfill
Glens Falls, New York

Report Date: 9-24-85

PARAMETER	UNITS OF MEASURE	SOIL SAMPLE IDENTIFICATION		
		MW 101-5		
		SS-6		
Depth	feet	22-24		
Blow Count (N)	blows/ft.	29		
Moisture Content, Natural	%	20.2		
Gravel (> 4.75 mm)	%	0.0		
Sand (4.75 mm > and > 0.075 mm)	%	97.1		
Silt and Clay (< 0.075 mm)	%	2.9		
Coefficient of Uniformity (Cu)	-	2.3		
Coefficient of Curvature (Cz)	-	1.0		
Liquid Limit	%	-		
Plastic Limit	%	-		
Plasticity Index	%	-		
Flow Index (F_w)	%	-		
Soil Classification	-	SP		
Soil Group Name	-	Poorly Graded Sand		

Additional Soil Sample Information

Sample Date	7-17-85		
Analysis Date: Moisture Content	9-4-85		
Analysis Date: Particle Size	9-6-85		
Analysis Date: Atterberg Limits	-		

FOR RECRA GEOTECHNICAL LABORATORY Carmen M. Panucci

DATE 9-24-85

I.D.# 5C280101.43

SOIL ANALYTICAL RESULTS
NEW YORK STATE
DEPARTMENTAL OF ENVIRONMENTAL CONSERVATION

Glens Falls Landfill
Glens Falls, New York

QUALITY CONTROL
NATURAL MOISTURE CONTENT

Report Date: 9-24-85

REPLICATE ANALYSIS OF SOIL SAMPLE MW 101-3 SS-6 (22-24 feet)

PARAMETER	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Natural Moisture Content	%	16.2	18.9	17.6	1.88	10.70

FOR RECRA GEOTECHNICAL LABORATORY Carmen M. Panucci

DATE 9-24-85

I.D. # 5C280101.43

SOIL ANALYTICAL RESULTS
NEW YORK STATE
DEPARTMENTAL OF ENVIRONMENTAL CONSERVATION

Glens Falls Landfill
Glens Falls, New York

QUALITY CONTROL
PARTICLE SIZE

Report Date: 9-24-85

REPLICATE ANALYSIS OF SOIL SAMPLE MW 101-3 SS-6 (22-24 feet)

PARAMETER	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Sand	%	94.4	93.0	93.7	0.93	1.06

REPLICATE ANALYSIS OF SOIL SAMPLE MW 101-3 SS-6 (22-24 feet)

PARAMETER	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Silt and Clay	%	5.6	7.0	6.3	0.93	14.82

FOR RECRA GEOTECHNICAL LABORATORY Carmen M. Ramundo

DATE 9-24-85

I.D. # 5C280101.43

SOIL ANALYTICAL NOTATIONS
NEW YORK STATE
DEPARTMENTAL OF ENVIRONMENTAL CONSERVATION

Glens Falls Landfill
Glens Falls, New York

Report Date: 9-24-85

1. Ten (10) samples were received by Recra Geotechnical Lab from Andre LaPres of Recra on August 8, 1985.

2. Blow counts of 100 plus/foot from the standard split spoon sampler are considered as refusal.

3. The following abbreviations may or have been used in this analytical report:

   WOR = Weight of rods (from drilling rig).
   WOH = Weight of hammer (from drilling rig).
   REF = Refusal (blow counts of 100 plus/foot).
   NP = Non-Plastic.

4. For samples MW 101-1 SS-6 (25-27 feet), MW 101-3 SS-6 (22-24 feet) and MW 101-4 SS-4 (12-14 feet), the liquid limit could not be determined, becaus the pats of soil failed to adhere to the dish of the liquid limit device. Plastic limit could not be determined, because the material could not be rolled into a thread of 1/8 inch diameter. Therefore, the samples were designated non-plastic.

5. For sample MW 101-4 SS-3 (10-12 feet), liquid and plastic limits could not be determined, because there was insufficient sample to perform the tests.

6. A complete particle size curve of the coarse materials (greater than 75 um) is provided for all samples except MW 101-4 SS-3 (10-12 feet).

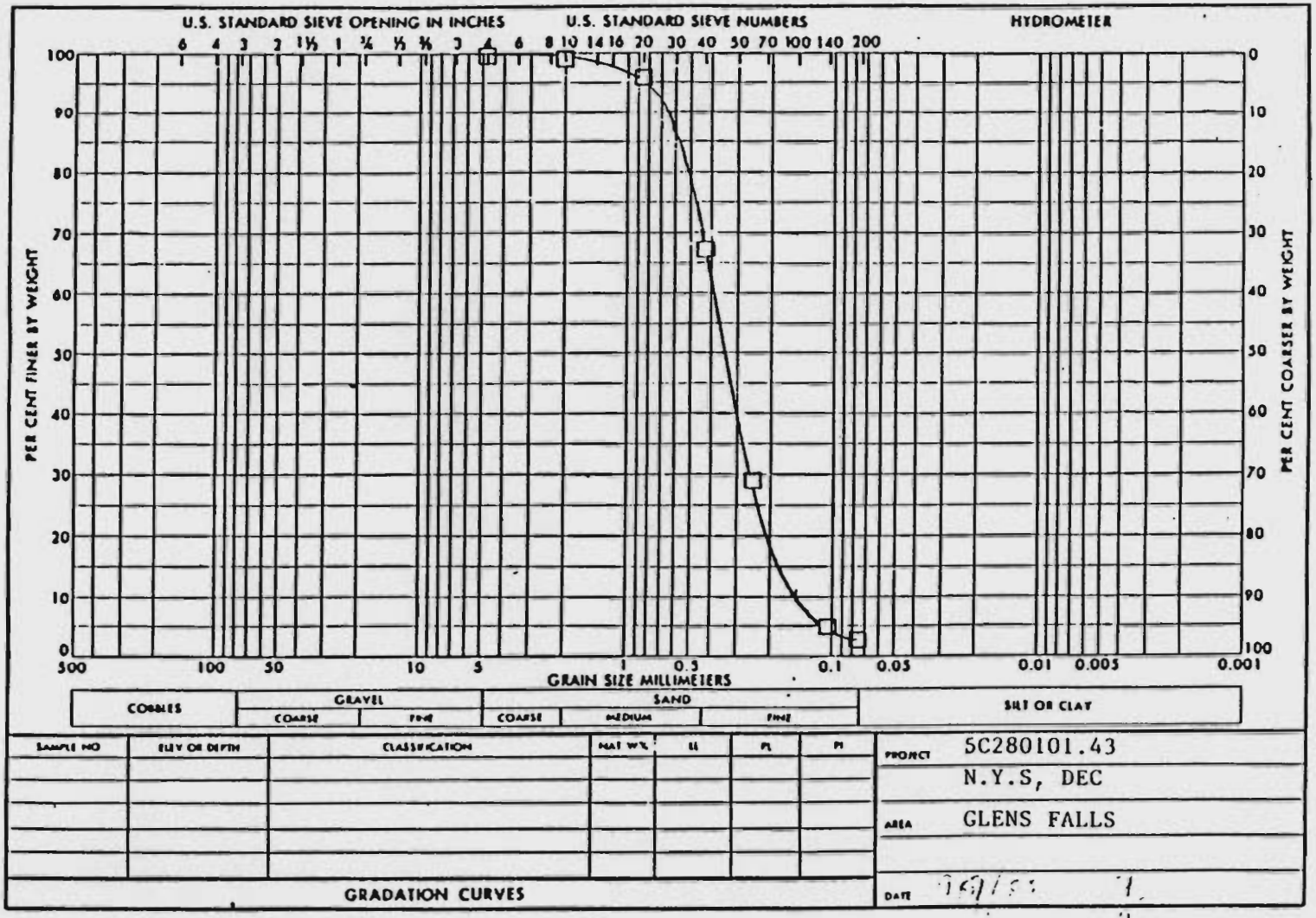
7. Note that a particle size curve for sample MW 101-4 SS-3 (10-12 feet) is not required for classification purposes.

8. Since chemical contaminants are suspected of being present (due to the nature of past site operations), respiratory protection was required during sample processing and testing. Therefore, the use of the symbol O for designating soils containing organic material will not be used for soil classification.

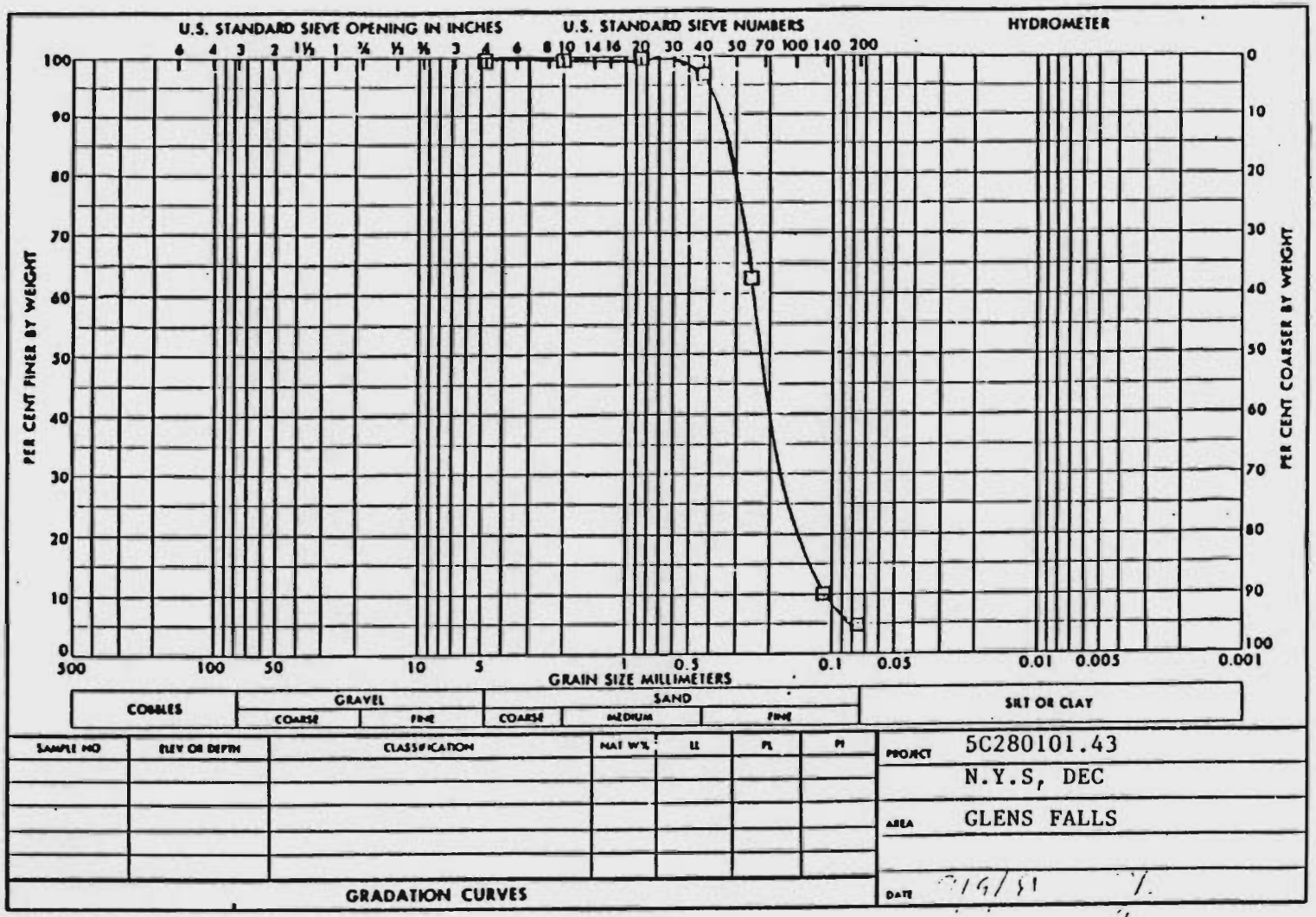
FOR RECRA GEOTECHNICAL LABORATORY Carmen M. Panucci

DATE 9-24-85

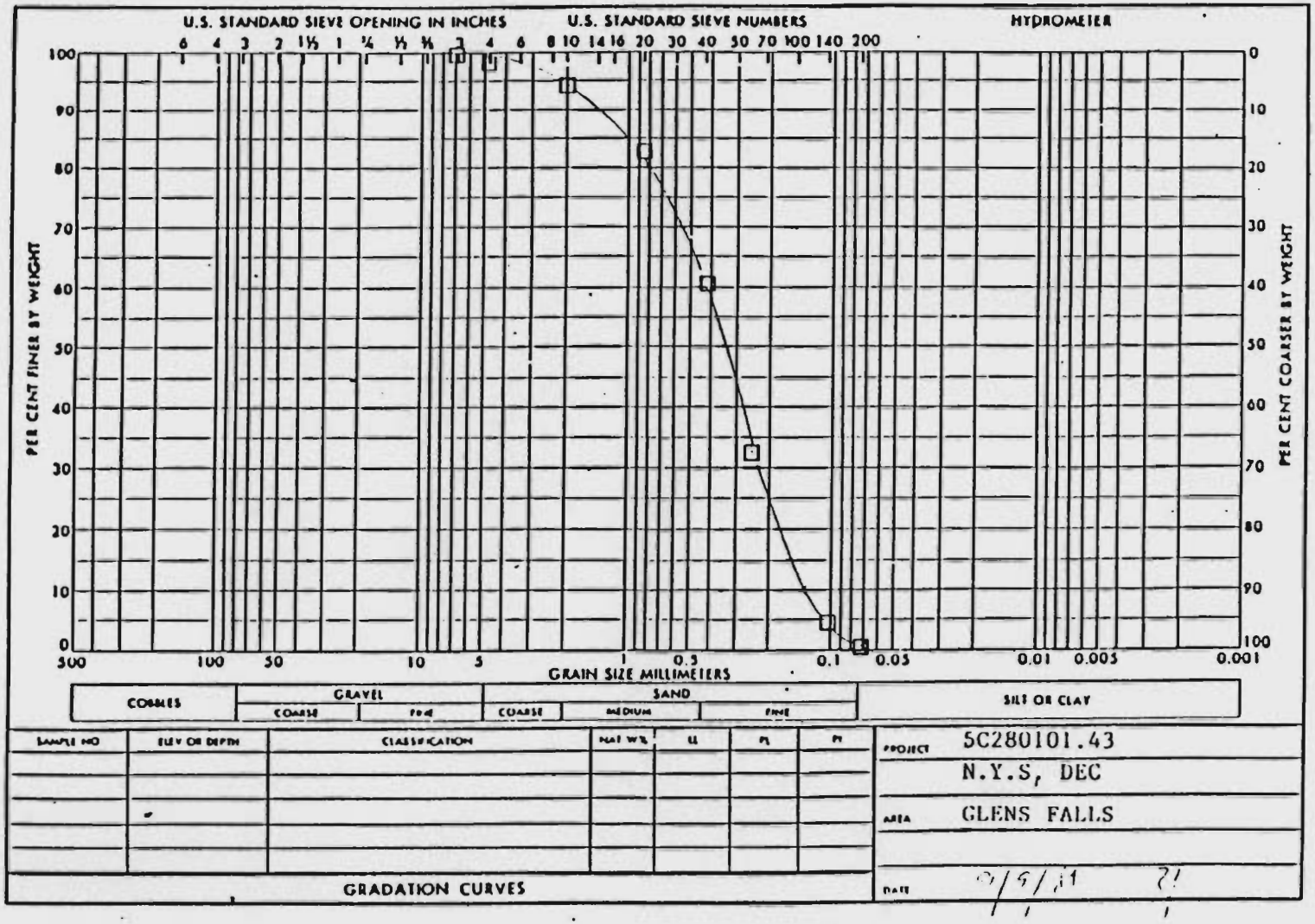
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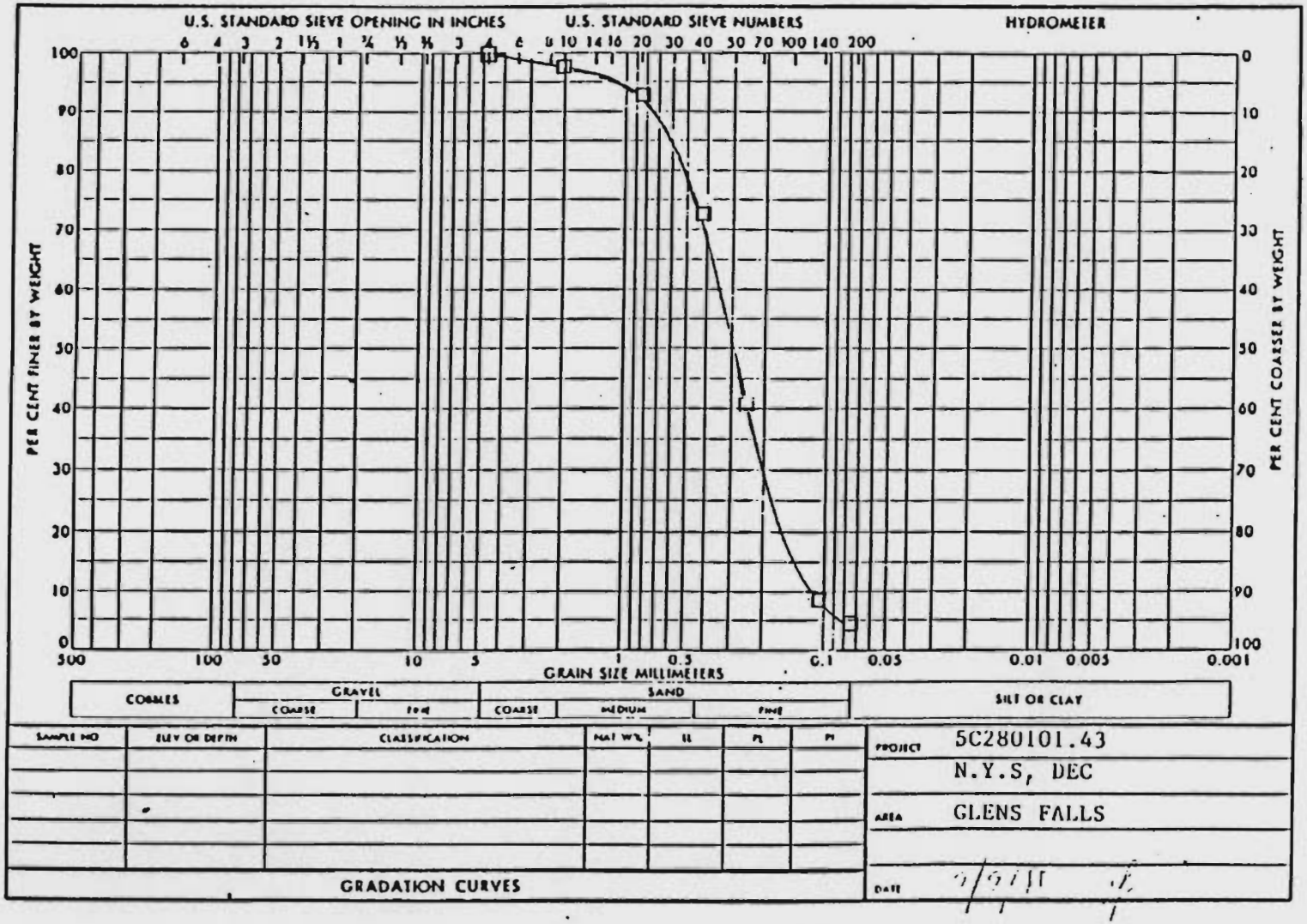
PARTICLE SIZE CURVE FOR SAMPLE #MW101-1 SS-5 (20-22 Feet)



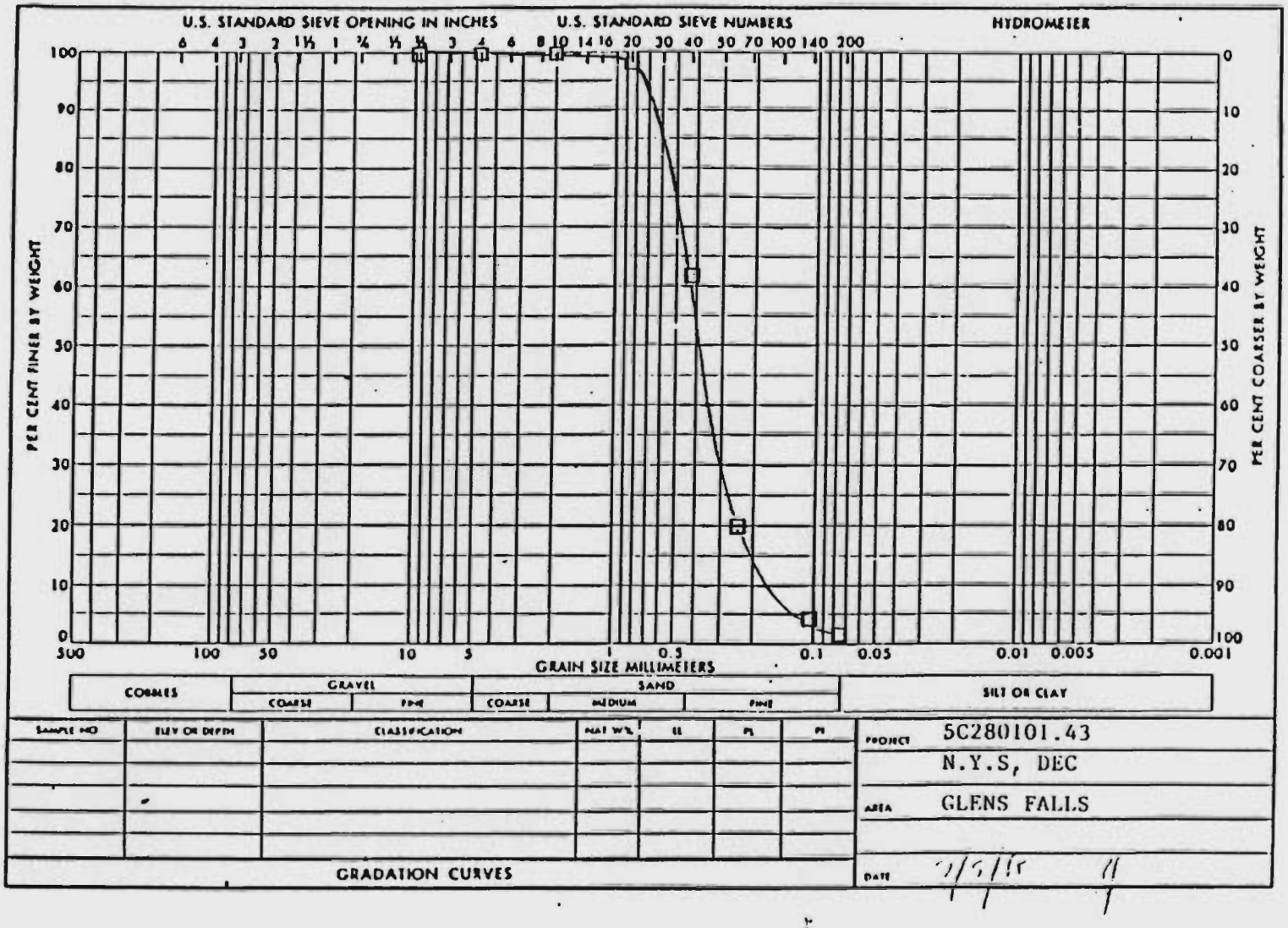
PARTICLE SIZE CURVE FOR SAMPLE #MW101-1 SS-6 (25-27 Feet)



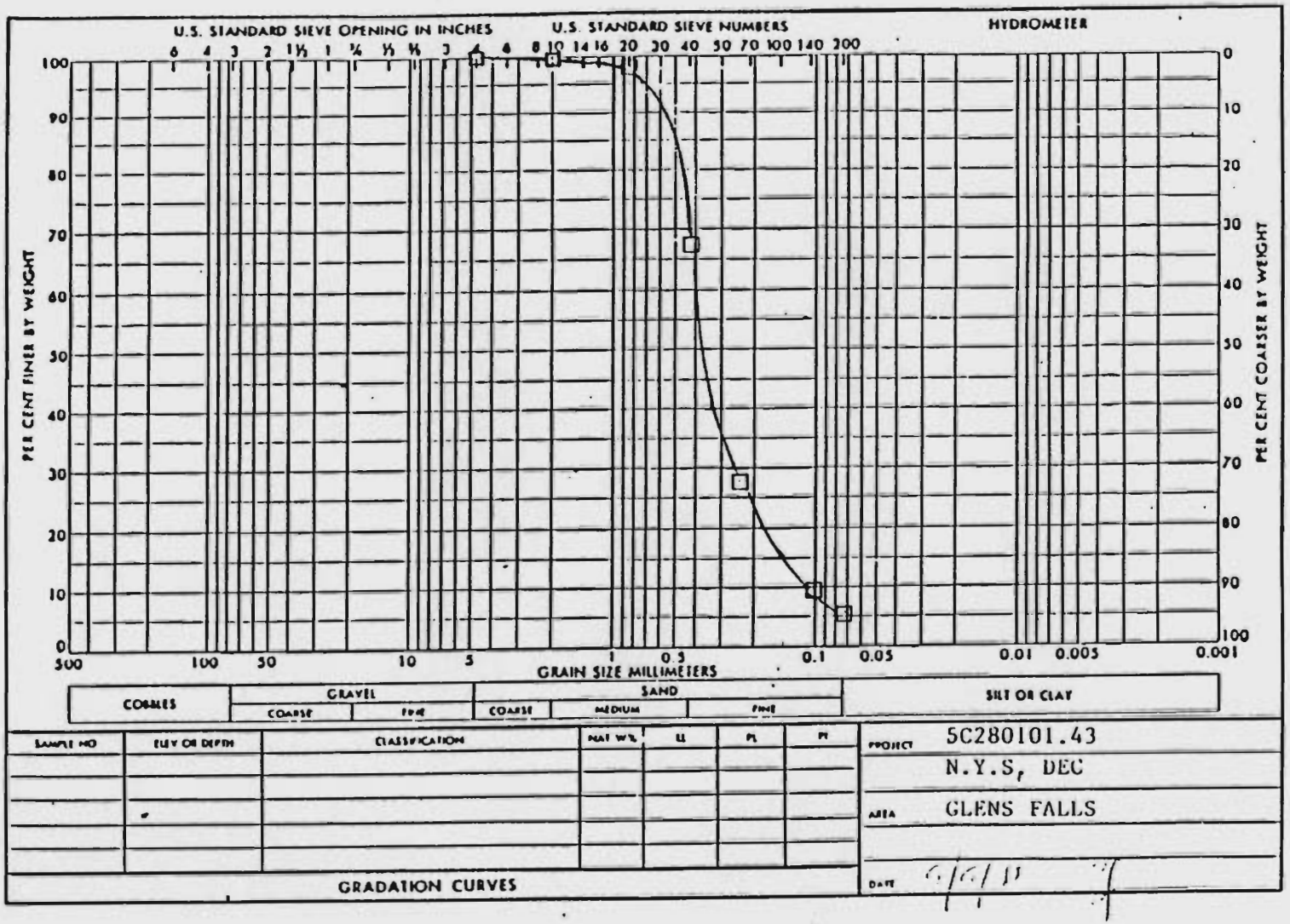
PARTICLE SIZE CURVE FOR SAMPLE #MW101-2A SS-5 (20-22 Feet)



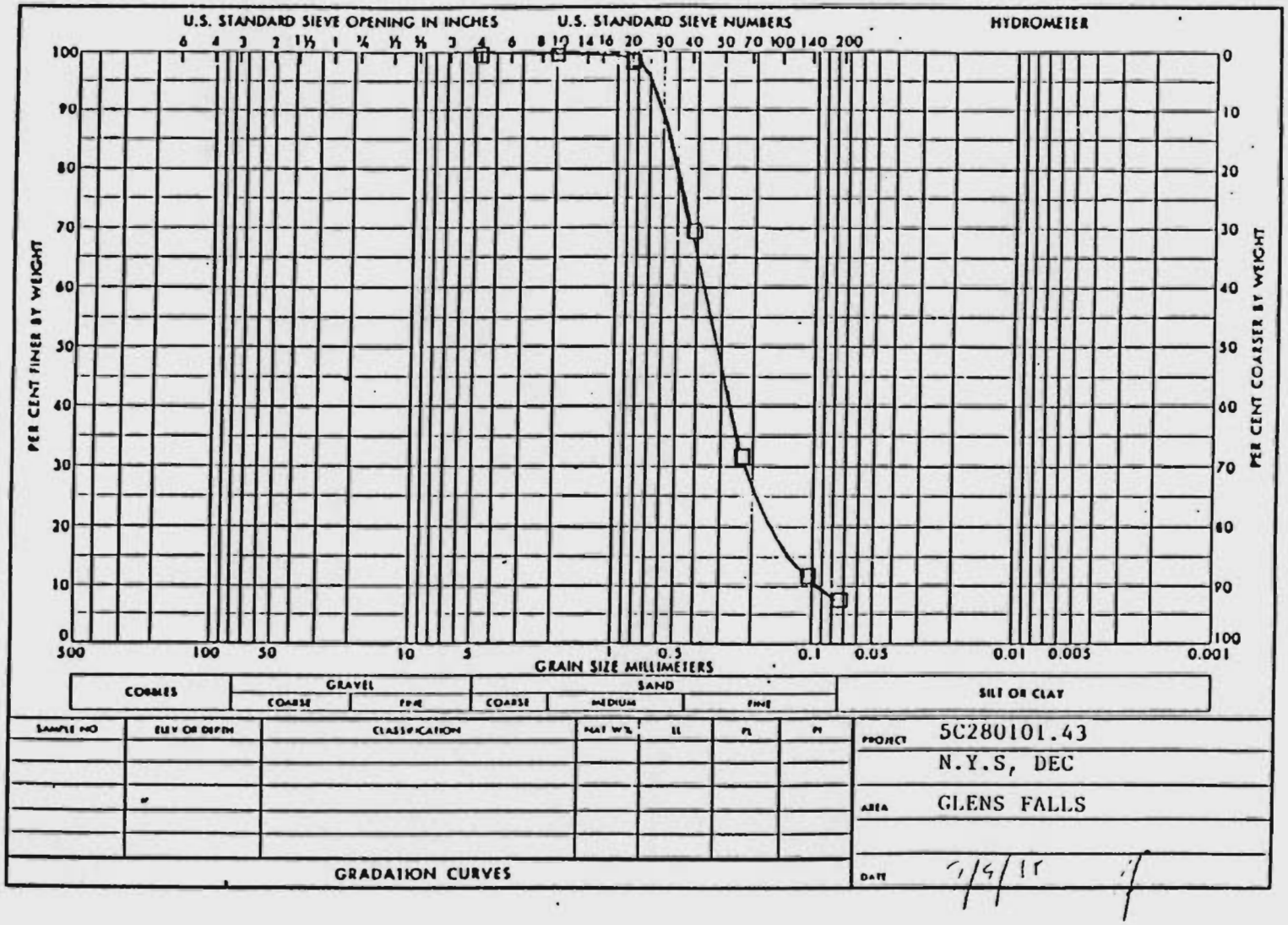
PARTICLE SIZE CURVE FOR SAMPLE #MW101-2 SS-6 (22-24 Feet)



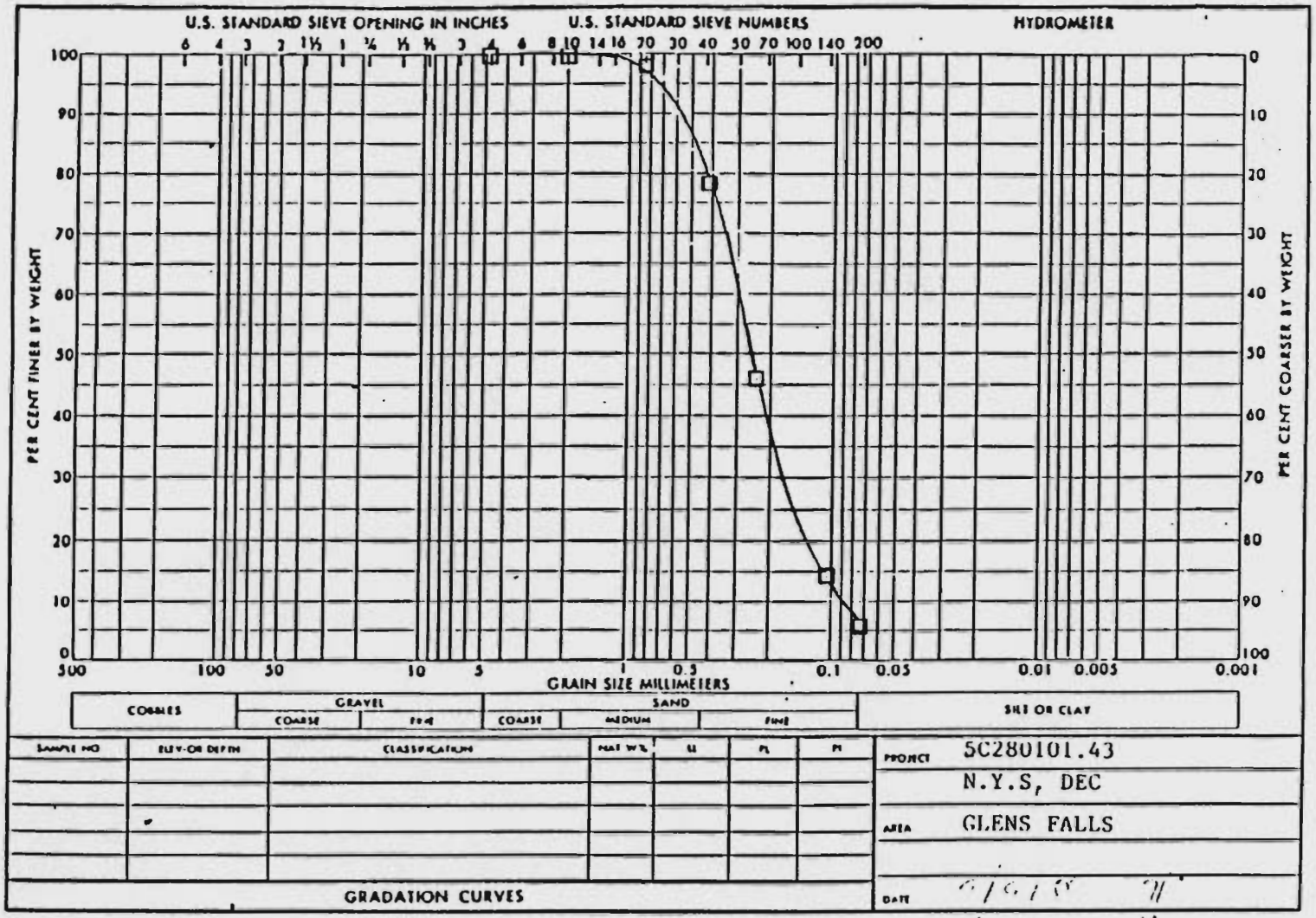
PARTICLE SIZE CURVE FOR SAMPLE #MW101-3 SS-5 (20-22 Feet)



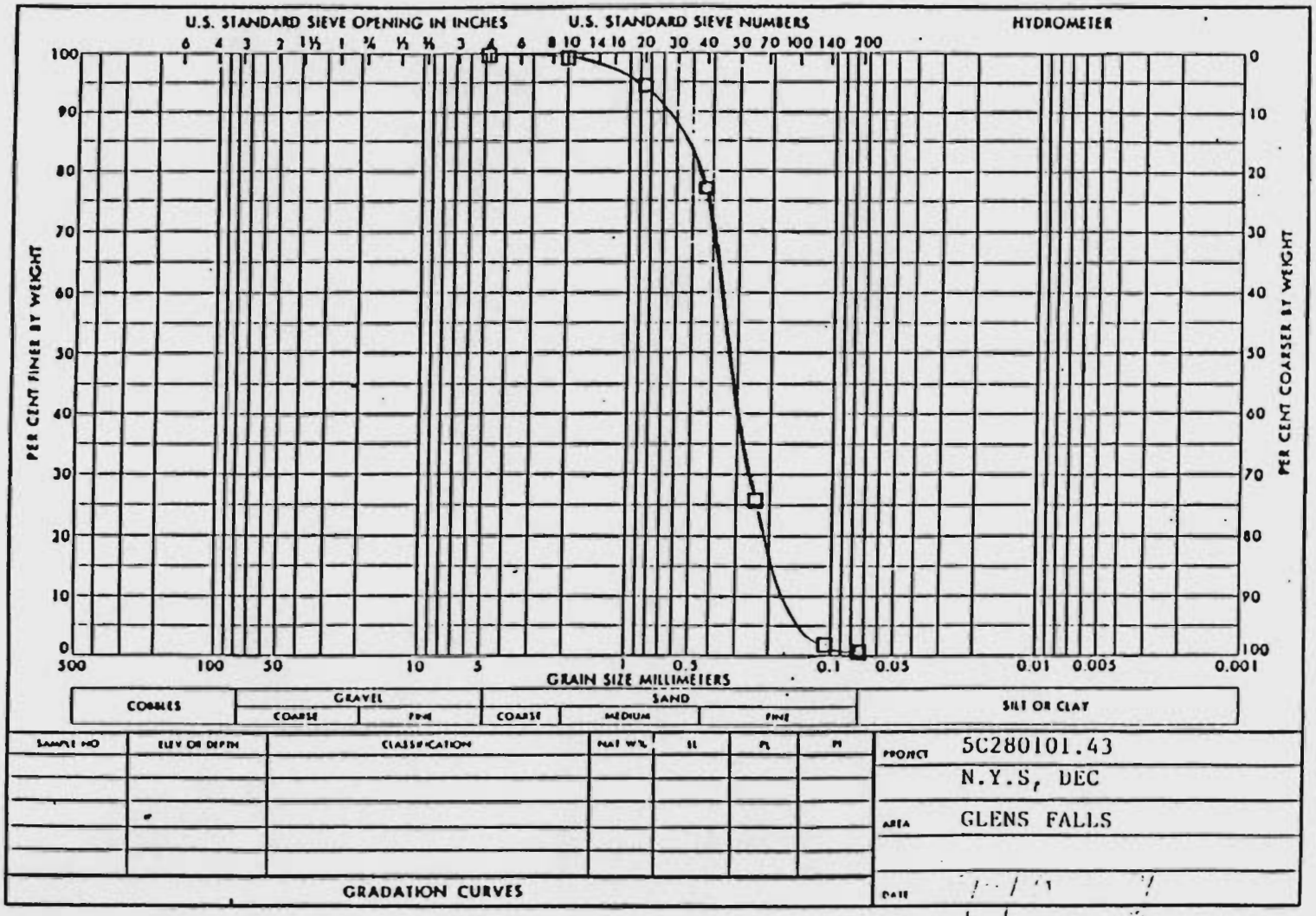
PARTICLE SIZE CURVE FOR SAMPLE #MW101-3 SS-6 (22-24 Feet)



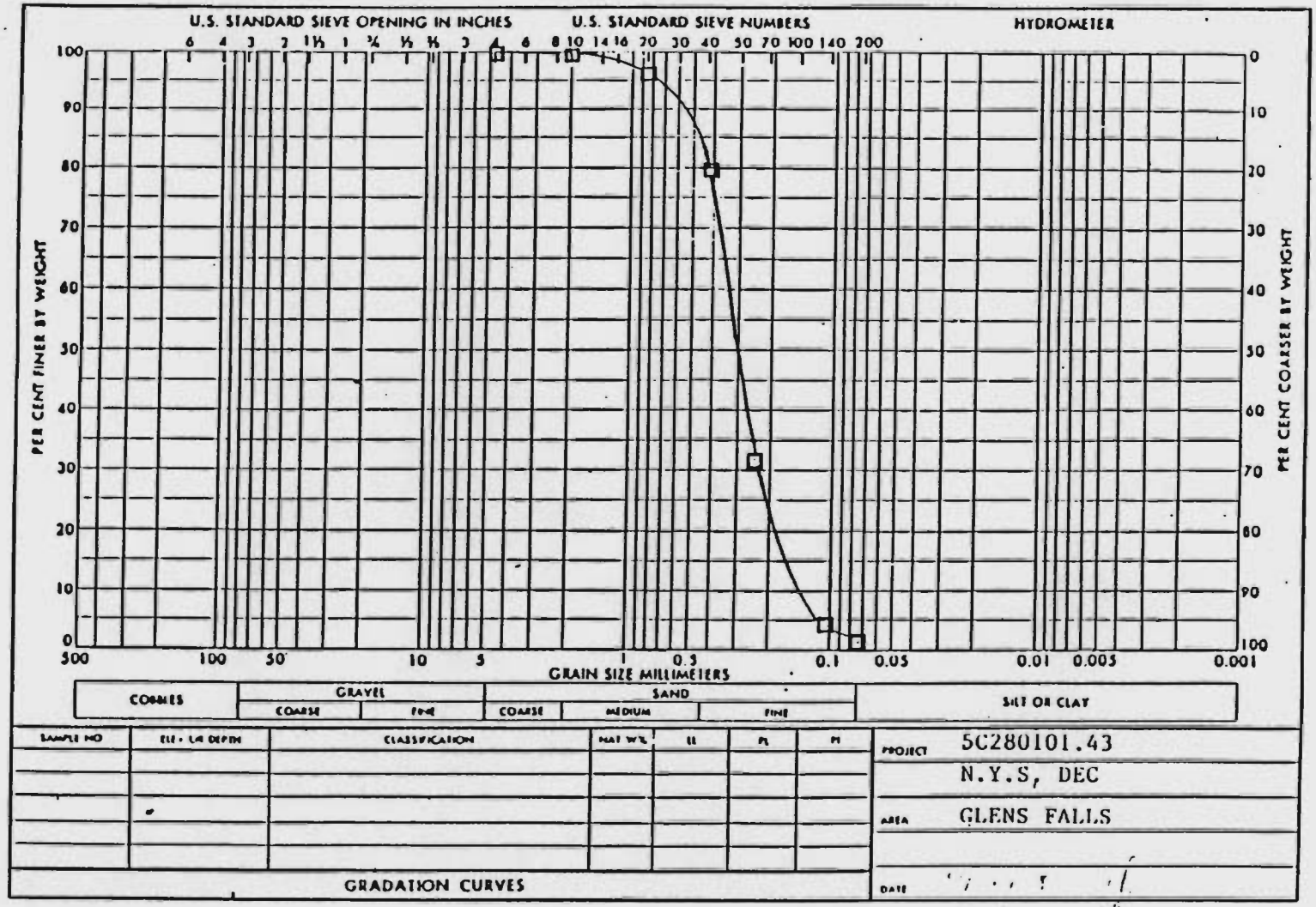
PARTICLE SIZE CURVE FOR SAMPLE #MW101-3 SS-6 (22-24 Feet) (REPLICATE)



PARTICLE SIZE CURVE FOR SAMPLE #MW101-4 SS-4 (12-14 Feet)



PARTICLE SIZE CURVE FOR SAMPLE #MW101-5 SS-5 (20-22 Feet)



PARTICLE SIZE CURVE FOR SAMPLE #MW101-5 SS-6 (22-24 Feet)

Permeability Calculations

ENGINEERING SERVICES

RECRA RESEARCH, INC.	Project No. SC280101	Job No.	Client NYSDEC	
	Project Title GLENS FALLS LF			Date 6-4-86
	Task Title PERM. CALC. CONT.			By PZ

Checked KC 6/4/86

MW-101-3 SS-5 (20-22')

$K_i = C d_{10}^2$

$K_i = \frac{1.0\ cm/mm^2\ (0.17mm)^2}{SEC}$

$K_i = 2.9 \times 10^{-2}\ cm/SEC$

$C = 1.0\ cm/mm^2/SEC$

$d_{10} = 0.17\ mm$

SS-6 (22-24')

$K_i = \frac{1.0\ cm/mm^2\ (0.10mm)^2}{SEC}$

$K_i = 1.0 \times 10^{-2}\ cm/SEC$

$d_{10} = 0.10\ mm$

MW-101-4 SS-4 (12-14')

$K_i = C d_{10}^2$

$K_i = \frac{1.0\ cm/mm^2\ (0.09mm)^2}{SEC}$

$K_i = 8.1 \times 10^{-3}\ cm/SEC$

$C = 1.0\ cm/mm^2/SEC$

$d_{10} = 0.09\ mm$

MW-101-5 SS-5 (20-22')

$K_i = C d_{10}^2$

$K_i = \frac{1.0\ cm/mm^2\ (0.17mm)^2}{SEC}$

$K_i = 2.9 \times 10^{-2}\ cm/SEC$

$C = 1.0\ cm/mm^2/SEC$

$d_{10} = 0.17\ mm$

SS-6 (22-24')

$K_i = \frac{1.0\ cm/mm^2\ (0.15mm)^2}{SEC}$

$K_i = 2.3 \times 10^{-2}\ cm/SEC$

$d_{10} = 0.15\ mm$

ENGINEERING SERVICES

RECRA RESEARCH, INC.	Project No. SC280101	Job No.	Client NYSDEC	
	Project Title GLENS FALLS LANDFILL			Date 6-4-86
	Task Title PERMEABILITY CALCULATIONS			By DPZ

Checked KC 6/4/86

MW-101-1 SS-5 (20-22')

$K_i = C d_{10}^2$

$K_i = \frac{1.0\ cm/mm^2}{SEC} (0.16\ mm)^2$

$K_i = 2.6 \times 10^{-2}\ cm/SEC$

$C = 1.0\ cm/mm^2/SEC$

$d_{10} = 0.16\ mm$

SS-6 (25-27')

$K_i = \frac{1.0\ cm/mm^2}{SEC} (0.11\ mm)^2$

$K_i = 1.2 \times 10^{-2}\ cm/SEC$

$C = 1.0\ cm/mm^2/SEC$

$d_{10} = 0.11\ mm$

MW-101-2A SS-5 (20-22')

$K_i = C d_{10}^2$

$K_i = \frac{1.0\ cm/mm^2}{SEC} (0.14\ mm)^2$

$K_i = 2.0 \times 10^{-2}\ cm/SEC$

$C = 1.0\ cm/mm^2/SEC$

$d_{10} = 0.14\ mm$

MW-101-2 SS-6 (22-24')

$K_i = C d_{10}^2$

$K_i = \frac{1.0\ cm/mm^2}{SEC} (0.12\ mm)^2$

$K_i = 1.4 \times 10^{-2}\ cm/SEC$

$C = 1.0\ cm/mm^2/SEC$

$d_{10} = 0.12\ mm$

Soil Analytical Results
Standard Analyses and
Priority Pollutant Analyses

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND SITE
GLENS FALLS LANDFILL

Report Date: 9/4/85

COMMENTS:

Comments pertain to data on one or all pages of this report.

Values reported as "less than" (<) indicate the working detection limit for the particular sample and/or parameter.

The chromatograms of the samples for PCB analyses were qualitatively screened for the presence of nine PCB mixtures (Aroclors). These include Aroclor 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262 and 1268.

Halogenated Organic Scan (ECD) results are used for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the chlorine content and response factor of Lindane but do not imply either the presence or absence of Lindane itself. Halogenated Organic Scan results do not include volatile organic constituents.

Volatile Halogenated Organic Scan results are used for screening purposes only and are not designed for qualification or quantification of specific organic compounds. Results are calculated based upon the chlorine content and response factor of Carbon Tetrachloride, but do not imply either the presence or absence of the compound itself.

Results of the analysis of soils are corrected for moisture content and reported on a dry weight basis.

The values for sample MW 101-1 SS-4 for Polychlorinated Biphenyls and Halogenated Organic Scan (ECD) represent the means of duplicate analyses.

FOR RECRA ENVIRONMENTAL LABORATORIES Frederick Boyle

DATE 9/4/85

I.D. #85-734

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND SITE
GLENS FALLS LANDFILL

Report Date: 9/4/85
Date Received: 7/12/85

PARAMETER	UNITS OF MEASURE	EXTRACTION DATE	ANALYSIS DATE	SAMPLE IDENTIFICATION (DATE)	
				MW 101-1 SS-4 (7/11/85)	MW 101-2 SS-4 (7/12/85)
Halogenated Organic Scan (ECD)	µg/g dry as Chlorine; Lindane Standard	7/22/85	7/30/85	<0.01	<0.01
Total Polychlorinated Biphenyls	µg/g dry as Aroclor 1242	7/22/85	7/30/85	<0.1	<0.1
Volatile Halogenated Organic Scan	µg/g dry as Chlorine; Carbon Tetrachloride Standard	-	7/16/85	<0.01	<0.01
Total Cadmium	µg/g dry	-	7/29/85	<2	<2
Total Chromium	µg/g dry	-	7/29/85	4.7	1.8
Hexavalent Chromium	µg/g dry	-	8/29/85	<0.09	<0.08
Total Copper	µg/g dry	-	7/22/85	9.8	2.9
Total Iron	µg/g dry	-	7/22/85	8,160	5,820
Total Lead	µg/g dry	-	7/26/85	5.9	4.8
Total Mercury	µg/g dry	-	8/15/85	<0.04	<0.03
Total Nickel	µg/g dry	-	7/23/85	14	5.5
Total Silver	µg/g dry	-	8/6/85	3.3	<0.8
Total Zinc	µg/g dry	-	7/22/85	25	15
Dry Weight (103°C)	%	-	-	94.2	96.7

FOR RECRA ENVIRONMENTAL LABORATORIES Frederick Bozek

DATE 9/4/85

D.V. Finn

9/4/85

I.D. #85-734

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
BUREAU OF HAZARDOUS WASTE
SUPERFUND SITE
GLENS FALLS LANDFILL

Report Date: 9/23/85
Date Received: 7/19/85

PARAMETER	UNITS OF MEASURE	EXTRACTION DATE	ANALYSIS DATE	SAMPLE IDENTIFICATION (DATE) MW101-3 SS-4 (7/16/85)
alogenated Organic Scan (ECD)	µg/g dry as Chlorine; Lindane Standard	8/6/85	8/25/85	<0.05
Total Polychlorinated Biphenyls	µg/g dry as Aroclor 1242	8/6/85	8/25/85	<0.06
olatile Halogenated Scan	µg/g dry as Chlorine; Carbon Tetrachloride Standard	-	7/26/85	<0.01
otal Cadmium	µg/g dry	-	8/13/85	<0.5
Total Chromium	µg/g dry	-	8/7/85	<2
exavalent Chromium	µg/g dry	-	8/20/85	<0.2
Total Copper	µg/g dry	-	8/26/85	3.2
otal Iron	µg/g dry	-	8/10/85	77
Total Mercury	µg/g dry	-	8/10/85	<0.04
otal Nickel	µg/g dry	-	8/6/85	6.9
otal Silver	µg/g dry	-	8/6/85	<0.9
otal Zinc	µg/g dry	-	8/26/85	16
otal Lead	µg/g dry	-	8/29/85	1.1
Dry Weight (103°C)	%	-	-	94.2

FOR RECRA ENVIRONMENTAL LABORATORIES John J. Duquesne

DATE 9/23/85

R.V. Finn

9/23/85

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND PHASE II
QUALITY CONTROL

Report Date: 2/6/86

POLYCHLORINATED BIPHENYLS
REPLICATE ANALYSIS OF
SAMPLE SP 101-1

PARAMETER	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Aroclor 1242	ug/g	0.25	0.28	0.27	0.021	9.8
Aroclor 1254	ug/g	0.070	0.086	0.078	0.011	15
Halogenated Organic Scan (ECD)	ug/g dry as Chlorine; Lindane Standard	0.12	0.13	0.13	0.0071	5.6

RECOVERY ANALYSIS OF
METHOD BLANK

PARAMETER	ng OF SPIKE	ng RECOVERED	% RECOVERY
Halogenated Organic Scan (ECD)	0.20	0.26	130

FOR RECRA ENVIRONMENTAL LABORATORIES Frederick Bozek

DATE 2/6/86

I.D. #85-1365

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND PHASE II
QUALITY CONTROL

Report Date: 2/6/86

REPLICATE ANALYSIS

PARAMETER	SAMPLE I.D.	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Total Cadmium	SP 101-1	ug/g	<0.5	<0.5	<0.5	-	-
Total Chromium	SP 101-1	ug/g	2.83	3.79	3.31	0.68	20.5
Hexavalent Chromium	SP 101-1	ug/g	0.020	0.018	0.019	0.0009	4.9
Total Copper	SP 101-1	ug/g	3.76	5.20	4.48	1.02	22.7
Total Iron	SP 101-1	ug/g	9,200	9,670	9,440	330	3.5
Total Lead	SP 101-1	ug/g	3.24	3.90	3.57	0.47	13.2
Total Mercury	SP 101-1	ug/g	<0.01	<0.01	<0.01	-	-
Total Nickel	SP 101-1	ug/g	1.01	2.17	1.59	0.82	51.8
Total Silver	SP 101-1	ug/g	<0.7	<0.7	<0.7	-	-
Total Zinc	SP 101-1	ug/g	18.4	38.8	28.6	14.4	50.5

FOR RECRA ENVIRONMENTAL LABORATORIES D. V. Zuri

DATE 2/6/86

I.D. #85-1365

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND PHASE II
QUALITY CONTROL

Report Date: 2/6/86

RECOVERY ANALYSIS

PARAMETER	SAMPLE I.D.	µg OF SPIKE	µg RECOVERED	% RECOVERY
Total Cadmium	SP 101-1	500	495	99
Total Chromium	SP 101-1	500	470	94
Hexavalent Chromium	SP 101-1	500	435	87
Total Copper	SP 101-1	500	500	100
Total Iron	SP 101-1	500	515	103
Total Lead	SP 101-1	5,000	5,650	113
Total Mercury	SP 101-1	0.4	0.344	86
Total Nickel	SP 101-1	5,000	4,700	94
Total Silver	SP 101-1	500	500	100
Total Zinc	SP 101-1	500	490	98

FOR RECRA ENVIRONMENTAL LABORATORIES D.V. Zinn

DATE 2/6/86

I.D. #85-1365
RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND PHASE II

Report Date: 2/6/86

PARAMETER	UNITS OF MEASURE	EXTRACTION DATE	ANALYSIS DATE	SAMPLE IDENTIFICATION (DATE) HA-101-1 (11/6/85)	HA-101-2 (11/6/85)
Halogenated Organic Scan (ECD)	µg/g dry as Chlorine; Lindane Standard	11/12/85	12/4/85	0.075	99
Total Polychlorinated Biphenyls	µg/g dry as Aroclor 1254	11/12/85	12/4/85	<0.2	160
Volatile Halogenated Organic Scan	µg/g dry as Chlorine; Carbon Tetrachloride Standard	-	11/18/85	<0.01	<0.01
Total Cadmium	µg/g dry	-	11/20/85	<0.4	<0.5
Total Chromium	µg/g dry	-	12/3/85	2.54	4.99
Hexavalent Chromium	µg/g dry	-	12/4/85	0.017	0.033
Total Copper	µg/g dry	-	11/27/85	3.50	6.07
Total Iron	µg/g dry	-	11/27/85	10,500	6,160
Total Lead	µg/g dry	-	11/18/85	1.63	4.26
Total Mercury	µg/g dry	-	12/18/85	0.035	0.045
Total Nickel	µg/g dry	-	11/9/85	2.73	1.97
Total Silver	µg/g dry	-	11/25/85	<0.6	<0.7
Total Zinc	µg/g dry	-	11/25/85	19.6	33.2
Dry Weight (103°C)	%	-	-	89.1	89.9

FOR RECRA ENVIRONMENTAL LABORATORIES Frederick Bozek

DATE 2/6/86

C. V. Fiore

2/6/86

I.D. #85-1365

RECRA ENVIRONMENTAL LABORATORIES

SP

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: RECRA ENVIRONMENTAL LABORATORIES Case No: D000451

Lab Sample ID No: 17946 QC Report No: _____

Sample Matrix: SOIL Contract No: 50-70-03

Data Release Authorized By: _____ Date Sample Received: JANUARY 16, 1986

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: JANUARY 25, 1986

Conc/Dil Factor: _____ pH _____

Percent Moisture: _____

Percent Moisture (Decanted): _____

CAS Number		ug/l or (ug/Kg) (Circle One)	
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	40	B
67-64-1	Acetone	292	B
75-15-0	Carbon Disulfide	5	B J
75-35-4	1, 1-Dichloroethene	5	U
75-34-3	1, 1-Dichloroethane	5	U
156-60-5	Trans-1, 2-Dichloroethene	5	U
67-66-3	Chloroform	73	B
107-06-2	1, 2-Dichloroethane	5	U
78-93-3	2-Butanone	66	B
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

CAS Number		ug/l or (ug/Kg) (Circle One)	
79-34-5	1, 1, 2, 2-Tetrachloroethane	5	U
78-87-5	1, 2-Dichloropropane	5	U
10061-02-6	Trans-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	cis-1, 3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	B J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used Additional flags or footnotes explaining results are encouraged However the definition of each flag must be explicit

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 an 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

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

Other Other specific flags and footnotes may be required to properly define the results If used they must be fully described and such description attached to the data summary report

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: JANUARY 23, 1986

Date Analyzed: MARCH 3, 1986

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)	
62-75-9	N-Nitrosodimethylamine	330	U
108-95-2	Phenol	330	U
62-53-3	Aniline	330	U
111-44-4	bis(-2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1, 3-Dichlorobenzene	330	U
106-46-7	1, 4-Dichlorobenzene	330	J
100-51-6	Benzyl Alcohol	330	U
95-50-1	1, 2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
39638-32-9	bis(2-chloroisopropyl)Ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2, 4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1600	U
111-91-1	bis(-2-Chloroethoxy)Methane	330	U
120-83-2	2, 4-Dichlorophenol	330	U
120-82-1	1, 2, 4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	J
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	J
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2, 4, 6-Trichlorophenol	330	U
95-95-4	2, 4, 5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	330	U
208-96-8	Acenaphthylene	330	U
99-09-2	3-Nitroaniline	1600	U

CAS Number		ug/l or ug/Kg (Circle One)	
83-32-9	Acenaphthene	330	U
51-28-5	2, 4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	330	J
121-14-2	2, 4-Dinitrotoluene	330	U
606-20-2	2, 6-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4, 6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	330	J
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	330	B/J
206-44-0	Fluoranthene	330	B/J
92-87-5	Benzidine	1600	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3, 3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)Anthracene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
218-01-9	Chrysene	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	330	U
53-70-3	Dibenz(a, h)Anthracene	330	U
191-24-2	Benzo(g, h, i)Perylene	330	U

(1)-Cannot be separated from diphenylamine

Environmental Protection Agency, CLP Sample Management Office,
P. O Box 818, Alexandria, Virginia 22313 703/557-2490

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 1/22/86

Date Analyzed: 2/25/86

Conc/Dil Factor: DF = 25

CAS Number		ug/l or (ug/Kg) (Circle One)
319-84-6	Alpha-BHC	10 U
319-85-7	Beta-BHC	10 U
319-86-8	Delta-BHC	20 U
58-89-9	Gamma-BHC (Lindane)	20 U
76-44-8	Heptachlor	20 U
309-00-2	Aldrin	20 U
1024-57-3	Heptachlor Epoxide	60 U
959-98-8	Endosulfan I	20 U
60-57-1	Dieldrin	20 U
72-55-9	4, 4'-DDE	20 U
72-20-8	Endrin	60 U
33213-65-9	Endosulfan II	70 U
72-54-8	4, 4'-DDD	70 U
7421-93-4	Endrin Aldehyde	40 U
1031-07-8	Endosulfan Sulfate	70 U
50-29-3	4, 4'-DDT	70 U
72-43-5	Methoxychlor	400 U
53494-70-5	Endrin Ketone	200 U
57-74-9	Chlordane	400 U
8001-35-2	Toxaphene	900 U
12674-11-2	Aroclor-1016	900 U
11104-28-2	Aroclor-1221	900 U
11141-16-5	Aroclor-1232	900 U
53469-21-9	Aroclor-1242	900 U
12672-29-6	Aroclor-1248	1400 ←
11097-69-1	Aroclor-1254	1100 ←
11096-82-5	Aroclor-1260	900 U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s 30.24 g V_t 1000 ml V_i 1.3 ml

% dry = 34.3

Form I

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

SP

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO ADDITIONAL compounds detected	VOA	—	—
2.		—	—	—	—
3.	—	(Unknown substituted AROMATIC hydrocarbon	BN/AP	91	3.6
4.	—	UNKNOWN		101	110
5.	—	UNKNOWN		230	1.1
6.	98-82-8	Benzene (1-methylethyl)		236	1.4
7.	—	UNKNOWN - substituted aliphatic hydrocarbon		773	2.3
8.	—	UNKNOWN - SUBSTITUED Aliphatic		954	1.4
9.	—	UNKNOWN - SUBSTITUED aliphatic hydrocarbon		1052	1.9
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 1056

LABORATORY: IT/CERR
LABORATORY ID: 33956H3
MATRIX: SOIL

CASE #/SAS #: IT-6620__
QC REPORT #: 662003-4
CONTRACT #: PC-4610
DATE RECEIVED: 08/02/85

DATA RELEASE AUTHORIZED BY: Cheryl Gilbert

VOLATILE COMPOUNDS

LEVEL:	LOW
DATE EXT/PREP:	08/12/85
DATE ANALYZED:	08/12/85
SPL-->EXTRACT:	1.008 G.
PH:	9.1
% MOISTURE:	12.9H
% MOISTURE (DECANTED):	Not Analyzed
STANDARD ID:	VOH523
SENSITIVITY ID:	BFH436
UNITS:	UG/KG

PP #	CAS #		CONC
45V	74-87-3	CHLOROMETHANE	50. U
46V	74-83-9	BROMOMETHANE	50. U
88V	75-01-4	VINYL CHLORIDE	50. U
16V	75-00-3	CHLOROETHANE	50. U
44V	75-09-2	METHYLENE CHLORIDE	100. B
13H	67-64-1	ACETONE	50. U
15H	75-15-0	CARBON DISULFIDE	30. U
29V	75-35-4	1,1-DICHLOROETHENE	44. ←
13V	75-34-3	1,1-DICHLOROETHANE	30. U
30V	156-60-5	TRANS-1,2-DICHLOROETHENE	30. U
23V	67-66-3	CHLOROFORM	30. U
10V	107-06-2	1,2-DICHLOROETHANE	30. U
14H	78-93-3	2-BUTANONE	50. U
11V	71-55-6	1,1,1-TRICHLOROETHANE	30. U
6V	56-23-5	CARBON TETRACHLORIDE	30. U
19H	108-05-4	VINYL ACETATE	50. U
48V	75-27-4	BROMODICHLOROMETHANE	30. U
15V	79-34-5	1,1,2,2-TETRACHLOROETHANE	30. U
32V	78-87-5	1,2-DICHLOROPROPANE	30. U
33VT	10061-02-6	TRANS-1,3-DICHLOROPROPENE	30. U
87V	79-01-6	TRICHLOROETHENE	30. U
51V	124-48-1	CHLORODIBROMOMETHANE	30. U
14V	79-00-5	1,1,2-TRICHLOROETHANE	30. U
4V	71-43-2	BENZENE	10. J
33VC	10061-01-5	CIS-1,3-DICHLOROPROPENE	30. U
19V	110-75-8	2-CHLOROETHYLVINYL ETHER	50. U
47V	75-25-2	BROMOFORM	30. U
16H	519-78-6	2-HEXANONE	50. U
17H	108-10-1	4-METHYL-2-PENTANONE	50. U
85V	127-18-4	TETRACHLOROETHENE	30. U
86V	108-88-3	TOLUENE	30. U
7V	108-90-7	CHLOROBENZENE	30. U
38V	100-41-4	ETHYLBENZENE	30. U
18H	100-42-5	STYRENE	30. U
20H	95-47-6	TOTAL XYLENES	30. U

ALL RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 10568

LABORATORY: IT/CERR
LABORATORY ID: 33956F4
MATRIX: SOIL

CASE #/SAS #: IT-6620C_
QC REPORT #: 662003-4
CONTRACT #: PC4610
DATE RECEIVED: 08/02/85

DATA RELEASE AUTHORIZED BY: Chrysler Suhl

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL:	LOW
DATE EXT/PREP:	08/07/85
DATE ANALYZED:	08/29/85
SPL-->EXTRACT:	50.47G: 1ML
PH:	8.1
% MOISTURE:	12.9
% MOISTURE (DECANTED):	Not Analyzed
STANDARD ID:	BNAZ235
SENSITIVITY ID:	SENS613
UNITS:	UG/KG

PP #	CAS #		CONC
61B	62-75-9	N-NITROSODIMETHYLAMINE	200. U
65A	108-95-2	PHENOL	200. U
5H	62-53-3	ANILINE	200. U
18B	111-44-4	BIS(2-CHLOROETHYL)ETHER	200. U
24A	95-57-8	2-CHLOROPHENOL	200. U
26B	541-73-1	1,3-DICHLOROBENZENE	200. U
27B	106-46-7	1,4-DICHLOROBENZENE	200. U
6H	100-51-6	BENZYL ALCOHOL	200. U
25B	95-50-1	1,2-DICHLOROBENZENE	200. U
2H	95-48-7	2-METHYLPHENOL	200. U
42B	39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	200. U
3H	106-44-5	4-METHYLPHENOL	200. U
63B	621-64-7	N-NITROSODIPROPLYAMINE	200. U
12B	67-72-1	HEXACHLOROETHANE	200. U
56B	98-95-3	NITROBENZENE	200. U
54B	78-59-1	ISOPHORONE	200. U
57A	88-75-5	2-NITROPHENOL	200. U
34A	105-67-9	2,4-DIMETHYLPHENOL	200. U
1H	65-85-0	BENZOIC ACID	1000. U
43B	111-91-1	BIS(2-CHLOROETHOXY)METHANE	200. U
31A	120-33-2	2,4-DICHLOROPHENOL	200. U
8B	120-82-1	1,2,4-TRICHLOROBENZENE	200. U
55B	91-20-3	NAPHTHALENE	200. U
7H	106-47-8	4-CHLOROANILINE	200. U
52B	87-68-3	HEXACHLOROBUTADIENE	200. U
22A	59-50-7	4-CHLORO-3-METHYLPHENOL	200. U
9H	91-57-6	2-METHYLNAPHTHALENE	200. U
53B	77-47-4	HEXACHLOROCYCLOPENTADIENE	200. U
21A	88-06-2	2,4,6-TRICHLOROPHENOL	200. U
4H	95-95-4	2,4,5-TRICHLOROPHENOL	1000. U
20B	91-58-7	2-CHLORONAPHTHALENE	200. U
10H	88-74-4	2-NITROANILINE	1000. U
71B	131-11-3	DIMETHYL PHTHALATE	200. U
77B	208-96-8	ACENAPHTHYLENE	200. U
11H	99-09-2	3-NITROANILINE	1000. U

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 10568-

LABORATORY: IT/CERR
LABORATORY ID: 33956F4
MATRIX: SOIL

CASE #/SAS #: IT-662003
QC REPORT #: 662003-4
CONTRACT #: PC4610
DATE RECEIVED: 08/02/85

DATA RELEASE AUTHORIZED BY: Cheryl Stahl

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW
DATE EXT/PREP:	08/07/85
DATE ANALYZED:	08/29/85
SPL-->EXTRACT:	50.47G: 1ML
PH:	9.1
% MOISTURE:	12.94
% MOISTURE (DECANTED):	Not Analyzed
STANDARD ID:	BNAZ235
SENSITIVITY ID:	SENS613
UNITS:	UG/KG

PP #	CAS #		CONC
1B	83-32-9	ACENAPHTHENE	200. U
59A	51-28-5	2,4-DINITROPHENOL	1000. U
58A	100-02-7	4-NITROPHENOL	1000. U
8H	132-64-9	DIBENZOFURAN	200. U
35B	121-14-2	2,4-DINITROTOLUENE	200. U
36B	606-20-2	2,6-DINITROTOLUENE	200. U
70B	84-66-2	DIETHYL PHTHALATE	200. U
40B	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	200. U
80B	86-73-7	FLUORENE	200. U
12H	100-01-6	4-NITROANILINE	1000. U
60A	534-52-1	4,6-DINITRO-2-METHYLPHENOL	1000. U
62B	86-30-6	N-NITROSODIPHENYLAMINE	200. U
41B	101-55-3	4-BROMOPHENYL PHENYL ETHER	200. U
9B	118-74-1	HEXACHLOROBENZENE	200. U
64A	87-86-5	PENTACHLOROPHENOL	1000. U
81B	85-01-8	PHENANTHRENE	200. U
78B	120-12-7	ANTHRACENE	200. U
68B	84-74-2	DI-N-BUTYL PHTHALATE	200. U
39B	206-44-0	FLUORANTHENE	200. U
5B	92-87-5	BENZIDINE	1000. U
84B	129-00-0	PYRENE	200. U
67B	85-68-7	BUTYL BENZYL PHTHALATE	200. U
28B	91-94-1	3,3'-DICHLOROBENZIDINE	400. U
72B	56-55-3	BENZO(A)ANTHRACENE	200. U
66B	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	44. J
76B	218-01-9	CHRYSENE	200. U
69B	117-84-0	DI-N-OCTYL PHTHALATE	200. U
74B	205-99-2	BENZO(B&K)FLUORANTHENES	200. U
73B	50-32-8	BENZO(A)PYRENE	200. U
83B	193-39-5	INDENO(1,2,3-CD)PYRENE	200. U
82B	53-70-3	DIBENZO(A,H)ANTHRACENE	200. U
79B	191-24-2	BENZO(GHI)PERYLENE	200. U

ALL RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

Sample #: 10568-MW1C1-4

Laboratory: IT/Cerritos
Lab ID: 2282-22
Lab ID for Dil: —
Sample Matrix: Soil
Data Release Authorized by: [signature]

Case #/SAS #: IT-662003
QC Report #: 662003-4
Contract #: PC 4010
Date Rec'd: 8-2-85

Organics Analysis Data Sheet
Pesticide/PCB's

Sample Level: low
Date Extracted: 8-7-85
Date Analyzed: 8-13-85
Spl->Extract: 49.23g->10ml;5ml->10ml
For Dilution: —
pH: 9.1
% Moisture: 12.84
% Moisture (Decanted): Not Analyzed
Lab Std ID: 2282-4,5

ALL RESULTS ARE REPORTED ON WET WEIGHT BASIS.

Circle Units: (ug/Kg) ug/L

319-84-6	alpha-BHC	2 U
319-85-7	beta-BHC	
319-86-8	delta-BHC	
58-89-9	gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	4 U
72-55-9	4,4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4,4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4,4'-DDT	
72-43-5	Methoxychlor	20 U
53494-70-5	Endrin Ketone	4 U
57-74-9	Chlordane	20 U
8001-35-2	Toxaphene	40 U
12674-11-2	Arochlor-1016	20 U
11104-28-2	Arochlor-1221	
11141-16-5	Arochlor-1232	
53469-21-9	Arochlor-1242	
12672-29-6	Arochlor-1248	
11097-69-1	Arochlor-1254	40 U
11096-82-5	Arochlor-1260	

U - Analyzed for but not detected (Reported Value is Detection Limit-DL)
J - Estimated Value (0 < Value < DL)
C - Confirmed by GC/MS-GC Quantitation
B - Compound found in Blank. Sample results are not Blank Corrected.
** - Detected below GC/MS DL-GC Quantitation
N - Not Confirmed by GC/MS-GC/MS DL
NA - Not Analyzed
NR - Not Reported
G - Confirmed by _____ in Unspiked Sample

V_i = Volume of extract injected (ul)
V_s = Volume of water extracted (ml)
W_s = Weight of sample extracted (g)
V_t = Volume of total extract (ul)

V_s — ml or
W_s 49.23 g
V_t 20,000 ul
V_i 5 ul

Surrogate Spike Recoveries — Circle Units: (ug/Kg) ug/L

Lab ID	Fraction	Compound	Conc. Sample	Conc. Spiked	% Recovery
2282-22	Pest.	Dibutyl Chlorendate	27	40	68

* - Asterisked Values are outside QC Limits. NS - Not Spiked
# - _____ Recoveries due to Dilution.
$ - _____ Recoveries due to Matrix Effects.

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 10568

LABORATORY: IT/CERR
LABORATORY ID: 33956H3
MATRIX: SOIL

CASE #/SAS #: IT-6620C
QC REPORT #: 662003
CONTRACT #: PC-4610
DATE RECEIVED: 08/02/85

DATA RELEASE AUTHORIZED BY: Cheryl Wrink

VOLATILE COMPOUNDS
SURROGATE SPIKE RECOVERIES

LEVEL:	LOW
DATE EXT/PREP:	08/12/85
DATE ANALYZED:	08/12/85
SPL-->EXTRACT:	1.008 G.
PH:	9.1
% MOISTURE:	17.94
% MOISTURE (DECANTED):	Not Analyzed
STANDARD ID:	VOH523
SENSITIVITY ID:	BFH436
UNITS:	UG/KG

LAB ID	COMPOUND	SAMPLE	SPIKED	% RECOVERY
	1,2-DICHLOROETHANE-D4	267.	250.	107
33956H3	TOLUENE-D8	254.	250.	102
	4-BROMOFLUOROBENZENE	253.	250.	101

* - ASTERISKED VALUES ARE OUTSIDE QC LIMITS NS - NOT SPIKED
# - _____ RECOVERIES DUE TO DILUTION
$ - _____ RECOVERIES DUE TO MATRIX EFFECTS

TENTATIVELY IDENTIFIED COMPOUNDS

	CAS #	COMPOUND NAME	SCAN #	CONC(J)
1		NONE FOUND		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 10568-

LABORATORY: IT/CERR
LABORATORY ID: 33956F4
MATRIX: SOIL

CASE #/SAS #: IT-662003
QC REPORT #: 662003-4
CONTRACT #: PC4610
DATE RECEIVED: 08/02/85

DATA RELEASE AUTHORIZED BY: Cheryl Gaul

SEMIVOLATILE COMPOUNDS
SURROGATE SPIKE RECOVERIES

LEVEL:	LOW
DATE EXT/PREP:	08/07/85
DATE ANALYZED:	08/29/85
SPL-->EXTRACT:	50.47G: 1ML
PH:	8.1
% MOISTURE:	12.94
% MOISTURE (DECANTED):	Not Analyzed
STANDARD ID:	BNAZ235
SENSITIVITY ID:	SENS613
UNITS:	UG/KG

LAB ID	COMPOUND	SAMPLE	SPIKED	% RECOVERY
	PHENOL-D5	835.	2100.	40
	2-FLUOROPHENOL	888.	2180.	41
33956F4	NITROBENZENE-D5	684.	1020.	67
	2-FLUOROBIPHENYL	640.	1030.	62
	2,4,6-TRIBROMOPHENOL	618.	2010.	31
	P-TERPHENYL-D14	716.	1030.	70

* - ASTERISKED VALUES ARE OUTSIDE QC LIMITS NS - NOT SPIKED
\# - _____ RECOVERIES DUE TO DILUTION
$ - _____ RECOVERIES DUE TO MATRIX EFFECTS

TENTATIVELY IDENTIFIED COMPOUNDS

	CAS #	COMPOUND NAME	SCAN #	CONC(J)
1	—	Methylene Chloride/Acetone Reaction Products Reported in Method Blank	—	"B"
2	—	unknown	412	200
3	—	unknown	430	200
4	—	unknown	441	200
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

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. THE NUMBER IS THE MINIMUM ATTAINABLE DETECTION LIMIT FOR THE SAMPLE.
J	INDICATES AN 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.
C	THIS FLAG APPLIES TO PESTICIDE PARAMETERS WHERE THE IDENTIFICATION HAS BEEN CONFIRMED BY GCMS. SINGLE COMPONENT PESTICIDES GREATER THAN OR EQUAL TO 10NG/UL IN THE FINAL EXTRACT SHOULD BE CONFIRMED BY GCMS.
B	THIS FLAG IS USED WHEN THE ANALYTE IS FOUND IN THE BLANK AS WELL AS IN THE SAMPLE. IT INDICATES POSSIBLE/PROBABLE BLANK COMTAMINATION AND WARNS THE DATA USER TO TAKE APPROPRIATE ACTION.

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 10569

LABORATORY: IT/CERR
LABORATORY ID: 33956H4
MATRIX: SOIL

CASE #/SAS #: IT-662003
QC REPORT #: 662003-4
CONTRACT #: PC-4610
DATE RECEIVED: 08/02/85

DATA RELEASE AUTHORIZED BY: Cheryl Wright

VOLATILE COMPOUNDS

LEVEL:	LOW
DATE EXT/PREP:	08/12/85
DATE ANALYZED:	08/12/85
SPL-->EXTRACT:	1.013 G.
PH:	7.2
% MOISTURE:	17.07
% MOISTURE (DECANTED):	Not Analyzed
STANDARD ID:	VOH523
SENSITIVITY ID:	BFH436
UNITS:	UG/KG

PP #	CAS #		CONC
45V	74-87-3	CHLOROMETHANE	50. U
46V	74-83-9	BROMOMETHANE	50. U
88V	75-01-4	VINYL CHLORIDE	50. U
16V	75-00-3	CHLOROETHANE	50. U
44V	75-09-2	METHYLENE CHLORIDE	100. B
13H	67-64-1	ACETONE	50. U
15H	75-15-0	CARBON DISULFIDE	30. U
29V	75-35-4	1,1-DICHLOROETHENE	26. ←
13V	75-34-3	1,1-DICHLOROETHANE	30. U
30V	156-60-5	TRANS-1,2-DICHLOROETHENE	30. U
23V	67-66-3	CHLOROFORM	30. U
10V	107-06-2	1,2-DICHLOROETHANE	30. U
14H	78-93-3	2-BUTANONE	50. U
11V	71-55-6	1,1,1-TRICHLOROETHANE	30. U
6V	56-23-5	CARBON TETRACHLORIDE	30. U
19H	108-05-4	VINYL ACETATE	50. U
48V	75-27-4	BROMODICHLOROMETHANE	30. U
15V	79-34-5	1,1,2,2-TETRACHLOROETHANE	30. U
32V	78-87-5	1,2-DICHLOROPROPANE	30. U
33VT	10061-02-6	TRANS-1,3-DICHLOROPROPENE	30. U
87V	79-01-6	TRICHLOROETHENE	30. U
51V	124-48-1	CHLORODIBROMOMETHANE	30. U
14V	79-00-5	1,1,2-TRICHLOROETHANE	30. U
4V	71-43-2	BENZENE	8. J
33VC	10061-01-5	CIS-1,3-DICHLOROPROPENE	30. U
19V	110-75-8	2-CHLOROETHYLVINYL ETHER	50. U
47V	75-25-2	BROMOFORM	30. U
16H	519-78-6	2-HEXANONE	50. U
17H	108-10-1	4-METHYL-2-PENTANONE	50. U
85V	127-18-4	TETRACHLOROETHENE	30. U
86V	108-88-3	TOLUENE	30. U
7V	108-90-7	CHLOROBENZENE	30. U
38V	100-41-4	ETHYLBENZENE	30. U
18H	100-42-5	STYRENE	30. U
20H	95-47-6	TOTAL XYLENES	30. U

ALL RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 10569

LABORATORY: IT/CERR
LABORATORY ID: 33956F3
MATRIX: SOIL

CASE #/SAS #: IT-66200
QC REPORT #: 662003-4
CONTRACT #: PC4610
DATE RECEIVED: 09/02/85

DATA RELEASE AUTHORIZED BY: Cheryl Wilhite

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL:	LOW
DATE EXT/PREP:	08/07/85
DATE ANALYZED:	08/29/85
SPL-->EXTRACT:	50.09G: 1ML
PH:	7.2
% MOISTURE:	17.07
% MOISTURE (DECANTED):	Not Analyzed
STANDARD ID:	BNAZ235
SENSITIVITY ID:	SENS613
UNITS:	UG/KG

PP #	CAS #		CONC
61B	62-75-9	N-NITROSODIMETHYLAMINE	200. U
65A	108-95-2	PHENOL	200. U
5H	62-53-3	ANILINE	200. U
18B	111-44-4	BIS(2-CHLOROETHYL)ETHER	200. U
24A	95-57-8	2-CHLOROPHENOL	200. U
26B	541-73-1	1,3-DICHLOROBENZENE	200. U
27B	106-46-7	1,4-DICHLOROBENZENE	200. U
6H	100-51-6	BENZYL ALCOHOL	200. U
25B	95-50-1	1,2-DICHLOROBENZENE	200. U
2H	95-48-7	2-METHYLPHENOL	200. U
42B	39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	200. U
3H	106-44-5	4-METHYLPHENOL	200. U
63B	621-64-7	N-NITROSODIPROPLYAMINE	200. U
12B	67-72-1	HEXACHLOROETHANE	200. U
56B	98-95-3	NITROBENZENE	200. U
54B	78-59-1	ISOPHORONE	200. U
57A	88-75-5	2-NITROPHENOL	200. U
34A	105-67-9	2,4-DIMETHYLPHENOL	200. U
1H	65-85-0	BENZOIC ACID	1000. U
43B	111-91-1	BIS(2-CHLOROETHOXY)METHANE	200. U
31A	120-33-2	2,4-DICHLOROPHENOL	200. U
8B	120-82-1	1,2,4-TRICHLOROBENZENE	200. U
55B	91-20-3	NAPHTHALENE	200. U
7H	106-47-8	4-CHLOROANILINE	200. U
52B	87-68-3	HEXACHLOROBUTADIENE	200. U
22A	59-50-7	4-CHLORO-3-METHYLPHENOL	200. U
9H	91-57-6	2-METHYLNAPHTHALENE	200. U
53B	77-47-4	HEXACHLOROCYCLOPENTADIENE	200. U
21A	88-06-2	2,4,6-TRICHLOROPHENOL	200. U
4H	95-95-4	2,4,5-TRICHLOROPHENOL	1000. U
20B	91-58-7	2-CHLORONAPHTHALENE	200. U
10H	88-74-4	2-NITROANILINE	1000. U
71B	131-11-3	DIMETHYL PHTHALATE	200. U
77B	208-96-8	ACENAPHTHYLENE	200. U
11H	99-09-2	3-NITROANILINE	1000. U

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 1056'

LABORATORY: IT/CERR
LABORATORY ID: 33956F3
MATRIX: SOIL

CASE #/SAS #: IT-662003
QC REPORT #: 662003-4
CONTRACT #: PC4610
DATE RECEIVED: 08/02/85

DATA RELEASE AUTHORIZED BY: Chrystal Saint

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW
DATE EXT/PREP:	08/07/85
DATE ANALYZED:	08/29/85
SPL-->EXTRACT:	50.09G: 1ML
PH:	7.2
% MOISTURE:	17.07
% MOISTURE (DECANTED):	Not Analyzed
STANDARD ID:	BNAZ235
SENSITIVITY ID:	SENS613
UNITS:	UG/KG

PP #	CAS #		CONC
1B	83-32-9	ACENAPHTHENE	200. U
59A	51-28-5	2,4-DINITROPHENOL	1000. U
58A	100-02-7	4-NITROPHENOL	1000. U
8H	132-64-9	DIBENZOFURAN	200. U
35B	121-14-2	2,4-DINITROTOLUENE	200. U
36B	606-20-2	2,6-DINITROTOLUENE	200. U
70B	84-66-2	DIETHYL PHTHALATE	200. U
40B	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	200. U
80B	86-73-7	FLUORENE	200. U
12H	100-01-6	4-NITROANILINE	1000. U
60A	534-52-1	4,6-DINITRO-2-METHYLPHENOL	1000. U
62B	86-30-6	N-NITROSODIPHENYLAMINE	200. U
41B	101-55-3	4-BROMOPHENYL PHENYL ETHER	200. U
9B	118-74-1	HEXACHLOROBENZENE	200. U
64A	87-86-5	PENTACHLOROPHENOL	1000. U
81B	85-01-8	PHENANTHRENE	200. U
78B	120-12-7	ANTHRACENE	200. U
68B	84-74-2	DI-N-BUTYL PHTHALATE	200. U
39B	206-44-0	FLUORANTHENE	200. U
5B	92-87-5	BENZIDINE	1000. U
84B	129-00-0	PYRENE	200. U
67B	85-68-7	BUTYL BENZYL PHTHALATE	200. U
28B	91-94-1	3,3'-DICHLOROBENZIDINE	400. U
72B	56-55-3	BENZO(A)ANTHRACENE	200. U
66B.	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	25. J
76B	218-01-9	CHRYSENE	200. U
69B	117-84-0	DI-N-OCTYL PHTHALATE	200. U
74B	205-99-2	BENZO(B&K)FLUORANTHENES	200. U
73B	50-32-8	BENZO(A)PYRENE	200. U
83B	193-39-5	INDENO(1,2,3-CD)PYRENE	200. U
82B	53-70-3	DIBENZO(A,H)ANTHRACENE	200. U
79B	191-24-2	BENZO(GHI)PERYLENE	200. U

ALL RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

Sample #: 10564-MW101-S

Laboratory: IT/Cerritos
Lab ID: 2282-23
Lab ID for Dil: —
Sample Matrix: Soil
Data Release Authorized by: Cheryl Wehrle

Case #/SAS #: IT-6662003
QC Report #: 662003-4
Contract #: PC 4010
Date Rec'd: 8-2-85

Organics Analysis Data Sheet
Pesticide/PCB's

Sample Level: low
Date Extracted: 8-7-85
Date Analyzed: 8-13-85
Spl->Extract: 49.59g→10ml; 5ml→10ml
For Dilution: —
pH: 7.2
% Moisture: 17.07
% Moisture (Decanted): Not Analyzed
Lab Std ID: 2282-4,5
Circle Units: (ug/Kg) ug/L

ALL RESULTS ARE REPORTED ON WET WEIGHT BASIS.

319-84-6	alpha-BHC	2 U
319-85-7	beta-BHC	
319-86-8	delta-BHC	
58-89-9	gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	4 U
72-55-9	4,4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4,4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4,4'-DDT	
72-43-5	Methoxychlor	20 U
53494-70-5	Endrin Ketone	4 U
57-74-9	Chlordane	20 U
8001-35-2	Toxaphene	40 U
12674-11-2	Arochlor-1016	20 U
11104-28-2	Arochlor-1221	
11141-16-5	Arochlor-1232	
53469-21-9	Arochlor-1242	
12672-29-6	Arochlor-1248	
11097-69-1	Arochlor-1254	40 U
11096-82-5	Arochlor-1260	

U - Analyzed for but not detected (Reported Value is Detection Limit-DL)
J - Estimated Value (0 < Value < DL)
C - Confirmed by GC/MS-GC Quantitation
B - Compound found in Blank. Sample results are not Blank Corrected.
** - Detected below GC/MS DL-GC Quantitation
N - Not Confirmed by GC/MS-GC/MS DL
NA - Not Analyzed
NR - Not Reported
G - Confirmed by _____ in Unspiked Sample

V_i = Volume of extract injected (ul)
V_s = Volume of water extracted (ml)
W_s = Weight of sample extracted (g)
V_t = Volume of total extract (ul)

V_s — ml or
W_s 49.59 g
V_t 20,000 ul
V_i 5 ul

Surrogate Spike Recoveries — Circle Units: (ug/Kg) ug/L

Lab ID	Fraction	Compound	Conc. Sample	Conc. Spiked	% Recovery
2282-23	Pest.	Dibutyl Chlorendate	24	40	60

* - Asterisked Values are outside QC Limits. NS - Not Spiked
\# - _____ Recoveries due to Dilution.
S - _____ Recoveries due to Matrix Effects.

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 10569

LABORATORY: IT/CERR
LABORATORY ID: 33956H4
MATRIX: SOIL

CASE #/SAS #: IT-6620C
QC REPORT #: 662003-4
CONTRACT #: PC-4610
DATE RECEIVED: 08/02/85

DATA RELEASE AUTHORIZED BY: Cheryl Wilhite

VOLATILE COMPOUNDS
SURROGATE SPIKE RECOVERIES

LEVEL:	LOW
DATE EXT/PREP:	08/12/85
DATE ANALYZED:	08/12/85
SPL-->EXTRACT:	1.013 G.
PH:	7.2
% MOISTURE:	17.07
% MOISTURE (DECANTED):	Not Analyzed
STANDARD ID:	VOH523
SENSITIVITY ID:	BFH436
UNITS:	UG/KG

LAB ID	COMPOUND	SAMPLE	SPIKED	% RECOVERY
	1,2-DICHLOROETHANE-D4	263.	250.	105
33956H4	TOLUENE-D8	252.	250.	101
	4-BROMOFLUOROBENZENE	253.	250.	101

* - ASTERISKED VALUES ARE OUTSIDE QC LIMITS NS - NOT SPIKED
\# - _____ RECOVERIES DUE TO DILUTION
$ - _____ RECOVERIES DUE TO MATRIX EFFECTS

TENTATIVELY IDENTIFIED COMPOUNDS

	CAS #	COMPOUND NAME	SCAN #	CONC(J)
1		NONE FOUND		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

ORGANICS ANALYSIS DATA SHEET SAMPLE #: 1056'

LABORATORY: IT/CERR
LABORATORY ID: 33956F3
MATRIX: SOIL

CASE #/SAS #: IT-6620
QC REPORT #: 66200.
CONTRACT #: PC4610
DATE RECEIVED: 08/02/85

DATA RELEASE AUTHORIZED BY: Cheryl Wrenn

SEMIVOLATILE COMPOUNDS
SURROGATE SPIKE RECOVERIES

LEVEL:	LOW
DATE EXT/PREP:	08/07/85
DATE ANALYZED:	08/29/85
SPL-->EXTRACT:	50.09G: 1ML
PH:	7.2
% MOISTURE:	17.07
% MOISTURE (DECANTED):	~~Not Analyzed~~
STANDARD ID:	BNAZ235
SENSITIVITY ID:	SENS613
UNITS:	UG/KG

LAB ID	COMPOUND	SAMPLE	SPIKED	% RECOVERY
	PHENOL-D5	994.	2100.	47
	2-FLUOROPHENOL	959.	2180.	44
33956F3	NITROBENZENE-D5	743.	1020.	73
	2-FLUOROBIPHENYL	666.	1030.	65
	2,4,6-TRIBROMOPHENOL	835.	2010.	42
	P-TERPHENYL-D14	749.	1030.	73

* - ASTERISKED VALUES ARE OUTSIDE QC LIMITS NS - NOT SPIKED
\# - _____ RECOVERIES DUE TO DILUTION
$ - _____ RECOVERIES DUE TO MATRIX EFFECTS

TENTATIVELY IDENTIFIED COMPOUNDS

	CAS #	COMPOUND NAME	SCAN #	CONC(J)
1	—	Methylene Chloride/Acetone Reaction Products Reported in Method Blank	—	"B"
2	79-34-5	1,1,2,2-Tetrachloroethane	398	100
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

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. THE NUMBER IS THE MINIMUM ATTAINABLE DETECTION LIMIT FOR THE SAMPLE.
J	INDICATES AN 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.
C	THIS FLAG APPLIES TO PESTICIDE PARAMETERS WHERE THE IDENTIFICATION HAS BEEN CONFIRMED BY GCMS. SINGLE COMPONENT PESTICIDES GREATER THAN OR EQUAL TO 10NG/UL IN THE FINAL EXTRACT SHOULD BE CONFIRMED BY GCMS.
B	THIS FLAG IS USED WHEN THE ANALYTE IS FOUND IN THE BLANK AS WELL AS IN THE SAMPLE. IT INDICATES POSSIBLE/PROBABLE BLANK COMTAMINATION AND WARNS THE DATA USER TO TAKE APPROPRIATE ACTION.

Groundwater Analytical Results
Standard Analyses
Priority Pollutant Analyses

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND PHASE II

Report Date: 2/6/86

COMMENTS:

Comments pertain to data on one or all pages of this report.

Values reported as "less than" (<) indicate the working detection limit for the particular sample and/or parameter.

The chromatograms of the samples for PCB analysis were qualitatively screened for the presence of nine PCB mixtures (Aroclors). These include Aroclor 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262 and 1268. Values reported as Total Polychlorinated Biphenyls are the summation of all positive Aroclor values.

The value reported as "less than or equal to" (≤) indicates the compound may be present at trace levels relative to the detection limit but not subject to accurate quantification.

Halogenated Organic Scan (ECD) results are used for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the chlorine content and response factor of Lindane but do not imply either the presence or absence of Lindane itself. Halogenated Organic Scan results do not include volatile organic constituents.

Volatile Halogenated Organic Scan results are used for screening purposes only and are not designed for qualification or quantification of specific organic compounds. Results are calculated based upon the chlorine content and response factor of Carbon Tetrachloride, but do not imply either the presence or absence of the compound itself.

Results of the analysis of soils are corrected for moisture content and reported on a dry weight basis.

*Volatile Halogenated Organic Scan results are based upon the summation of all peaks characteristic of halogenated organic compounds. The quantification of these results are subject to a certain degree of uncertainty due to the presence of an interferring peak exhibiting non-reproducible ghosting effects. The peak is not believed to be characteristic of halogenated compounds and is not included in the quantification.

FOR RECRA ENVIRONMENTAL LABORATORIES John J Dugenich

DATE 2/6/86

I.D. #85-1365

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND PHASE II

Report Date: 2/6/86

PARAMETER	UNITS OF MEASURE	EXTRACTION DATE	ANALYSIS DATE	SAMPLE IDENTIFICATION (DATE) MW 101-1 (11/6/85)	MW 101-2 (11/6/85)
Halogenated Organic Scan (ECD)	ug/l as Chlorine; Lindane Standard	11/11/85	12/3/85	0.81	0.15
Total Polychlorinated Biphenyls	ug/l as Aroclor 1232	11/11/85	12/3/85	4.8	<1
Volatile Halogenated Organic Scan	ug/l as Chlorine; Carbon Tetrachloride Standard	-	11/15/85	<10	<1*
Soluble Cadmium	mg/l	-	11/20/85	<0.005	<0.005
Soluble Chromium	mg/l	-	12/3/85	<0.005	<0.005
Hexavalent Chromium	mg/l	-	11/4/85	<0.005	<0.005
Soluble Copper	mg/l	-	11/27/85	<0.006	<0.006
Soluble Iron	mg/l	-	11/27/85	34.0	<0.04
Soluble Lead	mg/l	-	11/18/85	<0.005	<0.005
Soluble Mercury	mg/l	-	12/19/85	<0.0005	<0.0005
Soluble Nickel	mg/l	-	11/19/85	0.011	<0.005
Soluble Silver	mg/l	-	11/25/85	0.008	<0.006
Soluble Zinc	mg/l	-	11/25/85	0.043	0.017
Chloride	mg/l	-	11/14/85	184	29
Sulfate	mg/l	-	11/15/85	2.5	16
Total Cyanide	mg/l	-	11/18/85	<0.01	<0.01
Total Organic Carbon	mg/l	-	11/14/85	54	17

FOR RECRA ENVIRONMENTAL LABORATORIES Frederick Bogh

DATE 2/6/86

N. Finn

2/6/86

I.D. #85-1365

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND PHASE II

Report Date: 2/6/86

PARAMETER	UNITS OF MEASURE	EXTRACTION DATE	ANALYSIS DATE	SAMPLE IDENTIFICATION (DATE) MW 101-3 (11/6/85)	MW 101-4 (11/6/85)
Halogenated Organic Scan (ECD)	ug/l as Chlorine; Lindane Standard	11/11/85	12/3-4/85	0.12	0.80
Total Polychlorinated Biphenyls	ug/l as Aroclor 1242	11/11/85	12/2-3/85	<0.2	<1
Volatile Halogenated Organic Scan	ug/l as Chlorine; Carbon Tetrachloride Standard	-	11/15/85	<1	<1*
Soluble Cadmium	mg/l	-	11/20/85	<0.005	<0.005
Soluble Chromium	mg/l	-	12/3/85	<0.007	<0.007
Hexavalent Chromium	mg/l	-	11/4/85	<0.007	<0.007
Soluble Copper	mg/l	-	11/27/85	<0.006	<0.006
Soluble Iron	mg/l	-	11/27/85	<0.04	8.97
Soluble Lead	mg/l	-	11/18/85	<0.005	<0.005
Soluble Mercury	mg/l	-	12/19/85	<0.0005	<0.0005
Soluble Nickel	mg/l	-	11/19/85	<0.005	<0.005
Soluble Silver	mg/l	-	11/25/85	<0.006	<0.006
Soluble Zinc	mg/l	-	11/25/85	0.022	0.023
Chloride	mg/l	-	11/14/85	197	99
Sulfate	mg/l	-	11/15/85	23	115
Total Cyanide	mg/l	-	11/18/85	<0.01	<0.01
Total Organic Carbon	mg/l	-	11/14/85	15	37

FOR RECRA ENVIRONMENTAL LABORATORIES Frederick Boyle

DATE 2/6/86

D.V. Finn

2/6/86

I.D. #85-1365

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND PHASE II

Report Date: 2/6/86

PARAMETER	UNITS OF MEASURE	EXTRACTION DATE	ANALYSIS DATE	SAMPLE IDENTIFICATION (DATE) MW 101-5 (11/6/85)
Halogenated Organic Scan (ECD)	ug/l as Chlorine; Lindane Standard	11/11/85	12/3/85	4.0
Total Polychlorinated Biphenyls	ug/l as Aroclor 1016	11/11/85	12/3/85	19
Volatile Halogenated Organic Scan	ug/l as Chlorine; Carbon Tetrachloride Standard	-	11/15/85	<10
Soluble Cadmium	mg/l	-	11/20/85	<0.005
Soluble Chromium	mg/l	-	12/3/85	<0.01
Hexavalent Chromium	mg/l	-	11/4/85	<0.01
Soluble Copper	mg/l	-	11/27/85	<0.006
Soluble Iron	mg/l	-	11/27/85	0.389
Soluble Lead	mg/l	-	11/18/85	<0.005
Soluble Mercury	mg/l	-	12/19/85	<0.0005
Soluble Nickel	mg/l	-	11/19/85	0.046
Soluble Silver	mg/l	-	11/25/85	<0.006
Soluble Zinc	mg/l	-	11/25/85	0.036
Chloride	mg/l	-	11/14/85	145
Sulfate	mg/l	-	11/15/85	103
Total Cyanide	mg/l	-	11/18/85	<0.01
Total Organic Carbon	mg/l	-	11/14/85	48

FOR RECRA ENVIRONMENTAL LABORATORIES Frederick Boyle

DATE 2/6/86

2/6/86

I.D. #85-1365

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND PHASE II
QUALITY CONTROL

Report Date: 2/6/86

REPLICATE ANALYSIS

PARAMETER	SAMPLE I.D.	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION	PERCENT COEFFICIENT OF VARIATION
Soluble Cadmium	MW 101-5	mg/l	<0.005	<0.005	<0.005	-	-
Soluble Chromium	MW 101-5	mg/l	<0.01	<0.01	<0.01	-	-
Hexavalent Chromium	MW 101-5	mg/l	<0.01	<0.01	<0.01	-	-
Soluble Copper	MW 101-5	mg/l	<0.006	<0.006	<0.006	-	-
Soluble Iron	MW 101-5	mg/l	0.380	0.398	0.389	0.013	3.3
Soluble Lead	MW 101-5	mg/l	<0.005	<0.005	<0.005	-	-
Soluble Mercury	MW 101-5	mg/l	<0.0005	<0.0005	<0.0005	-	-
Soluble Nickel	MW 101-5	mg/l	0.046	0.046	0.046	-	-
Soluble Silver	MW 101-5	mg/l	<0.006	<0.006	<0.006	-	-
Soluble Zinc	MW 101-5	mg/l	0.035	0.037	0.036	0.001	3.9
Chloride	MW 101-1	mg/l	184.7	182.6	183.7	1.5	0.80
Sulfate	SP 101-4	mg/l	23.6	22.8	23.2	0.57	2.4
Total Cyanide	SP 101-3	mg/l	<0.01	<0.01	<0.01	-	-
Total Organic Carbon	MW 101-1	mg/l	52.5	55.5	54	2.1	3.9

FOR RECRA ENVIRONMENTAL LABORATORIES D.V. Finn

DATE 2/6/86

I.D. #85-1365

RECRA ENVIRONMENTAL LABORATORIES

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUPERFUND SITE
GAS CHROMATOGRAPHY
GLENS FALLS LANDFILL
QUALITY CONTROL

Report Date: 9/4/85
Date Received: 7/12/85

POLYCHLORINATED BIPHENYLS RECOVERY ANALYSIS OF METHOD BLANK

PARAMETER	ng OF SPIKE	ng RECOVERED	% RECOVERY
Aroclor 1221	1.30	1.16	89
Aroclor 1242	1.30	1.18	91
Aroclor 1254	1.30	1.01	78

FOR RECRA ENVIRONMENTAL LABORATORIES Frederick Bozek

DATE 9/4/85

I.D. #85-734

RECRA ENVIRONMENTAL LABORATORIES

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: RECRA ENVIRONMENTAL LABORATORIES Case No: 55-70-03

Lab Sample ID No: 16891 QC Report No: _____

Sample Matrix: WATER Contract No: D000451

Data Release Authorized By: _____ Date Sample Received: NOVEMBER 7, 1985

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: NOVEMBER 12, 1985

Conc/Dil Factor: 1 pH _____

Percent Moisture: _____

Percent Moisture (Decanted): _____

CAS Number		(ug/l) or ug/Kg (Circle One)	
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	5	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1, 1-Dichloroethene	5	U
75-34-3	1, 1-Dichloroethane	5	U
156-60-5	Trans-1, 2-Dichloroethene	5	U
67-66-3	Chloroform	5	B/J
107-06-2	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

CAS Number		(ug/l) or ug/Kg (Circle One)	
79-34-5	1, 1, 2, 2-Tetrachloroethane	5	U
78-87-5	1, 2-Dichloropropane	5	U
10061-02-6	Trans-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	cis-1 3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	B/J
108-90-7	Chlorobenzene	5	J
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used Additional flags or footnotes explaining results are encouraged However the definition of each flag must be explicit

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 an 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 For example if a specific analytical method states that the detection limit is 10 ug/l, then any compound detected at a level less than 10 ug/l would be reported as 5J

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

Other Other specific flags and footnotes may be required to properly define the results If used they must be fully described and such description attached to the data summary report

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria. Virginia 22313 703/557-2490

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: NOVEMBER 12, 1985

Date Analyzed: DECEMBER 10, 1985

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)	
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
62-53-3	Aniline	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	-	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2. 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2. 4-Dichlorophenol	10	U
120-82-1	1. 2. 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2. 4 6-Trichlorophenol	10	U
95-95-4	2. 4 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2 Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208 96-8	Acenaphthylene	10	U
99-09 2	3-Nitroaniline	50	U

CAS Number		ug/l or ug/Kg (Circle One)	
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
606-20-2	2. 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	B/J
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	B/J
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	29	B
206-44-0	Fluoranthene	10	U
92-87-5	Benzidine	50	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	J
91-94-1	3. 3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	5	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	B/J
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	5	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	Dibenz(a. h)Anthracene	10	U
191-24-2	Benzo(g. h. i)Perylene	5	U

(1)-Cannot be separated from diphenylamine

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Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 11/12/85

Date Analyzed: 12/18/85

Conc/Dil Factor: DF=1

CAS Number		ug/l or ug/Kg (Circle One)	
319-84-6	Alpha-BHC	<0.2	U
319-85-7	Beta-BHC	<0.4	U
319-86-8	Delta-BHC	<0.2	U
58-89-9	Gamma-BHC (Lindane)	<0.3	U
76-44-8	Heptachlor	<0.6	U
309-00-2	Aldrin	<0.1	U
1024-57-3	Heptachlor Epoxide	<0.4	U
959-98-8	Endosulfan I	<0.2	U
60-57-1	Dieldrin	<0.08	U
72-55-9	4,4'-DDE	<0.08	U
72-20-8	Endrin	<0.09	U
33213-65-9	Endosulfan II	<0.2	U
72-54-8	4,4'-DDD	<0.2	U
7421-93-4	Endrin Aldehyde	<0.2	U
1031-07-8	Endosulfan Sulfate	<0.2	U
50-29-3	4,4'-DDT	<0.2	U
72-43-5	Methoxychlor	<0.5	U
53494-70-5	Endrin Ketone	<0.2	U
57-74-9	Chlordane	<3	U
8001-35-2	Toxaphene	<4	U
12674-11-2	Aroclor-1016	<4	U
11104-28-2	Aroclor-1221	<8	U
11141-16-5	Aroclor-1232	<8	U
53469-21-9	Aroclor-1242	<4	U
12672-29-6	Aroclor-1248	<4	U
11097-69-1	Aroclor-1254	<1	U
11096-82-5	Aroclor-1260	<1	U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s 980 ml or W_s _____ V_t 10,000 ul V_i 1.3 ul

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Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		UNKNOWN - hydrocarbon	VOA	476	9.6
2.		—	—		—
3.		UNKNOWN - hydrocarbon	BN/AP	185	7.4
4.	60-32-2	HEXANOIC ACID, 6-AMINO		829	18
5.		UNKNOWN - substituted aliphatic hydrocarbon		1577	27
6.		UNKNOWN - substituted aliphatic hydrocarbon		1591	15
7.		UNKNOWN - SUBSTITUTED ALIPHATIC HYDROCARBON		1962	23
8.		UNKNOWN		2013	3.0
9.		UNKNOWN		2023	24
10.		UNKNOWN		2041	10
11.				2057	8.3
12.					
13.					
14.					
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Organics Analysis Data Sheet
(Page 1)

Laboratory Name: RECRA ENVIRONMENTAL LABORATORIES Case No: 55-70-03

Lab Sample ID No: 16888 QC Report No: _____

Sample Matrix: WATER Contract No: D000451

Data Release Authorized By: _____ Date Sample Received: NOVEMBER 7, 1985

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: NOVEMBER 12, 1985

Conc/Dil Factor: _____ pH _____

Percent Moisture: _____

Percent Moisture (Decanted): _____

CAS Number		(ug/l) or ug/Kg (Circle One)	
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
156-60-5	Trans-1, 2-Dichloroethene	5	U
67-66-3	Chloroform	5	B/J
107-06-2	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

CAS Number		(ug/l) or ug/Kg (Circle One)	
79-34-5	1, 1, 2, 2-Tetrachloroethane	5	U
78-87-5	1, 2-Dichloropropane	5	U
10061-02-6	Trans-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	J
10061-01-5	cis-1, 3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	B/J
108-90-7	Chlorobenzene	5	J
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used Additional flags or footnotes explaining results are encouraged However, the definition of each flag must be explicit

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 an 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

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

Other Other specific flags and footnotes may be required to properly define the results If used they must be fully described and such description attached to the data summary report

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: NOVEMBER 12, 1995

Date Analyzed: DECEMBER 18, 1995

Conc/Dil Factor: _____

CAS Number		(ug/l) or ug/Kg (Circle One)	
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
62-53-3	Aniline	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1. 3-Dichlorobenzene	10	U
106-46-7	1. 4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1. 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2. 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2. 4-Dichlorophenol	10	U
120-82-1	1. 2. 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2. 4 6-Trichlorophenol	10	U
95-95-4	2. 4 5-Trichlorophenol	50	U
91 58-7	2-Chloronaphthalene	10	U
88-74-4	2 Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09 2	3-Nitroaniline	50	U

CAS Number		(ug/l) or ug/Kg (Circle One)	
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
606-20-2	2. 6-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)	43	B
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	B
206-44-0	Fluoranthene	10	U
92-87-5	Benzidine	50	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
117-81-7	bis(2-Ethylhexyl)Phthalate	10	B
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1. 2. 3-cd)Pyrene	10	U
53-70-3	Dibenz(a. h)Anthracene	10	U
191-24-2	Benzo(g. h. i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 11/12/85

Date Analyzed: 12/18/85

Conc/Dil Factor: DF = 10

CAS Number		ug/l or ug/Kg (Circle One)	
319-84-6	Alpha-BHC	<0.7	U
319-85-7	Beta-BHC	<0.7	U
319-86-8	Delta-BHC	<0.7	U
58-89-9	Gamma-BHC (Lindane)	<0.7	U
76-44-8	Heptachlor	<0.7	U
309-00-2	Aldrin	<2	U
1024-57-3	Heptachlor Epoxide	<1	U
959-98-8	Endosulfan I	<0.7	U
60-57-1	Dieldrin	<1	U
72-55-9	4,4'-DDE	<1	U
72-20-8	Endrin	<1	U
33213-65-9	Endosulfan II	<2	U
72-54-8	4,4'-DDD	<2	U
7421-93-4	Endrin Aldehyde	<2	U
1031-07-8	Endosulfan Sulfate	<2	U
50-29-3	4,4'-DDT	<2	U
72-43-5	Methoxychlor	<5	U
53494-70-5	Endrin Ketone	<0.7	U
57-74-9	Chlordane	<8	U
8001-35-2	Toxaphene	<40	U
12674-11-2	Aroclor-1016	62	
11104-28-2	Aroclor-1221	<40	U
11141-16-5	Aroclor-1232	<40	U
53469-21-9	Aroclor-1242	<40	U
12672-29-6	Aroclor-1248	<40	U
11097-69-1	Aroclor-1254	<8	U
11096-82-5	Aroclor-1260	<8	U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s 1000 ml or W_s _____ V_t 10,000 ul V_i 1.3 ul

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Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		UNKNOWN - hydrocarbon - HEXANE	VOA	470	9.2
2.		—	—	—	—
3.	544-25-2	1,3,5 cyclo heptatriene or methyl benzene	BN/AP	183	5.1 B
4.					
5.	00-32-2	HEXANOIC acid, 6-AMINO		850	170
6.	54932-78-4	Phenol, tetramethyl butyl		1165	17
7.		Unknown - possible substituted phenyl heptenamine		1391	8.2
8.		Unknown - aliphatic hydrocarbon		1518	98
9.		Unknown - hydrocarbon		1579	79
10.		Unknown - possible aliphatic diol		1684	6.7
11.		Unknown		1721	9.7
12.		Unknown possible aliphatic diol		1854	7.2
13.		Unknown		1963	56
14.		Unknown		2109	54
15.		Unknown		2254	76
16.		Unknown		2272	23
17.		Unknown		2300	34
18.		Unknown		2371	150
19.		Unknown		251.2	430
20.					
21.					
22.					
23.					
24.					
25.					
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27.					
28.					
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30.					

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Organics Analysis Data Sheet
(Page 1)

Laboratory Name: RECRA ENVIRONMENTAL LABORATORIES Case No: 55-70-03

Lab Sample ID No: 16889 QC Report No: _____

Sample Matrix: WATER Contract No: D000451

Data Release Authorized By: _____ Date Sample Received: NOVEMBER 7, 1985

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: NOVEMBER 12, 1985

Conc/Dil Factor: _____ pH _____

Percent Moisture: _____

Percent Moisture (Decanted): _____

CAS Number		(ug/l) or ug/Kg (Circle One)	
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	J
75-35-4	1, 1-Dichloroethene	5	U
75-34-3	1, 1-Dichloroethane	5	U
156-60-5	Trans-1, 2-Dichloroethene	5	U
67-66-3	Chloroform	5	B/J
107-06-2	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

CAS Number		(ug/l) or ug/Kg (Circle One)	
79-34-5	1, 1, 2, 2-Tetrachloroethane	5	U
78-87-5	1, 2-Dichloropropane	5	U
10061-02-6	Trans-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	cis-1, 3-Dichloropropene	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	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
	Total Xylenes	5	U

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used Additional flags or footnotes explaining results are encouraged However, the definition of each flag must be explicit

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 an estimated value This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed

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

Other Other specific flags and footnotes may be required to properly define the results If used they must be fully described and such description attached to the data summary report

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: NOVEMBER 12, 1985

Date Analyzed: DECEMBER 10, 1985

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)	
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
62-53-3	Aniline	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	J
100-51-6	Benzyl Alcohol	10	U
95-50-1	1. 2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2. 4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2. 4-Dichlorophenol	10	U
120-82-1	1. 2. 4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2. 4 6-Trichlorophenol	10	U
95-95-4	2. 4. 5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U

CAS Number		ug/l or ug/Kg (Circle One)	
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
606-20-2	2. 6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	B/J
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	B/J
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	24	B
206-44-0	Fluoranthene	10	U
92-87-5	Benzidine	50	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	J
91-94-1	3. 3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	B/J
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1. 2. 3-cd)Pyrene	10	U
53-70-3	Dibenz(a. h)Anthracene	10	U
191-24-2	Benzo(g. h. i)Perylene	10	U

(1)-Cannot be separated from diphenylamine

Environmental Protection Agency, CLP Sample Management Office.
P.O. Box 818, Alexandria, Virginia 22313 703/557-2490

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 11/12/85

Date Analyzed: 12/18/85

Conc/Dil Factor: DF = 1

CAS Number		ug/l or ug/Kg (Circle One)	
319-84-6	Alpha-BHC	<0.07	U
319-85-7	Beta-BHC	<0.08	U
319-86-8	Delta-BHC	<0.2	U
58-89-9	Gamma-BHC (Lindane)	<0.07	U
76-44-8	Heptachlor	<0.06	U
309-00-2	Aldrin	<0.07	U
1024-57-3	Heptachlor Epoxide	<0.08	U
959-98-8	Endosulfan I	<0.08	U
60-57-1	Dieldrin	<0.08	U
72-55-9	4,4'-DDE	<0.08	U
72-20-8	Endrin	<0.09	U
33213-65-9	Endosulfan II	<0.2	U
72-54-8	4,4'-DDD	<0.2	U
7421-93-4	Endrin Aldehyde	<0.2	U
1031-07-8	Endosulfan Sulfate	<0.2	U
50-29-3	4,4'-DDT	<0.1	U
72-43-5	Methoxychlor	<0.5	U
53494-70-5	Endrin Ketone	<0.08	U
57-74-9	Chlordane	<0.6	U
8001-35-2	Toxaphene	<4	U
12674-11-2	Aroclor-1016	<1	U
11104-28-2	Aroclor-1221	<4	U
11141-16-5	Aroclor-1232	<2	U
53469-21-9	Aroclor-1242	<2	U
12672-29-6	Aroclor-1248	<2	U
11097-69-1	Aroclor-1254	<1	U
11096-82-5	Aroclor-1260	<1	U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s 1000 ml or W_s _____ V_t 10,000 ml V_i 1.3 ul

nvironmental Protection Agency. CLP Sample Management Office.
O. Box 818. Alexandria. Virginia 22313 703/557-2490

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	96-14-0	Pentane, 2-methyl	VOA	470	15
2.	121-44-8	Ethanamine, N,N-diethyl	VOA	562	24
3.	—	—	—	—	—
4.	544-25-2	1,3,5 Cycloheptatriene or methylbenzene	BN/AP	182	4.7
5.	—	Unknown hydrocarbon		1520	430
6.	—	Unknown, aliphatic hydrocarbon		1579	75
7.	—	(Unknown)		1720	36
8.	—	Unknown, aliphatic hydrocarbon		1964	29
9.	—	Unknown, aliphatic hydrocarbon		2034	93
10.	—	Unknown, aliphatic hydrocarbon		2110	110
11.	—	Unknown, aliphatic hydrocarbon		2154	45
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
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27.					
28.					
29.					
30.					

RECRA RESEARCH, INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.: 5C2601101

SITE NAME: GLEN FALLS (DEC)

SAMPLERS (SIGNATURE): Dennis Maluca

STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1L AMBER	1/2 GAL PLASTIC	1 GAL PLASTIC	32oz GLASS	40 mL VOA		REMARKS
MW101-B 1	11/6			X		6	2	1	1		2		STANDARD ANALYSIS
MW-101 3				X		6	2	1	1		2		STANDARD ANALYSIS
MW-101 3				X		6	2	1	1		3		STANDARD ANALYSIS
MW-101 4				X		14	6	1	1		6		STANDARD + P.P ANALYSIS + 1 FIELD BLANK
MW-101 5				X	QC	28	14	1	1		12		STANDARD + P.P. ANALYSIS + 4 FIELD BLANKS
SP-101 1				X		1				1			SEDIMENT SOIL STANDARD ANALYSIS
SP-101 2				X		2				2			SEDIMENT SOIL STANDARD + P.P. ANALYSIS
SP-101 3				X		13	6	1	1		5		SEDIMENT SOIL + P.P ANALYSIS HA-101-1 TAKEN FOR SOIL
SP-101 4				X		6	2	1	1		2		STANDARD ANALYSIS HA-101-2 TAKEN FOR SOIL
HA-101 1				X		1				1			SEDIMENT SOIL STANDARD ANALYSIS FOR SP 101-3 LOCATION
HA-101 2				X		1				1			SEDIMENT SOIL STANDARD ANALYSIS FOR SP 101-4 LOCATION
													Note SP 101-2, SP 101-1 > NO WATER DRY SAMPLE

RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):
Dennis Maluca	11/7/85 5:13 PM	David Weis			
RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE/TIME:	REMARKS:	

Distribution: Original accompanies shipment, copy to coordinator field files

APPENDIX 5

FIELD REPORT FOR SAMPLING ACTIVITIES

4/3337

RECRA ENVIRONMENTAL, INC.

Hazardous Waste And Toxic Substance Control

FIELD REPORT

COLLECTION OF GROUNDWATER, SEDIMENT AND SOIL SAMPLES GLENS FALLS SITE QUEENSBURY, NEW YORK

Prepared For:

New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-0001

Prepared By:

Recra Environmental, Inc.
4248 Ridge Lea Road
Amherst, NY 14226

5C280101

Written By: Jerome L. Miller

Reviewed By: [signature]

Date: 3/19/86

1.0 INTRODUCTION

This report describes the collection of five (5) groundwater samples, two (2) tap water samples, two (2) sediment samples, and two (2) soil samples at the Glens Falls site located in Queensbury, New York on November 6, 1985. Prior to initiation of sampling activities, all monitoring wells were developed as described in the following subsections. This activity occurred on August 27, 1985.

In addition to the November 1985 sampling event, surface sampling point SP-101-2 was re-sampled on January 15, 1986 following the same sampling methodologies as described herein. All field activities were performed by Recra Research, Inc.

2.0 METHODOLOGIES

2.1 Well Development

Prior to purging and sampling, all wells were developed using an ISCO Model 1580 peristaltic pump with dedicated polyethylene tubing and silicone rubber pump hose. Each well was developed until water exhibited consistent clarity, pH, specific conductance, and temperature (Table I).

2.2 Measurements

The depth of water in each well was measured using an electronic water level indicator (Slope Model 51453) and a folding engineer's rule. Water levels were recorded to the nearest hundreth foot (0.01) and are presented in Table II. Measurements of temperature, specific conductance, and pH were all performed in the field using calibrated instrumentation.

These data are presented in Table III.

2.3 Well Purging

All wells were purged prior to sampling. At least three times the volume of standing water in each well was removed. Well purging was accomplished using an ISCO peristaltic pump with new polyethylene tubing and silicone rubber pump hose. Well purging characteristics are presented in Table II.

2.4 Groundwater Sampling

Upon completion of purging; five (5) wells (designated MW, monitoring well), were sampled using new, precleaned 1.25 inch by 5 foot PVC bailers and .25 inch diameter nylon rope. Samples were collected, in accordance with protocols presented in the Test Methods for Evaluating Solid Waste (USEPA SW-846, April, 1984), directly into appropriate sample containers. Immediately following sample collection field measurements were performed as per Section 2.2 and the samples were preserved in accordance with protocols presented in the Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020).

2.5 Soil Sampling

Two (2) soil samples, designated HA (hand auger), were collected using a pre-cleaned 3 inch stainless steel bucket auger in accordance with protocols presented in the Test Methods for Evaluating Solid Waste (USEPA SW-846, April, 1984). Prior to sample collection and between sample locations, the bucket auger was cleaned with Liquinox soap, hexane, ace-

tone, and thoroughly rinsed with deionized water.

2.6 Sediment Sampling

Two (2) sediment samples, designated SP (surface point), were collected using a precleaned stainless steel trowel in accordance with protocols presented in the Test Methods for Evaluating Solid Waste (USEPA SW-846, April 1984). Immediately following collection samples were placed on ice.

2.7 Domestic Tap Water Sampling

Two (2) domestic tap water samples, designated SP (surface point),were collected as grab samples from House 21 and House 23, both located on the north end of the site. Samples were collected from outside water faucets which were allowed to run for several minutes prior to sample collection. Immediately following sample collection, field measurements were performed as per Section 2.2 and samples preserved in accordance with protocols presented in the Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020).

3.0 FIELD OBSERVATIONS

All field observations were recorded in a Project Field Book. These data are summarized in Table IV for each sample collected at this site. In addition, all sample locations are noted on a site map contained with this report as Appendix I.

4.0 CHAIN OF CUSTODY

Chain of custody was initiated at time of sample collection and maintained through delivery to Recra Environmental Laboratories located in Tonawanda, New York.

TABLE I

GLENS FALLS SITE
QUEENSBURY, NEW YORK

WELL DEVELOPMENT

SAMPLE I.D.	DATE	TIME	pH (STANDARD UNITS)	SPECIFIC CONDUCTANCE (umhos/cm)	TEMP (°C)	VOLUME EVACUATED (GALS)	COMMENTS
MW 101-1	8/27/85	1500	6.46	1920	18.0	1.0	Medium Green, Slightly Turbid
MW 101-1	8/27/85	1520	6.49	1910	18.5	2.5	Light Green, Slightly Turbid
MW 101-1	8/27/85	1530	6.49	1925	18.5	3.5	Light Green Very Slightly Turbid
MW 101-2	8/27/85	1400	6.01	210	16.5	1.0	Medium Tan Very Turbid
MW 101-2	8/27/85	1412	6.00	230	16.5	3.0	Light Tan, Slightly Turbid
MW 101-2	8/27/85	1430	6.27	230	17.5	6.0	Clear to Very Light Tan, No Turbidity
MW 101-3	8/27/85	1209	6.75	925	15.0	1.0	Light Brown, Very Turbid
MW 101-3	8/27/85	1222	6.59	720	15.0	3.0	Light Brown, Slightly Turbid
MW 101-3	8/27/85	1256	6.40	760	16.0	6.0	Light Brown, Very Slightly Turbid
MW 101-3	8/27/85	1309	6.45	750	14.0	8.0	Light Tan, Very Slightly Turbid
MW 101-3	8/27/85	1320	6.26	752	15.0	10.0	Clear

FOR RECRA ENVIRONMENTAL, INC. Mary Lotty

DATE 3/19/86

RECRA ENVIRONMENTAL, INC.

TABLE I

GLENS FALLS SITE
QUEENSBURY, NEW YORK

WELL DEVELOPMENT

SAMPLE I.D.	DATE	TIME	pH (STANDARD UNITS)	SPECIFIC CONDUCTANCE (umhos/cm)	TEMP (°C)	VOLUME EVACUATED (GALS)	COMMENTS
MW 101-4	8/27/85	0950	6.72	1120	16.0	1.0	Light Tan, Slightly Turbid
MW 101-4	8/27/85	1000	6.70	1120	16.0	3.5	Light Tan, Slightly Turbid
MW 101-4	8/27/85	1025	6.76	990	16.0	10.0	Light Tan, Slightly Turbid
MW 101-4	8/27/85	1040	6.77	960	15.0	15.0	Very Light Tan, Very Slightly Turbid
MW 101-4	8/27/85	1055	6.79	980	15.0	22.0	Clear
MW 101-5	8/27/85	1030	6.94	2200	20.0	1.0	Light Tan, Slightly Turbid
MW 101-5	8/27/85	1040	6.91	2200	19.5	3.0	Light Tan, Slightly Turbid
MW 101-5	8/27/85	1115	6.92	2250	20.0	8.0	Light Green, Very Slightly Turbid

FOR RECRA ENVIRONMENTAL, INC. Mark A Cotter

DATE 3/19/86

3/T3337

TABLE II
GLENS FALLS SITE
QUEENSBURY, NEW YORK

WELL INFORMATION

WELL I.D.	DATE	TIME	SIZE/TYPE OF CASING	WATER LEVEL (FT.)*	BOTTOM OF WELL (FT.)*	VOLUME OF STANDING WATER (GAL.)	VOLUME EVACUATED (GAL.)	METHOD OF EVACUATION	METHOD OF SAMPLING	RECHARGE RATE +
MW 101-1	11/6/85	0935	2" PVC	24.46	28.90	.7	2.0	Peristaltic Pump	PVC Bailer	Rapid
MW 101-2	11/6/85	1009	2" PVC	20.60	26.00	.9	2.5	Peristaltic Pump	PVC Bailer	Rapid
MW 101-3	11/6/85	1420	2" PVC	20.33	25.25	.8	2.4	Peristaltic Pump	PVC Bailer	Rapid
MW 101-4	11/6/85	1220	2" PVC	8.75	15.30	1	3.0	Peristaltic Pump	PVC Bailer	Rapid
MW 101-5	11/6/85	1050	2" PVC	21.22	26.34	.8	2.5	Peristaltic Pump	PVC Bailer	Rapid

* From Top of Casing.
\+ Recharge Rate Determined by the following Criteria:
Continuous - no drop in water level during evacuation.
Rapid - recharges within one (1) hour.
Slow - recharges after eight (8) hours.
Very Slow - must return another day.

FOR RECRA ENVIRONMENTAL, INC. _____

DATE 3/19/86

RECRA ENVIRONMENTAL, INC.

TABLE III

GLENS FALLS SITE
QUEENSBURY, NEW YORK

FIELD MEASUREMENTS

SAMPLE I.D.	DATE	TIME	pH (STANDARD UNITS)	SPECIFIC CONDUCTANCE (umhos/cm)	TEMP (°C)	COMMENTS
MW-101-1	11/6/85	1500	6.40	2050	12.0	Slightly Turbid
MW-101-2	11/6/85	1510	6.55	260	12.0	Slightly Turbid
MW-101-3	11/6/85	1520	5.65	770	12.0	Clear
MW-101-4	11/6/85	1530	5.65	1220	14.0	Clear
MW-101-5	11/6/85	1537	6.15	2000	14.0	Clear
SP-101-1	11/6/85	1505	-	-	-	Sediment Sample Only
SP-101-2	11/6/85	1304	-	-	-	Sediment Sample Only
SP-101-2	01/15/86	1230	-	-	-	Sediment Sample Only
SP-101-3	11/6/85	1545	5.7	350	12.0	Clear, Tap Water (House 21)
SP-101-4	11/6/85	1600	5.7	680	12.0	Clear, Tap Water (House 23)

FOR RECRA ENVIRONMENTAL, INC. Mark Colby

DATE 3/19/86

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TABLE IV

GLENS FALLS SITE
QUEENSBURY, NEW YORK

FIELD OBSERVATIONS
November 6, 1985

Sample Identification	Description
MW-101-1	Prior to purging on 11-6-85, a water-to-top-of-casing measurement of 24.46 feet was obtained. Using a peristaltic pump 2.1 gallons (3 x the calculated standing volume) were removed from the well. A sample was collected using a new pre-cleaned PVC bailer and new nylon line into the appropriate containers. Sample water was turbid.
MW-101-2	Prior to purging on 11-6-85, a water-to-top-of-casing measurement of 20.60 feet was obtained. Using a peristaltic pump 2.4 gallons (3 x the calculated standing volume) were removed from the well. A sample was collected using a new pre-cleaned PVC bailer and new nylon line into the appropriate containers. Sample water was turbid.
MW-101-3	Prior to purging on 11-6-85, a water-to-top-of-casing measurement of 20.33 feet was obtained. Using a peristaltic pump 2.4 gallons (3 x the calculated standing volume) were removed from the well. A sample was collected using a new pre-cleaned PVC bailer and new nylon line into the appropriate containers. Sample water was clear.
MW-101-4	Prior to purging on 11-6-85, a water-to-top-of-casing measurement of 8.75 feet was obtained. Using a peristaltic pump 3.1 gallons (3 x the calculated standing volume) were removed from the well. A sample was collected using a new pre-cleaned PVC bailer and new nylon line into the appropriate containers. Sample water was clear.
MW-101-5	Prior to purging on 11-6-85, a water-to-top-of-casing measurement of 21.22 feet was obtained. Using a peristaltic pump 2.4 gallons (3 x the calculated standing volume) were removed from the well. A sample was collected using a new pre-cleaned PVC bailer and new nylon line into the appropriate containers. Sample water was clear.
SP-101-1	A sediment sample was collected from this location using a stainless steel trowel. The sample was predominantly sandy soil.
SP-101-2	A sediment sample was collected from swampy area on Sherman Avenue and north end of site using a stainless steel trowel. The sample was predominantly sandy soil.

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TABLE IV
(Continued)

GLENS FALLS SITE
QUEENSBURY, NEW YORK

FIELD OBSERVATIONS
November 6, 1985

Sample Identification	Description
House #21	A groundwater grab sample was obtained at House #21 on the north end of the site from an outside faucet that was allowed to run several minutes prior to sampling. Sample water was clear. Water source was a 45 foot domestic well. Sample was identified on Chain of Custody as SP-101-3.
House #23	A groundwater grab sample was obtained at House #23 on the north end of the site from an outside faucet that was allowed to run several minutes prior to sampling. Sample water was clear. Water source was a 28 foot domestic well. Sample was identified on Chain of Custody as SP-101-4.
HA-101-1	A soil sample was collected using a pre-cleaned three inch stainless steel bucket auger to a depth of 2.0 feet. Sample was predominantly a sandy soil.
HA-101-2	A soil sample was collected using a pre-cleaned three inch stainless steel bucket auger to a depth of 2.5 feet. Sample was predominantly a sandy soil.

Note: All sampling locations are presented on Plate A in Appendix 1 of the Recra Phase II Investigation Report.

TABLE V

GLENS FALLS SITE
QUEENSBURY, NEW YORK

FIELD OBSERVATIONS
January 15, 1986

Sample Identification	Description
SP-101-2	Sediment sample re-collected from swampy area on Sherman Avenue removed 2 feet of snow cover. Sample was collected with a stainless steel trowel.

Note: All sampling locations are presented on Plate A in Appendix 1 of the Recra Phase II Investigation Report.

APPENDIX 6

REFERENCES

APPENDIX A

DATA SOURCES AND REFERENCES

1. NYSDEC Hazardous Waste Disposal Sites Report, Ray E. Cowen, P.E., G. David Knowles, P.E. and Ron Tramontano; April 7, 1980.

2. NYSDEC letter to Mayor Robert J. Cronin, City of Glens Falls, from D. A. Corliss, P.E., June 23, 1977.

3. NYSDEC letter to City of Glens Falls Mayor and Common Council, from D. E. Corliss, P.E., November 15, 1977.

4. Letter to Mayor Edward Bartholomew and Members of the Glens Falls Common Council, from City of Glens Falls Engineering Department, Peter J. Brown, Jr.; February 9, 1978. .

5. Local newspaper article entitled "Luzerne Road Residents Await 'Mount Trashmore' Clean Up," Mark Behan, July 7, 1977.

6. Recra Record of Telephone Conversation with NYSDEC, Region 5, personnel, Bill Meuermann regarding wetlands, June 9, 1986.

7. NYSDEC memorandum to Norm VanValkenburgh from Greg Sovas, April 24, 1979.

8. NYSDEC memorandum to Norm VanValkenburgh from Norman H. Nosenchuck; April 24, 1979.

9. EPA Site Inspection Report; EPA Form 2070-3; Inspector Edward L. Moore, Fred C. Hart Associates; January 12, 1981.

10. Phone conversation with Glens Falls Water Department; Mr. Mike Kelly; June 19, 1986, map included

11. U.S. Geological Survey topographic maps, Glens Falls, New York quadrangle, 1966.

12. State of New York, Official Compilation of Codes, Rules and Regulations, Title 6: Conservation, Article 7, Lake Champlain Drainage Basin Part 830, pg. 1548. 1966.

13. Surficial Geology of the Glens Falls Region, New York; G. Gordon Connally, New York State Museum Map and Chart Series Number 23; 1973.

14. Recra record of telephone conversation with Joe Bystrak, Warren County Soil Survey, Glens Falls, New York; August 29, 1983.

15. Recra record of telephone conversation with Jeff Tyler, American Drilling Company; August 29, 1983.

16. Soil Mechanics in Engineering Practices, Wiley & Sons, Second Edition. Terzazhi, K. and Peck, R. B., 1967.

17. U.S. Geological Survey, Geologic Map of New York, Hudson-Mohawk Sheet, 1970.

18. Dangerous Properties of Industrial Materials, VanNostrand Reinhold Co., Sixth Edition, Sax, N. I. 1984.

19. Letter to Mr. D. A. Corliss, P.C. (NYSDEC) from City of Glens Falls, engineering department, Mr. Peter J. Brown, regarding closure of former landfill on Luzerne Road, January 17, 1978.

20. Recra Research, Inc., Record of Telephone Conversation with Ray Cowen of NYSDEC regarding landfill history, June 11, 1986.

21. Letter to NYSDEC-Region 5, Mr. Monroe from Rotary Club of Glens Falls regarding beautification project, July 17, 1979.

22. Recra Research, Inc., daily field report completed by Kevin Connare, July 11, 1985.

23. NYSDEC memorandum from Ray Cowen (NYSDEC) to Pat Perry (Recra) regarding secure PCB cell, June 4, 1986.

24. Analytical results from monthly monitoring conducted at the secure PCB cell. Reports dated 1-9-86, 6-19-85, 7-18-85, and 9-6-85.

25. Design of Land Treatment Systems for Industrial Wastes - Theory and Practice, Ann Arbor Science, Overcash, M., and Pal, D., 1979, p. 394.

26. Uncontrolled Hazardous Waste Site Ranking System - A User's Manual - Draft, June, 1982.

REFERENCE 1

HAZARDOUS WASTE DISPOSAL SITES REPORT
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATI

Code: B
Site Code: 557003
Name of Site: Glens Falls Landfill Region: 5
County: Warren Town/City Queensbury
Street Address: Luzerne Road

Status of Site Narrative:

An inactive landfill used primarily for municipal refuse. Some quantity of PCB capacitors may have been deposited here by private haulers and individuals. Site is located along Interstate Route 87. Leachate at the site appears to flow into Halfway Creek.

Type of Site: Open Dump ☐ Treatment Pond(s) ☐ Number of Ponds
Landfill ☑ Lagoon(s) ☐ Number of Lagoons
Structure ☐

Estimated Size 15 Acres

Hazardous Wastes Disposed? Confirmed ☐ Suspected ☑

*Type and Quantity of Hazardous Wastes:

TYPE	QUANTITY (Pounds, drums, tons, gallons)
PCB capacitors	Unknown

*Use additional sheets if more space is needed.

REFERENCE 2

Name of Current Owner of Site: City of Glens Falls
Address of Current Owner of Site: City Hall, Glens Falls, N

Time Period Site Was Used for Hazardous Waste Disposal:
, 19 61 To , 19 77

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:

Status of Legal Action: NONE State ☐ Federal ☐

Permits Issued: Federal ☐ Local Government ☐ SPDES ☐
Solid Waste ☐ Mined Land ☐ Wetlands ☐ Other ☐

Assessment of Environmental Problems:

Landfill is not properly closed and poses severe leachate production potential in its present state. site is a visual blight from adjacent Interstate 87. Halfway Creek appears to be impacted by leachates being generated at this site. Other media should be sampled in the near future.

Assessment of Health Problems:

Volatilization potential exists at this site and needs to be evaluated.

Persons Completing this Form:

Ray E. Cowen, P.E.
G. David Knowles, P.E.

New York State Department of Environmental Conservation
Date April 7, 1980

Ron Tramontano

New York State Department of Health
Date April 7, 1980

TICKLER 1 August

Ray Brook, New York 12977

June 23, 1977

Thomas R. Monroe
Regional Director

Mr. Robert J. Cronin, Mayor
City of Glens Falls
City Hall
Glens Falls, New York 12801

Re: (4700) Landfill Closure
Glens Falls (C), Warren (Co).

Dear Mayor Cronin:

In your letter dated January 17, 1977 you indicated that as soon as the City was prepared to close out its landfill you would check with our office concerning proper closure procedures. As the landfill has been closed to the general public for approximately 6 months, it is our opinion that the City should have had appropriate lead time to begin planning the closure of this site. An inspection of Tuesday, June 14, 1977 indicated that there was an uncovered mixture of general refuse on the top of the landfill site which if it is continued to be dumped at this location, will only increase the problem of final closure. If it is the City's intention to continue partial use of this site for City purposes, then all refuse delivered to this site must be compacted and covered daily as required by Part 360. It is suggested that a meeting be held including representatives of the City, our Albany office and of this office to discuss your closure plans. If you concur please advise and we will arrange the meeting at a mutually convenient time.

Your cooperation in this matter is appreciated. If you care to discuss this by telephone please call the writer at 891-1370.

Sincerely,

D. A. Corliss, P.E.
Regional Engineer

By:
David B. Fleury, P.E.
Senior Sanitary Engineer

DBF:mmd
cc: E. Barcomb, P.E.
D. Sullivan, Chief E. C. O.

REFERENCE 3

Region 5 - Environmental Quality
Hudson Street, Warrensburg, N. Y. 12885
Area Code 518 623-3671

November 15, 1977

Mayor and Common Council
City of Glens Falls
City Hall, Ridge Street
Glens Falls, New York 12801

RE: (4700) Landfill Closure
Glens Falls (C), Warren (Co.)

Gentlemen:

The failure of the City of Glens Falls to properly close the Luzerne Road Landfill has resulted in the City being in violation of the New York State Department of Environmental Conservation Rules and Regulations, Part 360, Solid Waste Management Facilities. The City is required by Part 360 to submit a closure plan for DEC review and then properly execute a Department approved plan. The Regulation also requires that final cover be placed within 90 days from the date that use of the facility terminates. The City has exceeded considerably the time frame specified and has not yet furnished us with any indication that proper planning for closure has begun.

Mayor Cronin indicated in his January 17, 1977 letter to us that the City would contact our office concerning proper closure procedures as soon as the City was prepared to close out the landfill. Since we have not yet heard from the City on this matter, we were surprised by an October 2F 1977 Post Star article which suggested that closure will soon begin. repeat our June 23, 1977, request, we suggest that a meeting be he' cluding representatives of the City, our Albany office and this o' discuss your closure plans prior to the initiation of any on-site tion work. We will be pleased to arrange a meeting at a mutually convenient time.

Your prompt attention in this matter will be important in helping to av any need by the Department to pursue through legal channels your compli with Part 360.

November 15, 1977

If you should have any questions concerning this correspondence, please feel free to contact me at your convenience.

Sincerely yours,

D. A. Corliss, P.E.
Regional Engineer

by: William C. Colden, P.E.
Regional Solid Waste Engineer

WCC:brd

cc: Mr. W. Bentley, Div.
of Solid Waste Management

REFERENCE 4

CITY OF GLENS FALLS
ENGINEERING DEPARTMENT
46 RIDGE STREET, GLENS FALLS, N. Y. 12801
518 792-3141 • 518 792-2770

COMMON COUNCIL WORKSHOP MEETING - FEBRUARY 22, 1978

February 9, 1978

FROM: Peter J. Brown, Jr. Engineer
TO: Mayor Edward Bartholomew
Members of the Glens Falls Common Council

RE: Closure of former Landfill on Luzerne Rd.

This Department has completed plans for the proposed closure of the former City owned Landfill on Luzerne Road. Included are;

1 of 3 Rist Frost - April 17, 1978 - Topo Map
2 of 3 City of G. F. - January , 1978 - Topo Map
3 of 3 City of G. F. - February , 1978 - Topo Map
1 set of cross sections of existing and proposed grades which coincide with plans 2 of 3 and 3 of 3.

After careful study we have decided to propose the adjustment of slopes on the west side (Northway side) of the hill to a 1 on 2.5 which will be more consistent with the existing Northway side slopes.

On the easterly side (Walczak) we have proposed a 1 on 3 slope with a 15 ft. wide drainage ditch within the property line at the toe of the slope and to continue this slope and ditch around the north side of the Walczak property.

This ditch would continue to a point where it would discharge into the ravine at the northeast corner of the property.

Along the north side of the property again we propose a 1 on 3 slope with 15 ft. wide ditch at the top of slope within our bounds.

CITY OF GLENS FALLS
ENGINEERING DEPARTMENT
46 RIDGE STREET, GLENS FALLS, N. Y. 12801
518 792-3141 • 518 792-2770

The adjustments in grade will create an excess of nearly 60,000 cu.yds. of sand, rubble and other unsuitable materials typical of landfills which must be properly disposed of. To accommodate this excess it will be necessary to either haul these materials to an existing landfill for proper disposal or utilize our existing property adjoining the landfill.

Should we use the existing sand pit which is shown on the plans, we would be required to fill the base of this pit to a point or elevation at least 3 ft. above the ground water elevation. This would require approximately 24,000 cu.yds. of sand fill. At this point we would be able to fill the remainder of the pit with the excess debris from the landfill.

When the proper grades are met on the landfill, it would be necessary to place a cover (1.5 ft.) of sand over its entire surface with an addition of 0.5 ft. of soil, capable of supporting vegetation. I recommend that we use clay; when properly prepared, will support most types of vegetation. Futhermore, the clay which is practically impervious, would allow very little moisture into the landfill below, eliminating most leachate.

The sand for fill in the base of the existing pit, its final cover material, and the 1.5 ft. cover for the entire landfill could be imported from off the site or the City could open a new pit adjacent to the existing pit which ultimately can be used by the City for disposal of building rubble or tree disposal.

CITY OF GLENS FALLS
ENGINEERING DEPARTMENT
46 RIDGE STREET, GLENS FALLS, N. Y. 12801
518 792-3141 • 518 792-2770

To keep hauling costs at a minumum I would recommemd the disposal of the excess debris from the landfill in the existing pit and open a new pit for the cover material. This would leave only the clay cover to be imported from off-site.

To complete the closing of the landfill; lime, fertilizer, seed and mulch would be applied by a hydro seeder. The grass will be similar to that used on the ski slopes at West Mountain.

A detailed estimate for the work is attached for your convenience and it includes all costs involved with the plans as drawn, less the gas vent system , a monitoring program for gas and water and maintenance of completed project.

Other items which must be resolved are the future use and control of the proposed borrow pit and the ultimate usage of the entire parcel.

CITY OF GLENS FALLS
ENGINEERING DEPARTMENT
46 RIDGE STREET, GLENS FALLS, N. Y. 12801
518 792-3141 • 518 792-2770

February 9, 1978

Preliminary Estimates for Landfill Closure

by Peter J. Brown, Jr. Engineer

1.	Clear & grub	$ 3,000.00
2.	Stripping Topsoil - proposed pit	2,050.00
3.	Excavation - proposed pit to Existing pit	36,000.00
4.	Excavation - Hill by dozer	24,480.00
5.	Excavation - Hill by scraper	76,475.00
6.	Sand Cover - 1.5' Hill	50,250.00
7.	Sand Cover - 1.5' Existing Pit	13,050.00
8.	Rough Grade- #6 & #7	23,247.00
9.	0.5 Clay to cover hill	37,800.00
10.	Fine Grade Clay	24,732.00
11.	Seed Fertilizer - Hill	36,000.00
12.	Mulching - Hill	18,000.00
13.	Ground Control	1,800.00
14.	Topsoil from Stockpile to #7-0.33'	2,500.00
15.	Fence around proposed pit	6,500.00
	SUB TOTAL	$ 355,884.00
	+ 5% contingency	
	TOTAL	$ 375,000.00

REFERENCE 5

P.S. 7-7-77 w

Old Landfill



A weathered, "No Trespassi
a fence surrounding the all-but-abandoned Glens Falls landfill, the presence of which is still felt by some irate West Glens Falls residents. (Mark Behan photo)

Luzerne Road Residents Want 'Mount Trashmore' Cleaned Up

By MARK BEHAN
Staff Writer

The mountainous, ashy silouhette is still plainly visible behind Charles Trombley's home.

And, for Trombley, it's a disturbing, even "deplorable" sight, one that he's lamented for 30 years or more.

Trombley is a resident of Luzerne Road in Queensbury, the site of the City of Glens Falls' now all-but-abandoned landfill. He's not alone in his gripe against the heap some have dubbed "Mount Trashmore," although other residents, like Paula Griffin, are so accustomed to the sight, they are learning to live with it.

But, what disturbs Trombley, Mrs. Griffin and other Luzerne Road residents most, is their belief that Queensbury and Glens Falls officials have "forgotten about" or "fooled" them with unfulfilled promises that "Mount Trashmore" would be cleaned up.

"They haven't done a thing about that mess, but they haven't fooled me," Trombley remarked in a recent interview. "The mess still sits there, and the gray ash still blows on our houses and clothes and now, because of the landfill, we get sundown an hour earlier than everybody else."

In the Trombley household, where the landfill has been a "sore subject" for many years, renewed hope surfaced eight months ago that the dump's days might be numbered.

It was in mid-December, 1976, that Queensbury and Glens Falls officials signed an agreement which some hailed as the end to the sticky landfill dilemma. At the time, officials of the two communities spoke of plans to improve the facility's appearance and of the possible development of a recreational area on the site.

But now, neither Queensbury Supervisor Mike Brandt nor Glens Falls Mayor Robert Cronin can offer Luzerne Road residents any substantial plans for a clean-up of the facility. In fact, Cronin said Wednesday it would be difficult to determine when any beautification program might begin.

"Eventually we all want a much more attractive facility, but it's a difficult thing and both communities are immersed in a number of other problems now," Cronin said.

Brandt and Cronin agree that the "promise" of a landfill clean-up was more a suggestion under discussion than a formal commitment by either or both communities. And, never have town or city officials attempted to "hoodwink" Luzerne Road homeowners about a clean-up, Brandt said.

"I worked hard to close that landfill and I think that was some relief for those people because the landfill was no longer growing bigger," Brandt said.

The supervisor said he believes city and town officials must initiate formal discussions on programs to improve the appearance of the facility.

Even if the clean-up were to begin tomorrow, however, it wouldn't come soon enough for Trombley, or Mrs. Griffin or one other Luzerne Road homeowner, who said: "The plans to improve the city are kind of ridicilous when people on the Northway see this thing (landfill) saying 'Welcome to

No Fees Now Charged At Transfer Station

By LEE COLEMAN
Staff Writer

Those using the Queensbury-Glens Falls landfill on Ridge Road and the Luzerne Road transfer station now pay nothing.

No permit sticker is required and no fee is charged.

An employe of the refuse agency even helps visitors unload garbage from their cars.

Members of the Warren County Refuse Agency, however, have contracted with Rist-Frost Associates of Glens Falls to implement the fee plan — 50 cents per car plus a small sticker fee and 60 cents per cubic yard for trucks — as soon as possible.

Chester Supervisor Carl Roblee, chairman of the refuse agency, said Wednesday the entire joint city-town landfill operation will be run by the county refuse agency and not the county public works department as originally planned.

James Coughlin has been hired by the agency to be landfill operator.

Roblee said Rist-Frost is seeking to devise the "best possible plan" for the sticker requirements. The firm also is working on plans for recycling various materials.

Mayor Robert J. Cronin said Wednesday the city has been pressing the county to get on with the imposition of fees.

Queensbury town supervisor Mike Brandt said the stickers for vehicles using the landfill have already been ordered and will be "relatively inexpensive" to the purchaser.

The refuse agency's fees subcommittee has discussed a plan in which vehicles pre-register with the county and purchase fee tickets in advance. The use of a tollgate fee collection system also is being considered.

Meanwhile, the Queensbury town board, during a workshop session Tuesday night, discussed the problem of "cost overrun" on the landfill, Brandt said. He said the board wants to get the fee program implemented as soon as possible.

He said, however, that the number of employes working at the Ridge Road landfill has been cut since the refuse agency took over and the fact that the landfill is a joint one will

REFERENCE 6

RECRA RESEARCH, INC.

RECORD OF TELEPHONE CONVERSATION

Date 6-9-86 Time 4:15 (am) (pm)

Line No. 6288 By PZ

Project Title N.Y. State Superfund
Glens Falls Landfill

Project No. 5280101

Company NYSDEC

Location Region 5

Individual Bill Muermann

Title

Telephone No. (518) 623-3671

Subject Designated Wetlands

Items Discussed
- location of designated Wetlands within a 1 mile radius of the landfill site.
• using a reference location of the intersection of Interstate 87 and Luzerne Road, there are no designated wetlands within a 1 mile radius.

Comments or Action Required

Distribution

REFERENCE 7

New York State Department of Environmental Conservation

MEMORANDUM

TO: Norm VanValkenburgh
FROM: Greg Sovas
SUBJECT: "Mount Trashmore" Beautification Project
DATE: April 24, 1979

In regard to the proposal by the Rotary Club of Glens Falls to beautify "Mount Trashmore," no permits would be required from the Bureau of Mineral Resources. However, our mined land reclamation staff has extensive experience in revegetating barren areas, and could provide the Rotary Club with useful technical advice on the proposed project.

REFERENCE 8

New York State Department of Environmental Conse

MEMORANDUM

TO: Norm VanValkenburgh, Director, Div. of Land Res. & Forest Mgt.
FROM: Norman H. Nosenchuck, Director, Div. of Solid Waste Mgt.
SUBJECT: Glens Falls' "Mount Trashmore"

DATE: April 24, 1979

Inasmuch as "Mount Trashmore" is an inactive refuse disposal area, we would not require a permit under 6NYCRR 360 providing that in reconfiguring and contouring the mound:

1) Total final cover over the refuse is a minimum of 24", the top 6" of which will support vegetation.

2) Top surface slopes and gradients of unlined ditches are in the range of 1-2 percent.

3) Final grades on vegetated side slopes are not steeper than 1 (vertical) on 3 (horizontal), wherever possible, and such other slopes as necessary, that are adequate to assure stabelization.

In the past, we have provided technical assistance to communities such as Glens Falls. Although our landscape architect is currently in the hospital recovering from an automobile accident, if the project is anticipated to get underway in the fall we could provide landscape architectural assistance.

EHB:bw
cc: Region 5 -
Bud Colden
Don Corliss
Larry Vernon
with enclosures

REFERENCE 9

Use of this form to develop a Tenta[illegible] Disposition (Section II). File this form in its entirety in the reg[illegible] File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to [illegible] Section Agency; Site Tracking System, Hazardous Waste Enforcement Task Force (EN-335), 401 M St., S[illegible]

I. SITE IDENTIFICATION

A. SITE NAME	B. STREET (or other identifier)		
Glens Falls Landfill	Luzerne Road		
C. CITY	**D. STATE**	**E. ZIP CODE**	**F. COUNTY NAME**
Queensbury	N.Y.	12801	Warren

G. SITE OPERATOR INFORMATION

1. NAME			2. TELEPHONE NUMBER	
City of Glens Falls / City Engineer Nick Sciartelli			(518) 792-2331	
3. STREET	**4. CITY**		**5. STATE**	**6. ZIP CODE**
City Hall	Glens Falls		N.Y.	12801

H. REALTY OWNER INFORMATION (if different from operator of site)

1. NAME		2. TELEPHONE NUMBER	
3. CITY		**4. STATE**	**5. ZIP CODE**

I. SITE DESCRIPTION

15 acre inactive landfill, poorly covered

J. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☒ 4. MUNICIPAL ☐ 5. PRIVATE

II. TENTATIVE DISPOSITION (complete this section last)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.)	B. APPARENT SERIOUSNESS OF PROBLEM
January 15, 1981	☐ 1. HIGH ☐ 2. MEDIUM ☒ 3. LOW ☐ 4. NONE

C. PREPARER INFORMATION

1. NAME	2. TELEPHONE NUMBER	3. DATE (mo., day, & yr.)
Edward L. Moore	201-621-6800	January 12, 1981

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION

1. NAME	2. TITLE	
Edward L. Moore	Sr. Geotechnical Engineer	
3. ORGANIZATION		**4. TELEPHONE NO. (area code & no.)**
Fred C. Hart Associates		201-621-6800

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
Parekh, Paresh	Fred C. Hart Associates	201-621-6800
Barker, Frances	Fred C. Hart Associates	201-621-6800

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, resl. etc)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
None		

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4.
Municipal Wastes			

E. TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS

G. DATE OF INSPECTION (mo., day, & yr.): Dec 3 1980

H. TIME OF INSPECTION: 1500 hours

I. ACCESS GAINED BY: (credentials must be shown in all cases) [X] 1. PERMISSION [ ] 2. WARRANT

J. WEATHER (describe):

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER		N/A	
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
OTHER (specify)			

FIELD MEASUREMENTS TAKEN (e.g., conductivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS
N/A		

(continued from page 1)

IV. SAMPLING INFORMATION (continued)

C. PHOTOS
1. TYPE OF PHOTOS: [X] a. GROUND [ ] b. AERIAL
3. PHOTOS IN CUSTODY OF: Fred C. Hart Associates

E. SITE MAPPED?
[ ] YES. SPECIFY LOCATION OF MAPS.

F. COORDINATES
1. LATITUDE (deg.-min.-sec.): 43° 18' 30"
2. LONGITUDE (deg.-min.-sec.): 73° 40' 50"

V. SITE INFORMATION

A. SITE STATUS
[ ] 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intermittently.)
[XX] 2. INACTIVE (Those sites which no longer receive wastes.)
[ ] 3. OTHER (specify): _____ (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?
[X] 1. NO [ ] 2. YES (specify generator's four-digit SIC Code): _____

C. AREA OF SITE (in acres): 15

D. ARE THERE BUILDINGS ON THE SITE?
[ ] 1. NO [XX] 2. YES (specify): Guard House

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

A. TRANSPORTER	B. STORER	C. TREATER	D. DISPOSER
[ ] 1. RAIL	[ ] 1. PILE	[ ] 1. FILTRATION	[X] 1. LANDFILL
[ ] 2. SHIP	[ ] 2. SURFACE IMPOUNDMENT	[ ] 2. INCINERATION	[ ] 2. LANDFARM
[ ] 3. BARGE	[ ] 3. DRUMS	[ ] 3. VOLUME REDUCTION	[ ] 3. OPEN DUMP
[X] 4. TRUCK	[ ] 4. TANK, ABOVE GROUND	[ ] 4. RECYCLING/RECOVERY	[ ] 4. SURFACE IMPOUNDMENT
[ ] 5. PIPELINE	[ ] 5. TANK, BELOW GROUND	[ ] 5. CHEM./PHYS./TREATMENT	[ ] 5. MIDNIGHT DUMPING
[ ] 6. OTHER (specify):	[ ] 6. OTHER (specify):	[ ] 6. BIOLOGICAL TREATMENT	[ ] 6. INCINERATION
		[ ] 7. WASTE OIL REPROCESSING	[ ] 7. UNDERGROUND INJECTION
		[ ] 8. SOLVENT RECOVERY	[ ] 8. OTHER (specify):
		[ ] 9. OTHER (specify):	

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this for..

[ ] 1. STORAGE [ ] 2. INCINERATION [X] 3. LANDFILL [ ] 4. SURFACE IMPOUNDMENT [ ] 5. DEEP WELL
[ ] 6. CHEM/BIO/PHYS TREATMENT [ ] 7. LANDFARM [ ] 8. OPEN DUMP [ ] 9. TRANSPORTER [ ] 10. RECYCLER/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE
[ ] 1. LIQUID [X] 2. SOLID [ ] 3. SLUDGE [ ] 4. GAS

B. WASTE CHARACTERISTICS
[ ] 1. CORROSIVE [ ] 2. IGNITABLE [ ] 3. RADIOACTIVE [ ] 4. HIGHLY VOLATILE
[X] 5. TOXIC [ ] 6. REACTIVE [ ] 7. INERT [ ] 8. FLAMMABLE
[ ] 9. OTHER (specify): Mostly Municipal Waste, allegedly some PCB capacitors

C. WASTE CATEGORIES
(Use words of wastes available) Specify items such as municipal, industrial, etc. below.
None

Continue On Reverse

	AMOUNT	AMOUNT	AMOUNT	AMOUNT
			unknown	
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF
a. (1) PAINT, PIGMENTS	b. (1) OILY WASTES	c. (1) HALOGENATED SOLVENTS	d. (1) ACIDS	e. (1) FLYASH
(2) METAL SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/MINE TAILINGS
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMELTING WASTES
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES
			(6) CYANIDE	(6) OTHER (specify):
			(7) PHENOLS	
			(8) HALOGENS	
			X (9) PCB Allened	
			(10) METALS	
			(11) OTHER (specify)	

(1) LABORATOR PHARMACEU	
(2) HOSPITAL	
(3) RADIOACTIV	
X (4) MUNICIPAL	
(5) OTHER (spec	

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X') a. SOLID	b. LIQ.	c. VAPOR	3. TOXICITY (mark 'X') a. HIGH	b. MED.	c. LOW	d. NONE	4. CAS NUMBER	5. AMOUNT	6. UNIT
PCB	X			X					unknown	

VII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

☐ A. HUMAN HEALTH HAZARDS

Continue On Page 5

☐ C. WORKER INJURY/EXPOSURE

☐ D. CONTAMINATION OF WATER SUPPLY

☐ E. CONTAMINATION OF FOOD CHAIN

☒ F. CONTAMINATION OF GROUND WATER

Possible due to high permeability.

☐ G. CONTAMINATION OF SURFACE WATER

I. FISH KILL

J. CONTAMINATION OF AIR

K. NOTICEABLE ODORS

/

L. CONTAMINATION OF SOIL

PCB contamination has been found in area. However, this was alleged due to area industry and not the landfill.

M. PROPERTY DAMAGE

☐ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

☐ P. SEWER, STORM DRAIN PROBLEMS

☒ Q. EROSION PROBLEMS

Landfill is not properly covered on top or sides.

☐ R. INADEQUATE SECURITY

☐ S. INCOMPATIBLE WASTES

VIII. HAZARD DESCRIPTION (continued)

☐ T. MIDNIGHT DUMPING

☐ U. OTHER (specify):

IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS	unknown			< 400 feet
2. IN COMMERCIAL OR INDUSTRIAL AREAS				> 1/2 mile
3. IN PUBLICLY TRAVELLED AREAS	I - 87			< 200 feet
4. PUBLIC USE AREAS (parks, schools, etc.)				

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify units)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
Estimated 25 to 40 feet	North	maybe domestic wells
D. POTENTIAL YIELD OF AQUIFER	**E. DISTANCE TO DRINKING WATER SUPPLY (specify units of measure)**	**F. DIRECTION TO DRINKING WATER SUPPLY**
unknown		

TYPE OF DRINKING WATER SUPPLY

☐ 1. NON-COMMUNITY < 15 CONNECTIONS

☒ 2. COMMUNITY (specify town): > 15 CONNECTIONS — City of Queensbury, but wells are probably also in use.

☐ 3. SURFACE WATER

☐ 4. WELL

Continue On Page 9

X. WATER AND HYDROLOGICAL DATA (continued)

M. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)		
Unknown				

N. RECEIVING WATER

1. NAME: Halfway Creek.

☐ 2. SEWERS ☒ 3. STREAMS/RIVERS 1. miles ☐ 4. LAKES/RESERVOIRS ☐ 5. OTHER (specify):

O. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

Drinking water; Class AAT

XI. SOIL AND VEGITATION DATA

LOCATION OF SITE IS IN:

☐ A. KNOWN FAULT ZONE ☐ B. KARST ZONE ☐ C. 100 YEAR FLOOD PLAIN ☐ D. WETLAND

☐ E. A REGULATED FLOODWAY ☐ F. CRITICAL HABITAT ☐ G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

	A. OVERBURDEN		B. BEDROCK (specify below)		C. OTHER (specify below)
X	1. SAND				
	2. CLAY				
X	3. GRAVEL				

XIII. SOIL PERMEABILITY

☒ A. UNKNOWN probably high ☐ B. VERY HIGH (100,000 to 1000 cm/sec.) ☐ C. HIGH (1000 to 10 cm/sec.)

☐ D. MODERATE (10 to .1 cm/sec.) ☐ E. LOW (.1 to .001 cm/sec.) ☐ F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS:

H. DISCHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS:

I. SLOPE

1. ESTIMATE % OF SLOPE: < 5%

2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.: Towards NE and SE through suburban area.

J. OTHER GEOLOGICAL DATA

There are several gravel pits within 2 miles

(RCRA, NPDES, etc.)	AGENCY	PERMIT NUMBER	ISSUED (mo., day, yr.)	DATE (mo., day, yr.)
State	DEC			1978

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

☒ NONE ☐ YES (summarize in this space)

PCB contamination has been found in area near landfill, but it was not traced to the landfill. State has purchased land from the City of Glens Fall for $1.00 and constructed a separate landfill for the contaminated soil. It appears to be well secured and capped.

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition *(Section II)* information on the first page of this form.

(Supplemental Report)

VIDENCE OF SITE INSTABILITY (Erosion, Settling, Sink Holes, etc)
☒ YES ☐ NO Erosion on top and side slopes

2. EVIDENCE OF IMPROPER DISPOSAL OF BULK LIQUIDS, SEMI-SOLIDS AND SLUDGES INTO THE LANDFILL
☐ YES ☒ NO

HECK RECORDS OF CELL LOCATION AND CONTENTS AND BENCHMARK
☐ YES ☒ NO

ASTES SURROUNDED BY SORBENT MATERIAL
☐ YES ☐ NO unknown - see note

5. DIVERSION STRUCTURES ARE EFFECTIVELY CONSTRUCTED AND PROPERLY MAINTAINED
☐ YES ☐ NO unknown - see note

VIDENCE OF PONDING OF WATER ON SITE
☐ YES ☒ NO

VIDENCE OF IMPROPER/INADEQUATE DRAINING
☐ YES ☒ NO

DEQUATE LEACHATE COLLECTION SYSTEM (If "Yes", specify Type)
☐ YES ☒ NO No system

SURFACE LEACHATE SPRING
☐ YES ☒ NO

RECORDS OF LEACHATE ANALYSIS
☐ YES ☒ NO

GAS MONITORING
☐ YES ☒ NO

GROUNDWATER MONITORING WELLS
☐ YES ☒ NO

ARTIFICIAL MEMBRANE LINER INSTALLED
☐ YES ☒ NO

SPECIFIC CONTAINMENT MEASURES (Clay Bottom, Sides, etc)
☐ YES ☐ NO unknown - see note

FIXATION (Stabilization) OF WASTE
☐ YES ☐ NO unknown - see note

ADEQUATE CLOSURE OF INACTIVE PORTION OF FACILITY
☐ YES ☒ NO

6. COVER (Type)

Note: This is an inactive landfill with no major operating problems when it was active. It does appear as though it was covered with adequate low permeability material.

6a. THICKNESS

6b. PERMEABILITY

6c. DAILY APPLICATION
☐ YES ☐ NO

EPA Form 7270-3E (10-79)

RECORD OF COMMUNICATION

☐ OTHER (SPECIFY) 10 page form (Record of hom chec

TO: Dr. Richard Spear

FROM: Edward L. Moore

TIME

SUBJECT: GLENS FALLS L.F. (TDD# 02-8011-50)

SUMMARY OF COMMUNICATION

The Glens Falls Landfill located off Luzerne Road in Queensbury, New York in Warren County was closed by the City of Glens Falls during 1978. During operation, the site was referred to as an unsightly landfill and is visible from Interstate 87. Quarterly inspections since 1972 indicate full compliance with the exception of infrequent trash protrusion. The site was used primarily for municipal refuse but some quantity of PCB capacitors may have been deposited here. Leachate at the site reportedly flows into Halfway Creek. The weather at the time of inspection was too dry to confirm this report.

PCB contaminated soil was discovered in the Town of Queensbury in the vicinity of this landfill. The following information was obtained from the City Engineer of Glens Falls. The State concluded that the PCB contamination did not originate from the Glens Falls landfill. PCB contamination was attributed to local industry. The City of Glens Falls sold a portion of their landfill site to N.Y.S. for the construction of a PCB landfill. The PCB landfill should be considered a separate site.

CONCLUSIONS, ACTION TAKEN OR REQUIRED

We recommend sampling on a medium priority basis. However, sampling should be coordinated with a sampling program to investigate the State's PCB landfill. We recommend that this PCB site be assigned to us with the next group of TDD's.

INFORMATION COPIES TO:

REFERENCE 10

RECRA ENVIRONMENTAL, INC.
4248 Ridge Lea Road
Amherst, NY 14226
(716) 838-6200

JUN 26 1986
RECRA RESEARCH, INC.

June 9, 1986

Mr. Micheal Kelly
Glens Falls Water and Sewer Department
178 Dix Road
Glens Falls, NY 12801

Dear Mr. Kelly:

Enclosed please find a copy of the topographic map presenting a 3-mile radius around the Glens Falls Landfill. Please illustrate on the map those areas that are using groundwater as a potable source. I would appreciate any additional information you may be able to provide regarding the depth of wells, type of material wells are screened in, and whether an alternate public water supply is available to the residents using groundwater.

Also, I would like to take this opportunity to confirm our conversation of June 9, 1986 regarding the Town of Queensbury and City of Glen Falls public water supply.

- Town of Queensbury draws water from the Hudson River. Water treatment plant is located on Corinth Road.
- City of Glens Falls draws water from 4 surface water reservoirs located in the Luzerne Mountain area.

Thank you for all your help. If you should have a question regarding the map or requested information, please do not hesitate to contact the undersigned.

Sincerely,

RECRA ENVIRONMENTAL, INC.

Patricia M. Perry

PMP:pal
Enclosure

Michael Kelly
Glens Falls Water and Service Department

: NOTES
SURFACE Feed before Pumping Station into city

RECRA ENVIRONMENTAL, INC.
Hazardous Waste And Toxic Substance Control

RECEIVED
JUL 11 1986
RECRA RESEARCH, INC.

June 30, 1986

Mr. Ralph Van Duzen
Queensbury Water Department
RD #2 Corinth Road
Glens Falls, NY 12801

Dear Mr. Van Duzen:

On June 30, 1986, I spoke with a representative of your department and explained that I was in need of information regarding public water supply service area as part of an effort to determine groundwater usage within a 3-mile radius of the Glens Falls Landfill. I also mentioned during this conversation that Recra is a contractor for the New York State Department of Environmental Conservation - Superfund project.

Enclosed I have provided a copy of the topographic map presenting a 3-mile radius around the Glens Falls Landfill on Luzerne Road. Please illustrate on the map those areas supplied by the Queensbury Water Department and return it to me. As you will notice, the water distribution lines for the City of Glens Falls Water Department have been noted by Mr. Michael Kelly of that department.

Should you have any questions or comments regarding the information requested, please feel free to call me at (716) 838-6200. Thank you and your expedient assistance in providing this information will be appreciated.

Sincerely,

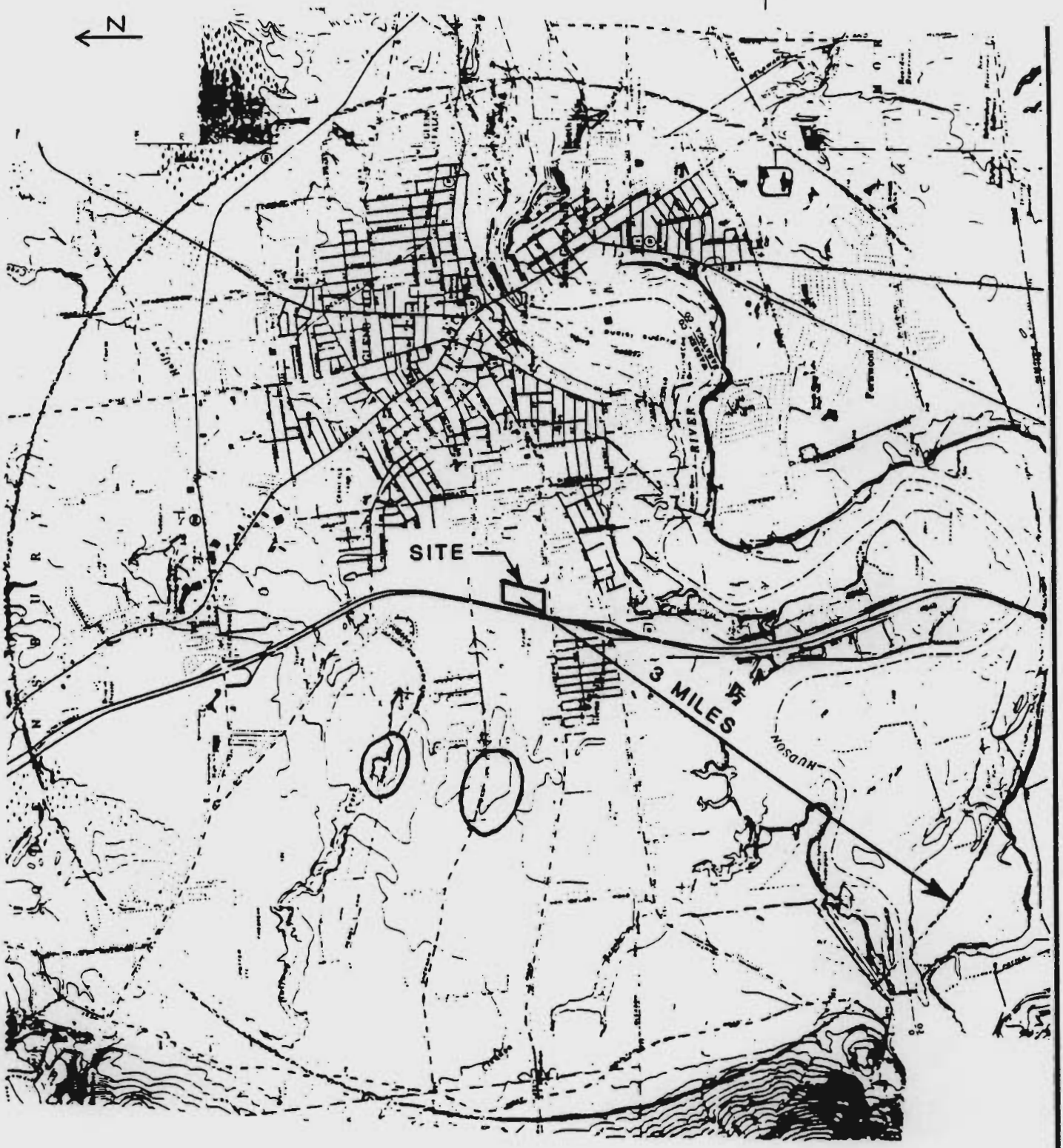
RECRA ENVIRONMENTAL, INC.

Patricia M. Perry

Patricia M. Perry
Project Geologist

PMP:pal
Enclosure

F



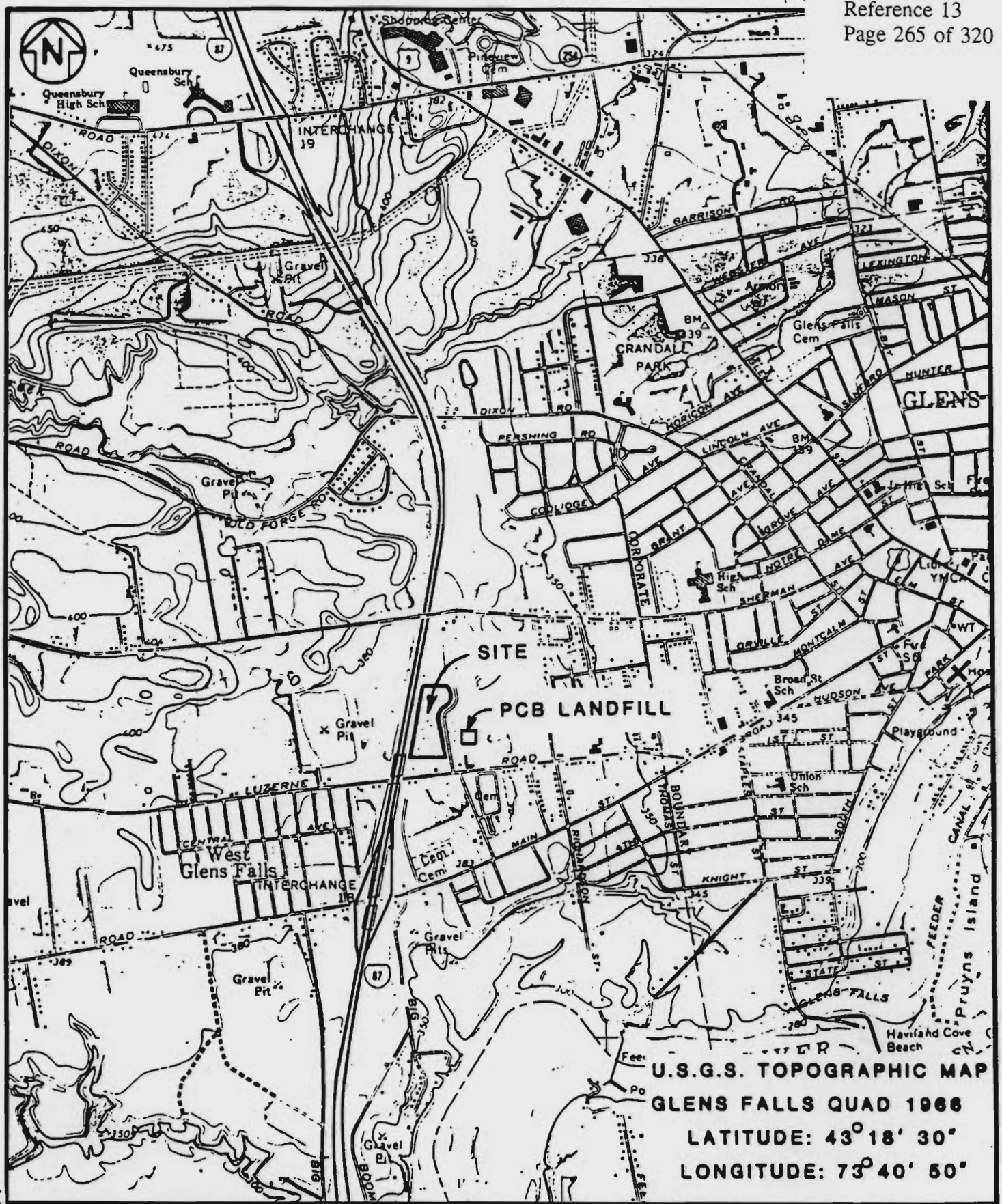
NOTE: CIRCLED AREAS NOT SERVICED BY COMMUNITY SURFACE WATER

	Scale: NTS			GLENS FALLS LANDFILL GLENS FALLS, N.Y. N.Y.S. SUPERFUND	GROUNDWATER USAGE MAP
		By	Date		
	Dwn.	DLS	7/86		
	Ckd.				
	Ap'vd.				
	Rev.			Project No. 5C280101	A

61160-1

BRUNNING

REFERENCE 11



RECRA RESEARCH INC. BUFFALO, NEW YORK	Scale: 1=24000			GLENS FALLS LANDFILL GLENS FALLS, N.Y. N.Y.S. SUPERFUND PHASE II
		By	Date	VICINITY MAP
	Dwn.	DLS	3/86	
	Ckd.			
	Ap'vd.			
	Rev.			
	Project No.	5C280101		A

BRUNING 61160-1

REFERENCE 12

STATE OF NEW YORK

OFFICIAL COMPILATION

OF

CODES, RULES AND REGULATIONS

MARIO M. CUOMO
Governor

GAIL S. SHAFFER
Secretary of State

Published by
DEPARTMENT OF STATE
162 Washington Avenue
Albany, New York 12231

1/83

ARTICLE 19

Upper Hudson River Drainage Basin Series

PART

940 Hoosic River Drainage Basin

941 Upper Hudson River Drainage Basin

941.6 Table I.

TABLE I

CLASSIFICATIONS AND STANDARDS OF QUALITY AND PURITY ASSIGNED TO FRESH SURFACE WATERS WITHIN THE UPPER HUDSON RIVER DRAINAGE BASIN IN ESSEX, HAMILTON, WARREN, WASHINGTON, FULTON, SARATOGA, AND RENSSELAER COUNTIES, NEW YORK EXCEPT WATERS CONTAINED WITHIN BOUNDARIES OF STATE-OWNED FOREST PRESERVE LANDS, THE HOOSIC RIVER DRAINAGE BASIN, AND THE WATERS OF LOON LAKE, BRANT LAKE, FRIENDS LAKE, AND THEIR TRIBUTARIES.

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
1	H portion	Hudson River and Champlain Canal	From trib. 240 (Mohawk River) to dam at Lock 2. Water source for the Town of Waterford.	J-25sw J-25nw	A	A
2	H portion	Hudson River and Champlain Canal	From dam at Lock 2 to dam at Lock 3.	J-25nw	D	D
3	H portion	Hudson River and Champlain Canal	From dam at Lock 3 to trib. 301 (Batten Kill).	H-25 J-25nw	B	B
4	H portion	Hudson River and Champlain Canal	From trib. 301 (Batten Kill) to dam at Fort Miller.	H-25	D	D
5	H portion	Hudson River and Champlain Canal	From dam at Fort Miller to trib. 318 (Snook Kill).	H-25	C	C
6	H portion	Hudson River and Champlain Canal	From trib. 318 (Snook Kill) to 0.25 mile above falls at Glens Falls.	H-25 G-25	D	D
7	H portion	Hudson River	From 0.25 mile above falls at Glens Falls to Sherman Island Dam.	H-24	B	B
7.1	H portion	Hudson River	From Sherman Island Dam to dam at Spier Falls.	H-24 G-25	A	A
7.2	H portion	Hudson River	From dam at Spier Falls to dam at Corinth.	H-24	C	C

Reference 13
Page 269 of 320


GLENS FALLS
25
G-26
G-24
HUDSON FALLS
GLENS FALLS
H-25
SCALE IN MILES
0 1 2 3
MAP G-25

ARTICLE 7

Lake Champlain Drainage Basin

PART

830 Lake Champlain Drainage Basin

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
486	C-134-4-19 portion as described	Halfway Creek	Enters Wood Creek from west at northeast corner of Village of Fort Ann and 1.0 mile southeast of Kane Falls. Mouth to Fort Ann water supply intake 0.3 mile upstream from mouth and 0.7 mile southeast of Kane Falls.	G-26	D	D
487	C-134-4-19 portion as described	Halfway Creek	From Fort Ann water supply intake upstream to trib. 8 which enters from northwest 2.5 miles east of Griswolds Mills and 2.4 miles north of Kingsbury.	G-26 G-25	A	A
488	C-134-4-19 portion as described	Halfway Creek	From trib. 8 upstream to dam at Griswolds Mills which is located 1.2 miles southeast of West Fort Ann and 1.6 miles northwest of Vaughns.	G-25	A	A(T)
489	C-134-4-19 portion as described	Halfway Creek	From dam at Griswolds Mills upstream to source at P 455a (Wilkie Reservoir).	G-25 G-24	AA	AA(T)
490	C-134-4-19-1 and tribs.	Tributary of Halfway Creek	Enters Halfway Creek from southwest at northwesterly line of Village of Fort Ann and 0.2 mile upstream from mouth.	G-26 G-25	D	D

GLENS FALLS
QUADRANGLE



REFERENCE 13

Surficial Geology

of the

Glens Falls Region, New York

T. Gordon Connally

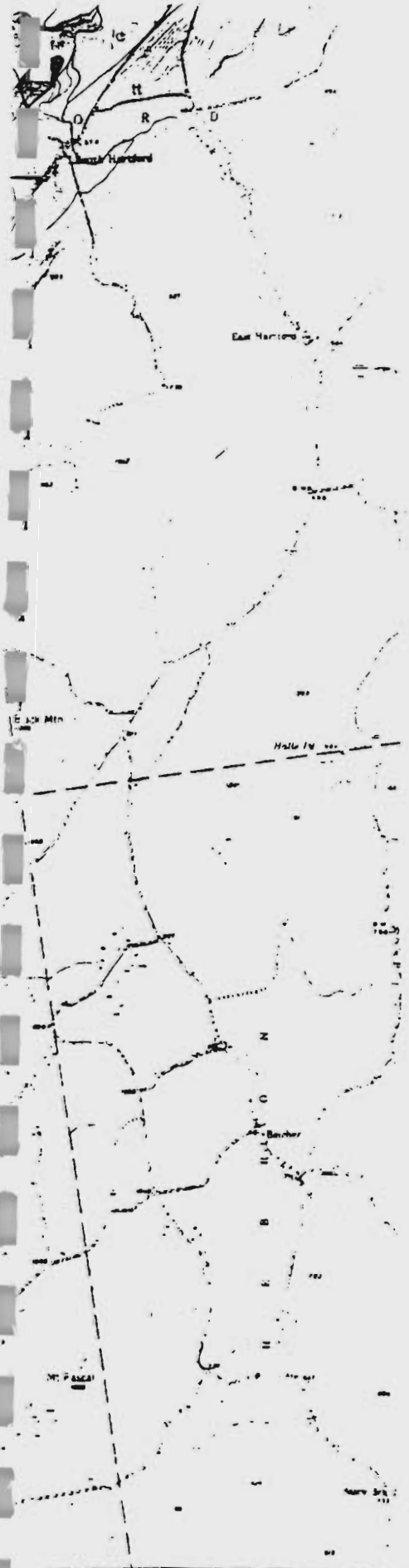
NEW YORK STATE MUSEUM

MAP AND CHART SERIES NUMBER 25



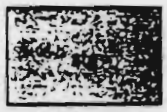


Mapped, edited, and published by the Geological Survey



p

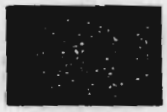
Swamp deposits - organic matter and clay more than 24" thick, possibly with disseminated silt and sand; in bogs, swamps and poorly drained areas. Some bogs are potential sources of humus for local agriculture or for commercial peat.



Stream terrace gravel - flat-topped gravels, sands, and silts, flanking present or former stream channels; represents a higher level, and therefore former cycle, of stream deposition than alluvium. This unit is too scarce for economic utilization.

lc

Lake clay - varved or rhythmically bedded clays and silts, with some sand and scattered boulders; deposited on the floor of proglacial lakes. These deposits probably represent continuous deposition in glacial Lakes Albany, Quaker Springs, and Coveville. Lake clay is poorly drained, but easily excavated.



Lake sand* - very fine sands to pebbly sands from glacial Lakes Albany, Quaker Springs, or Coveville. Horizontally stratified sands usually represent bottomset deltaic deposits and cross-laminated deposits represent pebble-poor deltaic or beach deposits. The sand tends to be very well sorted, well drained, and easily excavated. It is an excellent source for construction sand and has been borrowed extensively for fill.



Delta gravel* - fine pebbles to boulders with up to 50% sands and silts deposited where streams emptied into glacial Lakes Albany, Quaker Springs, or Coveville; where exposed these sediments exhibit large scale foreset beds and thick topset beds. Delta gravel is usually well sorted and represents the best source of high quality sand and gravel in the area.

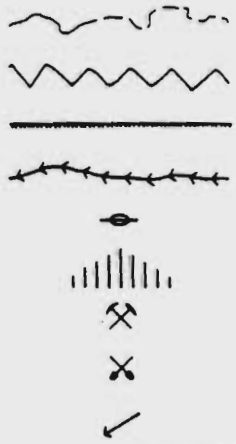
*Subscripts 1-5 may appear with ls, dg, is, and ow, indicating contemporaneous deposition (sequences) as discussed in text.

Ice-contact stratified drift* - cc
(kames), linear ridges (kame mc
terraces), or sinuous ridges (ice
bedded sands and gravels with m
on top, within, under, or at the
adjacent to the ice. Slump str
deposits. Ice-contact stratified
Falls region. It is well drained
sorting, but lenses or poor sand r

Till - Continuous mantle of gr
having an irregular topography
dery and has a sandy loam m
tions or fill and is well drained
clay loam matrix, although this
cult to excavate by hand but h
ablation facies may be present.

Thin till - discontinuous blan
with many knobs of exposed b
of Till.

Bedrock - exposed bedrock, be
less than 24" thick.





REFERENCE 14

RECRA RESEARCH, INC.

RECORD OF TELEPHONE CONVERSATION

Date 8-29-83 Time - (am) (pm)

Line No. - By A.J. LaPres

Project Title NYSDEC/SUPERFUND GLENS FALLS LANDFILL Project No. 5C280101

Company WARREN COUNTY SOIL SURVEY Location QUAKER VLG, GLENS FALLS, NY

Individual JOE BYSTRAK Title

Telephone No. (518) 793-6883

Subject SOILS AT GLENS FALLS

Items Discussed
• SURFICIAL SOIL TYPE
OAKVILLE LOAMY FINE SAND
- WELL DRAINED
- ORIGIN: OUTWASH PLAIN DEPOSITS, LAKE PLAINS
- PERMEABILITY - RAPID TO VERY RAPID

Comments or Action Required

Distribution

REFERENCE 15

RECRA RESEARCH, INC.

RECORD OF TELEPHONE CONVERSATION

Date 8-29-83 Time - (am) (pm)

Line No. - By A.J. LAPRES

Project Title NYSDEC/SUPERFUND GLENS FALLS LANDFILL

Project No. 5C280101

Company AMERICAN DRILLING CO.

Location GLENS FALLS, NY

Individual JEFF TYLER

Title

Telephone No. (518) 792-5277

Subject GEOLOGY OF SITE AREA

Items Discussed
• UNCONSOLIDATED MATERIAL IS SAND & GRAVEL
• BEDROCK ENCOUNTERED AT ≈ 119 FEET: SHALE OR LIMEST
• WELLS USUALLY SCREENED IN GRAVEL AT DEPTHS OF ≈ 50 TO 110 FEET; YIELDS USU
• TYPICAL YIELDS IN GRAVEL ZONE RANGE FROM 50-100 GAL/MIN
• GROUNDWATER USED FOR IRRIGATION
• WELL LOCATED BEHIND COPPER KETTLE RESTAURANT NOW SWISS CHALET MOTEL IS SCREENED IN GRAVEL ≈ 100 FEET.
• EXPECT FIRST ENCOUNTERED WATER AT 20 OR 30 FEET.

Comments or Action Required

Distribution

REFERENCE 16

Soil Mechanics in Engineering Practice

Karl Terzaghi
Late Professor of the Practice of Civil Engineering
Harvard University
Lecturer and Research Consultant in Civil Engineering
University of Illinois

Ralph B. Peck
Professor of Foundation Engineering
University of Illinois

Second Edition

JOHN WILEY & SONS, INC., New York, London, Sydney

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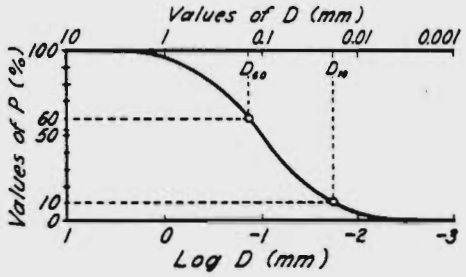


Fig. 5.1. Semilogarithmic plot of results of mechanical analysis.

than the size denoted by the abscissa. The more uniform the grain size, the steeper is the slope of the curve; a vertical line represents a perfectly uniform powder. The most important advantage of a semilogarithmic plot is that the grain-size curves of soils having equal uniformity are identical in shape, regardless of the average grain size. In addition, the horizontal distance between two curves of the same shape is equal to the logarithm of the ratio of the average grain sizes of the corresponding soils.

Figure 5.2 shows several typical grain-size curves. Curve *a* is a common type. It closely resembles the normal frequency curve that represents one of the fundamental laws of statistics. Since grain size is a statistical phenomenon, attempts have been made to utilize the terms and concepts of statistics to describe the results of mechanical analyses. Such refinements, however, are usually not warranted in connection with soil mechanics for engineering purposes.

If a sample has the grain-size distribution shown in Fig. 5.2*a*, the uniformity of the fraction having grains larger than D_{50} (corresponding to $P = 50\%$) is approximately equal to that of the fraction having grains smaller than D_{50}. If the distribution resembles that shown in *b*, the coarser half of the sample is relatively uniform, whereas the size of the grains in the finer half varies over a wide range. Conversely, the distribution represented in *c* corresponds to a sample in which the coarser grains are of widely different sizes and the finer ones are more uniform. The curves represented in *d* and *e* are said to be composite.

The grain-size curves of immature residual soils are usually similar to that shown in Fig. 5.2*b*. With increasing age of the soil, the average grain size decreases because of weathering, and the curves become more nearly straight (Fig. 5.2*a*). The grain-size curves of mature soils resemble that shown in Fig. 5.2*c*. Distributions represented by *b* and

the surface and with leakage out of reservoirs. The temperature of the percolating water varies so little that the unit weight γ_w is practically constant and, in addition, the viscosity η varies within fairly narrow limits. Therefore, it is customary to substitute in Eq. 11.4

$$k = K\frac{\gamma_w}{\eta} \tag{11.5}$$

whence

$$v = ki \tag{11.6}$$

In civil engineering, the value k is commonly called the *coefficient of permeability*. Equation 11.6 is known as *Darcy's law* (Darcy 1856).

It should be emphasized that the permeability characteristics of a porous material are expressed by K (square centimeters) and not by k (centimeters per second). The coefficient K is independent of the properties of the liquid, whereas k depends not only on the properties of the porous material, but also on the properties of the liquid. The use of k in this book, or in civil engineering in general, is justified only by convenience.

The channels through which the water particles travel in a mass of soil have a variable and irregular cross section. As a consequence, the real velocity of flow is extremely variable. However, the average rate of flow through such channels is governed by the same laws that determine the rate of flow through straight capillary tubes having a uniform cross section. If the cross section of the tube is circular, the velocity of flow increases, according to Poiseuille's law, with the square of the diameter of the tube. Since the average diameter of the voids in soil at a given porosity increases practically in proportion to the grain size D, it is possible to express k on the basis of Poiseuille's law as

$$k = \text{constant} \times D^2$$

From his experiments with loose filter sands of high uniformity (uniformity coefficient not greater than about 2), Allen Hazen obtained the empirical equation,

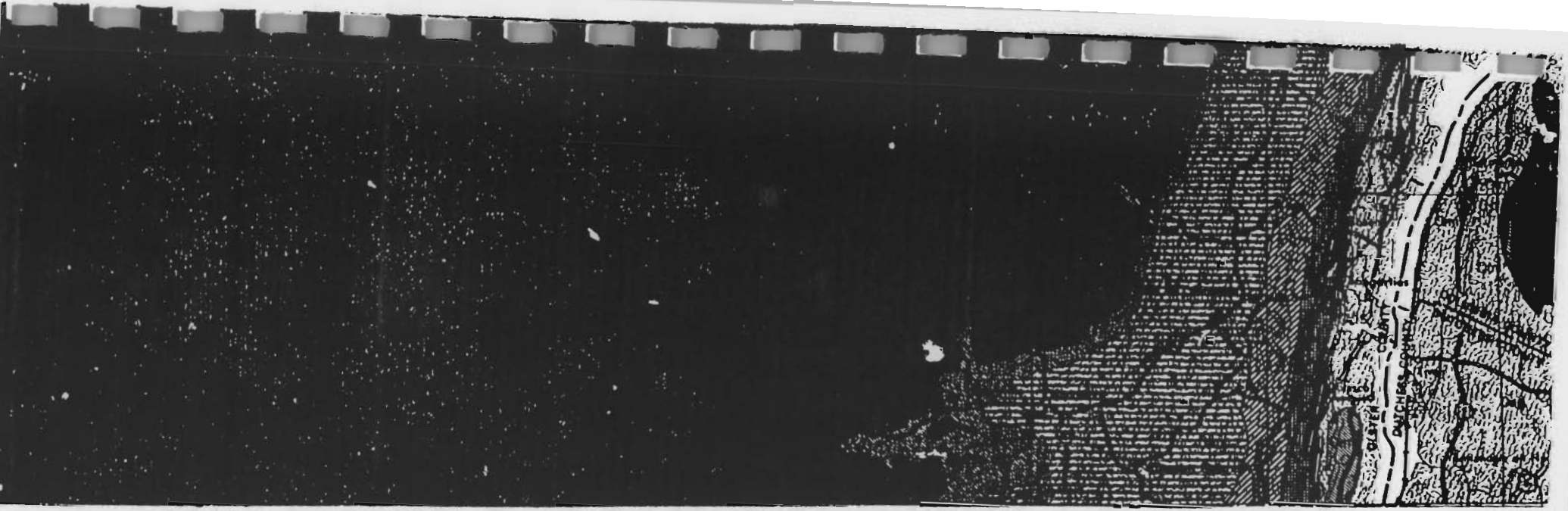
$$k(\text{cm/sec}) = C_1 D_{10}^2 \tag{11.7}$$

in which D_{10} is the effective size in centimeters (see Article 5), and C_1 (1/cm sec) varies from about 100 to 150. It should be noted that Eq. 11.7 is applicable only to fairly uniform sands in a loose state.

Relation between Void Ratio and Permeability

When a soil is compressed or vibrated, the volume occupied by its solid constituents remains practically unchanged, but the volume of the

REFERENCE 17



GEOLOGIC MAP OF NEW YORK

1970

Hudson-Mohawk Sheet

Scale 1:250,000

5 0 5 10 15 Statute Miles 20

5 0 5 10 15 20 25 Kilometers 30

CONTOUR INTERVAL 100 FEET

REF

Reference 13
Page 288 of 320


45'
30'
Hudson Falls
Fort Edward
Fortsville
Greenwich
Wilton
North Greenfield
Bacon Hill
Northumberland
Schuylerville
Victory Mills
Saratoga Springs
Saratoga Lake
Saratoga Lake
Ballston Spa
Stillwater Center
Stillwater
Easton
Willard Mountain
HUDSON RIVER
WASHINGTON CO
SARATOGA CO

LEGEND

NOTE: Where the uniformity of lithology and availability of pattern combinations permit, the dominant lithology of a mapping unit is symbolized as follows:

Cross-hatch patterns:
rhombic grid—dolostones dolomitic marbles.
rectangular grid—limestones, calcitic marbles.

Line patterns:
straight—pelitic rocks, shales, shales interbedded with siltstones and sandstones.
wavy—phyllites, schists, pelitic gneisses.

Stipple patterns:
regular red—quartz sandstones and quartzites.
regular yellow—unconsolidated deposits.
random red—non-marine sedimentary rocks.
blob—graywackes in Paleozoic; inequigranular gneisses in Proterozoic
blue circle—mélange (Ordovician only).

Random dash, V, and + patterns: igneous or meta-igneous rocks (except mug)

A query (?) placed before the symbol of a mapping unit signifies that the unit may be older than the age indicated. A query placed after the symbol of a mapping unit signifies doubt concerning the identification of that unit.

An irregular lower margin on the "color boxes" signifies that the unit has an unconformable relationship with subjacent units, however not necessarily with the next unit listed. Wavy lines signify parallel unconformities; sawtooth lines signify angular unconformities.

Boxes outlined in red denote igneous or meta-igneous rocks.

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.

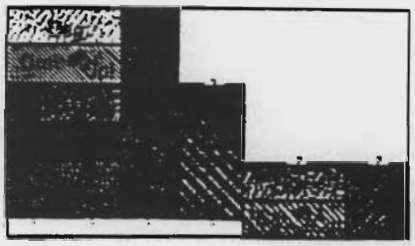
HAMILTON GROUP
1,700-2,800 ft. (520-850 m.)

Dhmo Moscow Formation—In west: Cooperstown and Portland Point shale and sandstone Members; In east:

PALEOZOIC

Ordovician

Cambrian



EUGEOSYNCLINAL (ALLOCHTHONOUS
up to 6,000 ft.? (2000 m

Oag Austin Glen Formation shale.
Omi Mount Merino and Indi. mations—shale. slate, c
Opl Pillow lava at Stark's Kn lerville, Saratoga County
Op North of Troy: Poultney and "C" Members)—sha stone.
Osf South of Troy: Stuyvesa mation —shale, siltstone

O€e Elizaville Formation—shale, argillite, q
O€u Undifferentiated Middle Ordovician th bçian (or older?) allochthonous roc pelite; lesser quartzite, limestone, graywacke.
€pw North of Troy: Poultney Formation (" shale, limestone; Hatch Hill Formatior stone; West Castleton Formation—sha conglomerate.
€g South of Troy: Germantown Formatio glomerate, limestone.
?€m North of 43°: Mettawee Slate, inclu (North Brittain) Conglomerate, Mudd ite, Zion Hill Quartzite, and Bomose Members.
?€n South of 43°: Nassau Formation—sla quartzite, includes Stuyvesant Cong mond Rock Quartzite, Curtis Mount and Bomoseen Graywacke Members.
?€a Austerlitz Phyllite—minor quartzite.
?€gt Greenstones and tuffs and/or basalts.
?€r Rensselaer Graywacke—minor shale.
?€ev Everett Schist—minor meta-graywac cludes Greylock Schist in Massachuse

INTRUSIVE PEGMATITE DIKE

p Granite pegmatite dike, unmetamorp

REFERENCE 18

Dangerous Properties of Industrial Materials

Sixth Edition

N. Irving Sax

Products of combustion of polyamide-6 in furnace maintained at 800 degrees centigrade (APFRAD 35,461,77)

TOXICITY DATA:	3	CODEN:
ihl-mus LC50:23 mg/m3/10M		APFRAD 35,461,77

Reported in EPA TSCA Inventory, 1980.
THR: HIGH ihl.

POLYAMINE D

NIOSH #: TQ 0525000

TOXICITY DATA:	2	CODEN:
skn-rbt 500 mg open MLD		UCDS** 4/1/64
eye-rbt 50 mg SEV		UCDS** 4/1/64
orl-rat LD50:2590 mg/kg		UCDS** 4/1/64
skn-rbt LD50:880 mg/kg		UCDS** 4/1/64

THR: MOD orl, skn. Skn and eye irr.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

POLYAMINE T

NIOSH #: TQ 0600000

TOXICITY DATA:	3-1	CODEN:
skn-rbt 500 mg open MLD		UCDS** 7/16/65
orl-rat LD50:7460 mg/kg		UCDS** 7/16/65
skn-rbt LD50:20 mg/kg		UCDS** 7/16/65

THR: HIGH skn; LOW orl. A skn irr.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

beta-POLY(1,3-BUTADIENE)STYRENE, COPOLYMER

CAS RN: 9003558 NIOSH #: WL 6000000

SYN: KOPOLYMER BUTADIEN STYRENOVY (CZECH)

TOXICITY DATA:	2	CODEN:
eye-rbt 500 mg/24H MOD		28ZPAK -,257,72

Reported in EPA TSCA Inventory, 1980.
THR: An eye irr.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

POLYCHLORINATED BIPHENYLS

CAS RN: 1336363 NIOSH #: TQ 1350000

Bp: 340°-375°, flash p: 383°F (COC), d: 1.44 @ 30°. For toxicity information, see individual mixtures below. A series of technical mixtures consisting of many isomers and compounds that vary from mobile oily liquids to white crystalline solids and hard noncrystalline resins. Technical products vary in composition, in the degree of chlorination and possibly according to batch (IARC** 7,262,74).

SYNS:

AROCLOR	CHLOREXTOL
CHLOPHEN	CHLORO BIPHENYL
CHLORINATED BIPHENYL	CHLORO-1,1-BIPHENYL
CHLORINATED DIPHENYL	CLOPHEN
CHLORINATED DIPHENYLENE	KANECHLOR S
NOFLAMOL	PYRALENE
PCBS	PYRANOL
PHENOCHLOR	SANTOTHERM
POLYCHLORINATED BIPHENYL	THERMINOL FR-1
POLYCHLOROBIPHENYL	

TOXICITY DATA:

Carcinogenic Determination: Human Suspected IARC** 18,43,78. *Toxicology Review:* EVHPAZ 1,105,72; JOCMA7 18,109,76; FEPRA7 34,1675,75; ARVPAX 14,139,74; ARPAAQ 94,125,72; CHRYAQ 49(4), 14,76; STEVA8 2(4),305,74; BISNAS 20,958,70; 27ZTAP 3,34,69. Occupational Exposure to Polychlorinated Biphenyls recm std: Air: TWA 1.0 ug/m3 NTIS**. "NIOSH Manual of Analytical Methods" VOL 1 244,253, VOL 2 S121, VOL 4 S120*. NIOSH Current Intelligence Bulletin 7, 1975. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8E No: 07780209-Followup Reply Received as of April, 1979.

THR: A susp hmn CARC. HIGH-MOD acute orl, ihl, skn. Also causes a chloracne. Like the chlorinated naphthalenes, the chlorinated diphenyls have two distinct actions on the body, namely, a skn effect and a toxic action on the liver. The lesion produced in the liver is an acute yellow atrophy. This hepato toxic action of the chlorinated diphenyls appears to be increased if there is exposure to carbon tetrachloride at the same time. The higher the chlorine content of the diphenyl compound, the more toxic is it liable to be. Oxides of chlorinated diphenyls are more tox than the unoxidized materials. The skin lesion is known as chloracne, and consists of small pimples and dark pigmentation of the exposed areas, initially. Later, comedones and pustules develop. In persons who have suffered systematic intoxication, the usual signs and symptoms are nausea, vomiting, loss of weight, jaundice, edema and abdominal pain. Where the liver damage has been severe the patient may pass into coma and die.

Fire Hazard: Slight, when exposed to heat or flame.
Disaster Hazard: Dangerous; when heated to decomp, they emit highly tox fumes.
For further information see PCB's, Vol. 3, No. 4 of *DPIM Report.*

POLYCHLORINATED BIPHENYL (AROCLOR 1221)

CAS RN: 11104282 NIOSH #: TQ 1352000

SYNS:

AROCHLOR 1221	CHLORODIPHENYL (21% Cl)

TOXICITY DATA:	2	CODEN:
orl-rbt LD50:3980 mg/kg		ARVPAX 14,139,74
skn-rbt LDLo:3169 mg/kg		ARVPAX 14,139,74

Carcinogenic Determination: Human Suspected IARC** 18,43,78. *Toxicology Review:* ARVPAX 14,139,74; RREVAH 44,1,73; STEVA8 2(4),305,74; BISNAS 20,958,70. Occupational Exposure to Polychlorinated Biphenyls recm Std: Air: TWA 1.0 ug/m3 NTIS**.
THR: MOD orl, skn. Susp hmn CARC. See also PCB's.
Disaster Hazard: When heated to decomp it emits tox fumes of Cl^-.

REFERENCE 19

CITY OF GLENS FALLS
ENGINEERING DEPARTMENT
46 RIDGE STREET, GLENS FALLS, N. Y. 12801
518 792-3141 • 518 792-2770

January 17, 1978

Mr. D.A. Corliss, P.E.
N.Y.S. Dept. of Environmental Conservation
Hudson Street
Warrensburg, New York 12885

RE: Closure of Former Landfill on Luzerne Road

Dear Mr. Corliss,

It is my understanding that your Department, at the December 5th meeting here in City Hall, had requested a brief report on planned closure procedures for the landfill on Luzerne Road to be submitted by the middle of January.

This Department began surveying the property December 19th and presently has completed the existing topo map. We are now completing cross sections of the existing and proposed area, and will soon begin the proposed contour map.

It is my intention to submit the complete plans and detailed report to the Common Council by February 10, 1978 for their consideration and hopefully, shortly thereafter to you.

Should any question remain, please call at your convenience.

Sincerely yours,

Peter J. Brown, Jr. Engineer

C: Mr. Garner C. Tripp, Jr., P.E.
Mayor Edward Bartholomew

REFERENCE 20

RECRA ENVIRONMENTAL, INC.
Hazardous Waste And Toxic Substance Control

June 13, 1986

ENVIRONMENTAL CONSERVATION
JUN 16 1986
ENVIRONMENTAL QUALITY
WARRENSBURG

RECEIVED
JUN 18 1986
RECRA RESEARCH, INC.

Mr. Raymond Cowen, P.E.
New York State Department of
Environmental Conservation
P.O. Box 220, Hudson Street
Warrensburg, NY 12885

Dear Mr. Cowen:

As part of the background information search requirements for the NYSDEC Superfund sites, we, the consultants, are required to have all our correspondence documented.

Below is a synopsis of our telephone conversation which took place on June 11, 1986 regarding the Glens Falls landfill. I would like to request that you read the information for accuracy, sign at the bottom of the page, and return it to the undersigned.

- depth of the landfill is unknown; however, can assume the bottom of the landfill is below or at the water table.
- the landfill was never properly closed by the city meaning no formal cap applied.
- landfill was re-graded and seeded by the Rotary Club as part of their beautification project performed in 1979.
- landfill was probably an old gravel pit that was backfilled with municipal waste.

Also, I have included a blueprint of the Glens Falls site plan as per our conversation of June 13, 1986. Please shade in the area of past PCB disposal activity and return it along with the letter.

Thank you for your help and please feel free to correct any inaccuracies should they occur.

Sincerely,

RECRA ENVIRONMENTAL, INC.

Patricia M Perry

Patricia M. Perry
Project Geologist

PMP:pal

Raymond Cowen

4248 Ridge Lea Road, Amherst, New York 14226 Telephone (716) 838-6200

REFERENCE 21

President | Vice-President and Program Chairman | Treasurer

Rotary Club of Glens Falls, N.Y.

ORGANIZED APRIL 21, 1922
DISTRICT 719

Secretary
OLSON C. BRAMAN
4 MEADOW DRIVE
GLENS FALLS, N.Y. 12801

"He Profits Most Who Serves Best"

Directors
ROBERT AXON
W. HARRY DURLING
R. CASE PRIME
DR. ROBERT C. WESCOTT

July 17, 1979

New York State Department of Environmental Conservation
Raybrook
New York 12977

Attn. Mr. Thomas B. Monroe, Regional Director - Region 5

Dear Mr. Monroe:

This is in reference to your correspondence of July 2, 1979 relative to the Glens Falls Rotary's Mount Trashmore Beautification Project.

Thank you for your letter supporting the aforementioned beautification. Upon receipt of Mr. VanValkenburgh's letter, it was our assessment that the work can be accomplished comfortably within the stated parameters.

We do appreciate the offer for landscape architectural assistance, and depending on our budget for plantings, we will contact Mr. VanValkenburgh and avail ourselves of that advice if possible.

Again, thank you for your support of what we hope is a worthwhile community service project.

Very truly yours,

ROTARY CLUB OF GLENS FALLS, N.Y.

Theodore Zoli, Jr.
President

cc: Robert Westcott

ENVIRONMENTAL CONSERVATION
RECEIVED
AUG 02 1979
ENVIRONMENTAL QUALITY
WARRENSBURG

REFERENCE 22

DAILY FIELD REPORT

PROJECT NO. SC280101 LOCATION GLENS FALLS

DATE 7/11/85 REPORT NO. _____

WEATHER CONDITIONS SUNNY + WARM

REPORT

ACTIVITIES

~ 8:30 AM At site w/ AJL and drillers (Denny + Roger)

Survey site for well placement and accessability

Front of landfill has fence w/ locking gates, manicured lawn

East, South, and west portions of landfill are well vegetated w/ grasses, shrubs and sm/ trees (except where dirt bike trails exist).

North portion of landfill is steeper w/ less vegetation and some erosion

Area to east - Northeast has irregular topography, looks like former borrow area. ~ 80% vegetation grasses + shrubs.

PCB cell fenced in. Grass cap (100%). Monitoring wells visible.

DELAYS

Go to town hall for tax map.

Drill afternoon.

REMARKS

Air monitoring survey indicates o.k.

Kevin Comm

REFERENCE 23

23

00-00-103 (6/78)

New York State Department of Environmental Conservation

MEMORANDUM

RECEIVED
JUN - 6 1986
RECRA RESEARCH, INC.

TO: Pat Perry - RECRA RESEARCH
FROM: Ray Cowen
SUBJECT: West Glens Falls
DATE: 6/4/86

Per our telecon this date, I am enclosing water level and analytical data from monitoring wells at the West Glens Falls PCB Facility, covering the period of July thru December of 1985. Please note that one upgradient composite (N-1 & W-1) and one downgradient composite (S-1, E-1, & SE-1) are submitted for analytical work. The monitoring reports will indicate if all wells were sampled on given date. Frequently S-1 is too deep to sample. Ray Cowen

REFERENCE 24

ANALYTICAL RESULTS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
BUREAU OF HAZARDOUS WASTE

Report Date: 1/9/86

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		Halfway Brook W-585-007-01	W.Glens F. Upgrade W-585-008-01	W.G.F. Downgrade W-585-008-02
Polychlorinated Biphenyls	µg/l as Aroclor 1016	<0.2	1.3	100?
	µg/l as Aroclor 1221	<0.5	<1	<100
	µg/l as Aroclor 1232	<0.5	<1	<100
	µg/l as Aroclor 1242	<0.2	<1	<100
	µg/l as Aroclor 1248	<0.2	<1	<100
	µg/l as Aroclor 1254	<0.5	<0.5	<1
	µg/l as Aroclor 1260	<0.5	<0.5	<1
	µg/l as Aroclor 1262	<0.5	<0.5	<1
	µg/l as Aroclor 1268	<0.5	<0.5	<1

ADDITIONAL SAMPLE INFORMATION

Sample Date	12/17-18/85	12/17-18/85	12/17-18/85
Extraction Date	12/20/85	12/20/85	12/20/85
Analysis Date	1/1/86	1/1/86	1/1-3/86

FOR RECRA ENVIRONMENTAL LABORATORIES Frederick Bogle

DATE 1/9/86

I.D. #85-1563

NEW YORK STATE DEPARTMENT OF HEALTH

PAGE 1 RESULTS OF EXAMINATION T

SAMPLE ID: 51693 SAMPLE RECEIVED:85/06/05/ CHARGE: 6.50
PROGRAM: 515:SPECIAL SAMPLES FOR DEC REGION 5
SOURCE ID: DRAINAGE BASIN:11 GAZETTEER CODE:5657
POLITICAL SUBDIVISION:QUEENSBURY COUNTY:WARREN
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: WEST GLENS FALLS TOWN OF QUEENSBURY
DESCRIPTION:W.GLENS FALLS PCB SITE DOWNGRADIENT WELLS E1 + SE1
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PCB*:PCB'S IN WATER (DES 310-2)
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 85/06/04 11:00 DATE PRINTED:85/06/19

	PARAMETER	RESULT
T39809	PCB,AROCLOR 1221	< 3. MCG/L
T38009	PCB,AROCLOR 1016/1242	92. MCG/L
T38109	PCB,AROCLOR 1254	< 3. MCG/L
T41609	PCB,AROCLOR 1260	< 3. MCG/L
T52209	PCB,AROCLOR 1248	<.3. MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(1), PU(1), LPHE(0), FED(0), INFO-R(0), INFO-L(0)

N.Y.S.DEPT.OF ENVIRONMENTAL CONSERVATION
REGION 5
RAY BROOK,N.Y. 12977

SUBMITTED BY:S CONNOR

0310- NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION

SAMPLE ID: 51695 SAMPLE RECEIVED:85/06/05/ CHARGE: 6.50
PROGRAM: 515:SPECIAL SAMPLES FOR DEC REGION 5
SOURCE ID: DRAINAGE BASIN:11 GAZETTEER CODE:5657
POLITICAL SUBDIVISION:QUEENSBURY COUNTY:WARREN
LATITUDE: LONGITUDE: 7 DIRECTION:
LOCATION: WEST GLENS FALLS TOWN OF QUEENSBURY
DESCRIPTION:W.GLENS FALLS PCB SITE UPGRADIENT WELLS N1 + W1
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PCBW:PCBS IN WATER (DFS 310-2)
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 85/06/04 10:00 DATE PRINTED:85/06/19

PARAMETER	RESULT
T39809 PCB,AROCLOR 1221	< 0.5 MCG/L
T39809 PCB,AROCLOR 1016/1242	18. MCG/L
T39809 PCB,AROCLOR 1254	< 0.5 MCG/L
T41609 PCB,AROCLOR 1260	< 0.5 MCG/L
T52209 PCB,AROCLOR 1248	< 0.5 MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(1), RO(1), LPHE(0), FED(0), INFO-R(0), INFO-L(0)

N.Y.S.DEPT.OF ENVIRONMENTAL CONSERVATION
REGION 5
BAY BROOK,N.Y. 12977 SUBMITTED BY:S CONNOR

0880 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARC

PAGE 1 RESULTS OF EXAMINATION

SAMPLE ID: 52033 SAMPLE RECEIVED: 85/07/02/
PROGRAM: 6305: DIV. SOLID & HAZARDOUS WASTE - DEC REGION 5
SOURCE ID: DRAINAGE BASIN: 11 GAZETTEER CODE: 5657
POLITICAL SUBDIVISION: QUEENSBURY COUNTY: WARREN
LATITUDE: . . LONGITUDE: . Z DIRECTION:
LOCATION: WEST GLENS FALLS TOWN OF QUEENSBURY
DESCRIPTION: W. GLENS FALLS PCB SITE UPGRADIENT WELLS W1 &-W1
REPORTING LAB: TOX: LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PCBW: PCB'S IN WATER
SAMPLE TYPE: 250: GROUND WATER
TIME OF SAMPLING: 85/07/01 10:45 DATE PRINTED: 85/07/18

	PARAMETER	RESULT
T39809	PCB, AROCLOR 1221	< 0.5 MCG/L
T38009	PCB, AROCLOR 1016/1242	11. MCG/L
T38109	PCB, AROCLOR 1254	< 0.5 MCG/L
T41609	PCB, AROCLOR 1260	< 0.5 MCG/L
T52209	PCB, AROCLOR 1248	< 0.5 MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(1), RO(1), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. WILLIAM LAMY , P.E.
N.Y.S. DEPT. OF ENVIRONMENTAL CONSERVATION
P.O. BOX 220
WARRENSBURG, N.Y. 12885

SUBMITTED BY: CONNOR

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION

SAMPLE ID: 52035 SAMPLE RECEIVED: 85/07/02/
PROGRAM: 6305: DIV. SOLID & HAZARDOUS WASTE - DEC REGION 5
SOURCE ID: DRAINAGE BASIN: 11 GAZETTEER CODE: 565
POLITICAL SUBDIVISION: QUEENSBURY COUNTY: WARREN
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: WEST GLENS FALLS ~~TOWN OF QUEENSBURY~~
DESCRIPTION: W. GLENS FALLS PCB SITE DOWNGRADIENT WELLS E1 & SE1
REPORTING LAB: TOX: LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PCBW: PCB'S IN WATER
SAMPLE TYPE: 250: GROUND WATER
TIME OF SAMPLING: 85/07/01 11:30 DATE PRINTED: 85/07/18

	PARAMETER	RESULT	
T39809	PCB, AROCLOR 1221	< 5. MCG/L	
T38009	PCB, AROCLOR 1016/1242	73. MCG/L	SU
T38109	PCB, AROCLOR 1254	< 5. MCG/L	
T41609	PCB, AROCLOR 1260	< 5. MCG/L	
T52209	PCB, AROCLOR 1248	< 5. MCG/L	

**** END OF REPORT ****

COPIES SENT TO: CO(1), RO(1), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. WILLIAM LAMY , P.E.
N. Y. S. DEPT. OF ENVIRONMENTAL CONSERVATION
P. O. BOX 220
WARRENSBURG, N. Y. 12285

SUBMITTED BY: CONNOR

PAGE 1 RESULTS OF EXAMINATION

SAMPLE ID: 93044 SAMPLE RECEIVED: 93/08/27 CHARGE:
PROGRAM: 6200: DIV. SOLID & HAZARDOUS WASTE - DEC REGION 5
SOURCE ID: DRAINAGE BASIN 11 CARTTEIER CODE: 54 Y
POLITICAL SUBDIVISION: QUEENSBURY COUNTY: WARREN
LATITUDE: LONGITUDE: DIRECTION:
LOCATION: WEST GLENS FALLS TOWN OF QUEENSBURY
DESCRIPTION: W. GLENS FALLS PCB SITE UPGRADIENT WELL WI
REPORTING LAB: TOX: LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PCBW: PCB'S IN WATER
SAMPLE TYPE: 250: GROUND WATER
TIME OF SAMPLING: 93/08/22 10:15 DATE PRINTED: 93/09/0

ANALYSIS: PCBW PCB'S IN WATER (DEC 310-2)

	PARAMETER	RESULT
T39809	PCB, AROCLOR 1221	< 0.05 MCG/L
T39009	PCB, AROCLOR 1016/1242	0.7 MCG/L
T39109	PCB, AROCLOR 1254	< 0.05 MCG/L
T41609	PCB, AROCLOR 1260	< 0.05 MCG/L
T52309	PCB, AROCLOR 1248	< 0.05 MCG/L

**** END OF REPORT ****

ENVIRONMENTAL CONSERVATION
OCT 1 1993
ENVIRONMENTAL QUALITY
WARRENSBURG

SEP 1 1 1993

COPIES SENT TO: CO(1), RO(1), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. WILLIAM LAMY , P.E.
N.Y.S.DEPT.OF ENVIRONMENTAL CONSERVATION
P.O. BOX 220
WARRENSBURG,N.Y. 12885

SUBMITTED BY: CONNOR

PAGE 1 RESULTS OF EXAMINATION

SAMPLE ID: 50060 SAMPLE RECEIVED: 85/09/23 CHARGE: 6.3
PROGRAM: ACCIDENT SOLID & HAZARDOUS WASTE - DEC REGION 5
SOURCE ID: DRAINAGE BASIN: 11 QUARTER CODE: FAS
POLITICAL SUBDIVISION: QUEENSBURY COUNTY: WARREN
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: WEST GLENS FALLS TOWN OF QUEENSBURY
DESCRIPTION: W. GLENS FALLS PCB SITE DOWNGRADIENT WELL #1
REPORTING LAB: TOX: LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PCBW: PCB'S IN WATER
SAMPLE TYPE: 250: GROUND WATER
TIME OF SAMPLING: 85/09/22 10:30 DATE PRINTED: 85/09/0

ANALYSIS: PCBW PCB'S IN WATER (DES 310-2)

	PARAMETER	RESULT
T39809	PCB, AROCLOR 1221	< 0.05 MCG/L
T38009	PCB, AROCLOR 1016/1242	0.6 MCG/L
T38109	PCB, AROCLOR 1254	< 0.05 MCG/L
T41609	PCB, AROCLOR 1260	< 0.05 MCG/L
T32209	PCB, AROCLOR 1248	< 0.05 MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(1), RO(1), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. WILLIAM LAMY , P.E.
N.Y.S. DEPT. OF ENVIRONMENTAL CONSERVATION
P.O. BOX 220
WARRENSBURG, N.Y. 12885

SUBMITTED BY: CONNOR

REFERENCE 25

DESIGN OF LAND TREATMENT SYSTEMS FOR INDUSTRIAL WASTES— Theory and Practice

by

MICHAEL RAY OVERCASH

Associate Professor
Department of Biological and Agricultural Engineering
Department of Chemical Engineering
North Carolina State University
Raleigh, North Carolina

Soil Systems, Inc.
Marietta, Georgia

DHIRAJ PAL

Post Doctorate Research Associate
Department of Biological and Argicultural Engineering
North Carolina State University
Raleigh, North Carolina

ANN ARBOR SCIENCE
PUBLISHERS INC
P.O. BOX 1425 • ANN ARBOR, MICH. 48106

Table 10.3 Composition of Soils[a] (Bowen 1966)

Element	Mean Dry Soil–Range (ppm)	Element	Mean Dry Soil–Range (ppm)
Ag	0.1 (0.01-5)	Mg	5,000 (600-6,000)
Al	71,000 (10,000-300,000)	Mn	850 (100-4,000)
As	6 (0.1-40)	Mo	2 (0.2-5)
B	10 (2-100)	N	1,000 (200-2,500)
Ba	500 (100-3,000)	Na	6,300 (750-7,500)
Be	6 (0.1-40)	Ni	40 (10-1,000)
Br	5 (1-10)	O	490,000
C	20,000	P	650
Ca	13,700 (7,000-500,000)	Pb	10 (2-200)
Cd	0.06 (0.01-0.7)	Ra	8×10^{-7} ($3-20 \times 10^{-7}$)
Ce	50	Rb	100 (20-600)
Cl	100	S	700 (30-900)
Co	8 (1-40)	Sb	(2-10?)
Cr	100 (5-3,000)	Sc	7 (10-25)
Cs	6 (0.3-25)	Se	0.2 (0.01-2)
Cu	20 (2-100)	Si	330,000 (250,000-350,000)
F	200 (30-300)	Sn	10 (2-200)
Fe	38,000 (7,000-550,000)	Sr	300 (50-1,000)
Ga	30 (0.4-300)	Th	5 (0.1-12)
Ge	1 (1-50)	Ti	5,000 (1,000-10,000)
Hf	6	Tl	0.1
Hg	0.03 (0.01-0.3)	U	1 (0.9-9)
I	5	V	100 (20-500)
K	14,000 (400-30,000)	Y	50 (25-250)
La	30 (1-5,000)	Zn	50 (10-300)
Li	30 (7-200)	Zr	300 (60-2,000)

[a]The figures refer to oven-dried soils. Soils near mineral deposits have been omitted in computing ranges. There are insufficient data for Ag, Be, Cd, Ce, Cs, Ge, Hf, La, Sb, Sn, Tl and U, and the values quoted for these elements may require revision.

silt fractions of soil are complex in terms of chemical structure and composition. Virtually all the chemical elements in wastewater are normal components of the solid fraction of every soil sample. However, elements in wastewater are usually in a soluble form or become soluble during biodegradation. By contrast, the minerals cited above are relatively insoluble and many play important roles in soil chemistry only in long-term soil formation. Jenne (1968) suggested that hydrous oxides of manganese and iron were very important in adsorption of heavy metals. The clay-sized fraction has a greater surface area of higher chemical activity than sand and silt particles. Several minerals in the clay fraction have a permanent negative charge for adsorption of exchangeable cations and a pH-dependent charge, which

Table 10.4 Typical Concentrations of Some Trace Metals in Source Materials Causing Metal Pollution of Soil and Air (List 1972)

Metal	Limestones (ppm)	Superphosphate (20%) (ppm)	Sewage sludge (%)	Coal (ppm)	Petroleum (ppm)	Urban Air ($\mu g/m^3$)
Antimony	0.2	0-100	ND	0.5-5	30-107	0.05-0.06
Arsenic	1	2.2-1199	0.009	2-25	0.05-1.1	0.005

REFERENCE 26

DRAFT

UNCONTROLLED HAZARDOUS WASTE SITE RANKING SYSTEM - A USERS MANUAL

DRAFT

10 June 1982
(errata included)

Distance	Greater than 150 feet	76 to 150 feet	21 to 75 feet	0 to 20 feet
Value	0	1	2	3

Net precipitation (precipitation minus evaporation) indicates the potential for leachate generation at the facility. Use net seasonal rainfall (seasonal rainfall minus seasonal evaporation) data if available. If net precipitation is not measured in the region in which the facility is located, calculate it by subtracting the mean annual lake evaporation for the region (obtained from Figure 4) from the normal annual precipitation for the region (obtained from Figure 5). EPA Regional Offices will have maps for areas outside the continental U.S. Assign a value as follows:

Net Precipitation	Less than -10 inches	-10 to +5 inches	+5 to +15 inches	Greater than +15 inches
Value	0	1	2	3

Permeability of unsaturated zone (or intervening geological formations) is an indicator of the speed at which a contaminant could migrate from a facility. Assign a value from Table 2.

Physical state refers to the state of the hazardous substances at the time of disposal, except that gases generated by the hazardous substances in a disposal area should be considered in rating this factor. Each of the hazardous substances being evaluated is assigned a value as follows:

Physical State	Assigned Value
Solid, consolidated or stabilized	0
Solid, unconsolidated or unstabilized	1
Powder or fine material	2
Liquid, sludge or gas	3

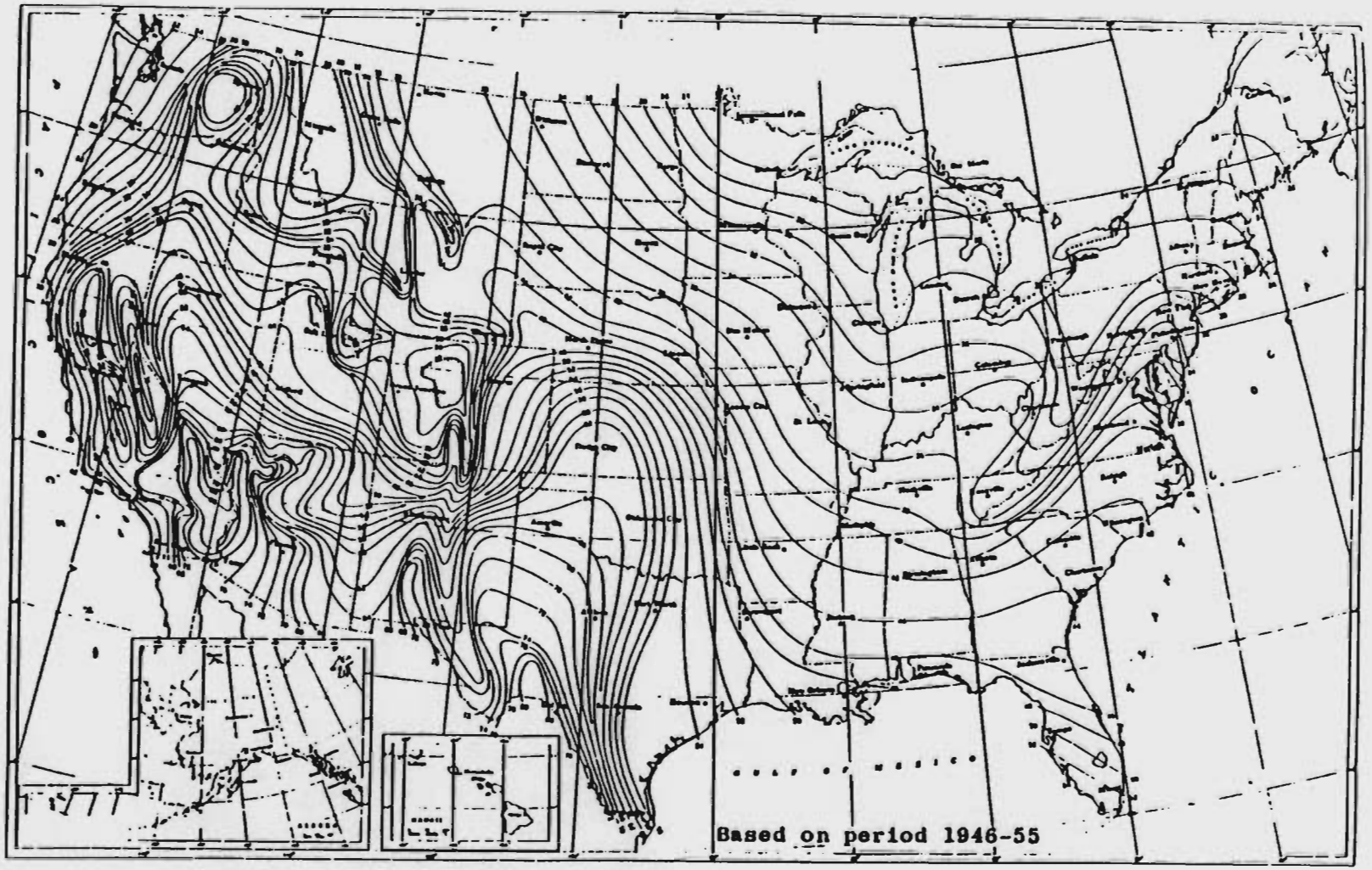


Figure 4

Mean Annual Lake Evaporation (In Inches)

Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.

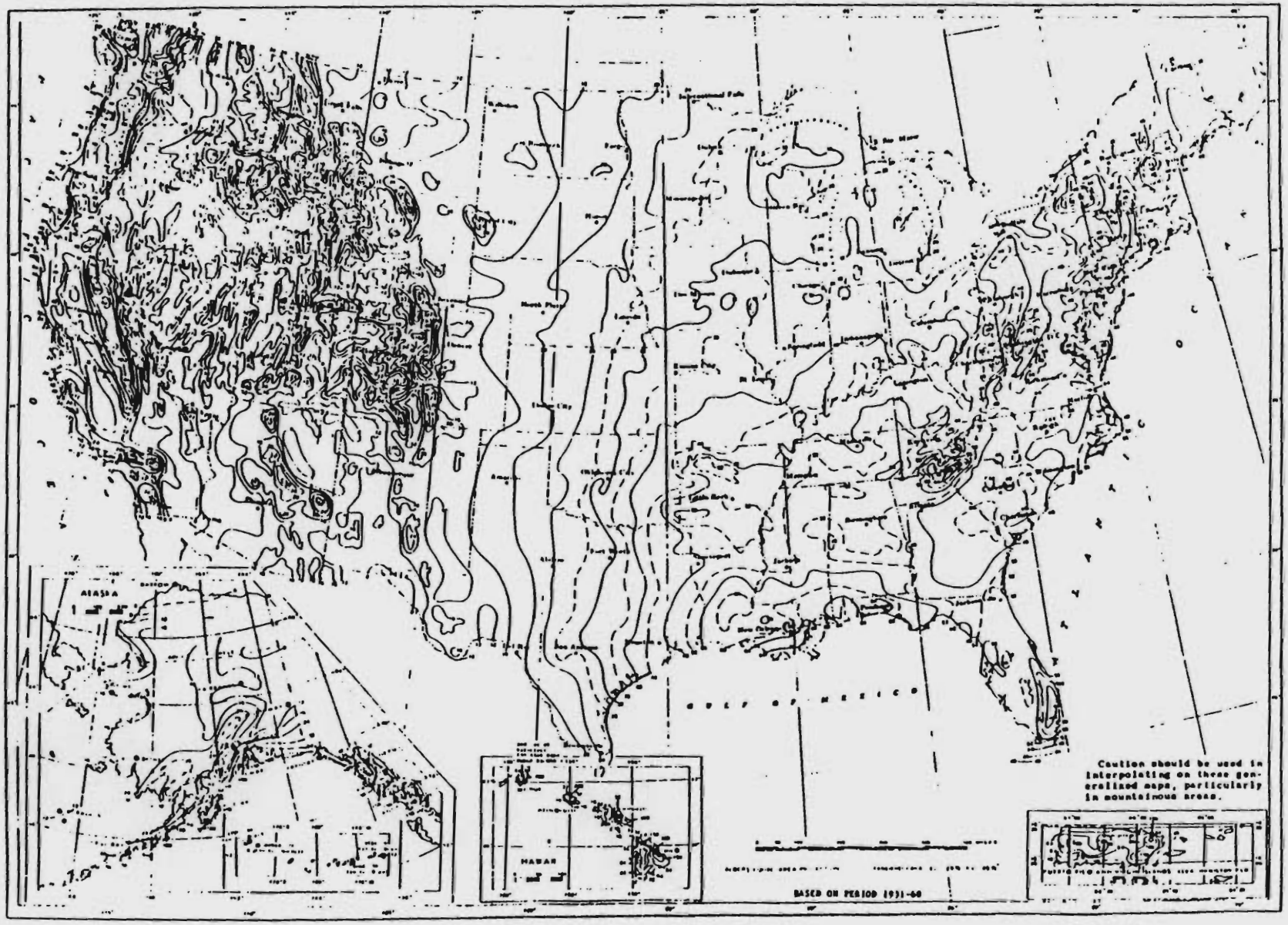


Figure 5

Normal Annual Total Precipitation (inches)

TABLE 3

CONTAINMENT VALUES FOR GROUND WATER ROUTE

Assign containment a value of 0 if: (1) all the hazardous substances at the facility are underlain by an essentially non permeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no ground water in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility using the following guidance.

A. Surface Impoundment

	Assigned Value
Sound run-on diversion structure, essentially non permeable liner (natural or artificial) compatible with the waste, and adequate leachate collection system	0
Essentially non permeable compatible liner with no leachate collection system; or inadequate freeboard	1
Potentially unsound run-on diversion structure; or moderately permeable compatible liner	2
Unsound run-on diversion structure; no liner; or incompatible liner	3

B. Containers

	Assigned Value
Containers sealed and in sound condition, adequate liner, and adequate leachate collection system	0
Containers sealed and in sound condition, no liner or moderately permeable liner	1
Containers leaking, moderately permeable liner	2
Containers leaking and no liner or incompatible liner	3

C. Piles

	Assigned Value
Piles uncovered and waste stabilized; or piles covered, waste unstabilized, and essentially non permeable liner	0
Piles uncovered, waste unstablized, moderately permeable liner, and leachate collection system	1
Piles uncovered, waste unstabilized, moderately permeable liner, and no leachate collection system	2
Piles uncovered, waste unstablized, and no liner	3

D. Landfill

	Assigned Value
Essentially non permeable liner, liner compatible with waste, and adequate leachate collection system	0
Essentially non permeable compatible liner, no leachate collection system, and landfill surface precludes ponding	1
Moderately permeable, compatible liner, and landfill surface precludes ponding	2
No liner or incompatible liner; moderately permeable compatible liner; landfill surface encourages ponding; no run-on control	3

REFERENCE NO. 14

EBASCO

July 21, 1995
ARCSII-95-076-50065

Certified Mail, Return Receipt

Mr. Joseph Sullivan
City of Glens Falls - Town Engineer
Department of Public Works
230 Dix Avenue
Glens Falls, NY 12801

SUBJECT: ARCS II PROGRAM - EPA CONTRACT NO. 68-W8-0110
WORK ASSIGNMENT NO. 076-2JZZ
GLENS FALLS LANDFILL
SITE ACCESS REQUEST

Dear Mr. Sullivan:

This letter is an official request by Ebasco Services, Inc., under authority from the United States Environmental Protection Agency (EPA), to conduct a site reconnaissance and, if necessary, a site inspection at the Glens Falls Landfill Site. The site is included on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) under the name Glens Falls Landfill Site, EPA I.D. Number NYD980506620.

As discussed during our telephone conversation of July 6, 1995, I am sending you this request to permit Ebasco personnel to access the site. The purpose is to conduct a site reconnaissance. Attached is an access agreement for your review and signature. With your approval, an appropriate time can be arranged for the site reconnaissance. We would like to conduct the site reconnaissance between August 7 and 18, 1995. Also attached is a Memorandum of Confidential Treatment for Certain Information for your review.

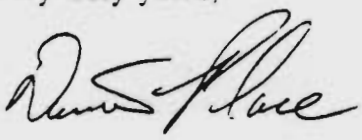
The site reconnaissance will include a walk through of the property and/or facility, a review of records, assessment of potential sample locations, and screening the site for health and safety considerations. If deemed necessary, a site inspection will follow and may include the collection of water, soil, and/or sediment samples. Specific details of the site inspection will be determined after the site reconnaissance is completed, and if a site inspection is deemed necessary. Photographs will be taken throughout the reconnaissance and inspection for evidentiary purposes. Air monitoring instruments will be used continuously for health and safety purposes. Personal protective clothing and equipment will be worn as per Occupational Safety and Health Administration (OSHA) regulations. If requested, splits of all samples collected during the inspection can be made. Please inform me if you want split samples, and arrangements will be made accordingly.

The site reconnaissance and site inspection are to be preformed in accordance with direction of the U.S. Environmental Protection Agency under contract 68-W8-0110. The U.S. EPA has provided Ebasco Services Incorporated (Ebasco) with a list of properties throughout the region which are to undergo similar inspections.

Information regarding the EPA-Ebasco contract may be obtained by contacting Ms. Catherine Moyik, U.S. EPA, Region II, 26 Federal Plaza, New York, New York, 10278.

Please return the signed access agreement to my attention at 8 Peach Tree Hill Road, Livingston, NJ 07039. If you have any questions concerning the scheduling of these efforts or other aspects of these activities, please contact me at (201) 535-2512. If you have any questions concerning the authority of Ebasco under this EPA contract, please contact Mr. Edward Aguado of Ebasco at (201) 842-7353, or Ms. Catherine Moyik of the U.S. EPA at (212) 264-9213.

Very truly yours,



Dennis Place, C.P.G.

cc: E. Aguado
File

EBASCO

ACCESS AGREEMENT

Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERLA) authorizes the United States Environmental Protection Agency (EPA) to respond to the release or threat of release of hazardous substances, pollutants and contaminants into the environment. This authority includes investigations, tests and other information gathering necessary to determine the existence, nature and source of such material. Ebasco Services Incorporated (Ebasco) is under contract with the EPA to carry out certain tasks and responsibilities pursuant to CERCLA, 42 U.S.C 9601, et seq., and the Superfund Amendment and Reauthorization Act of 1986 (SARA).

The owner of Glen Falls Landfill located at Lazurne Road, Queensbury, Warren County, New York shall permit Ebasco, pursuant to its contract with EPA, to have access to this property for the purpose of conducting a site reconnaissance and a potential sampling visit.

The EPA and Ebasco have agreed that Ebasco shall maintain comprehensive general liability insurance in the amount of $1 million for bodily injury, death or loss of or damage to property of third persons arising from activities of Ebasco; workmen's compensation and occupational disease insurance; and employer's liability insurance; at all times that Ebasco is conducting activities on the owner's property, pursuant to its contract with EPA. In addition, EPA and Ebasco represent that the EPA is obligated under certain limited circumstances set out in its contract with Ebasco to pay third party liability claims that are not covered by Ebasco's insurance.

for Dev R. Sachdev, Ph.D., P.E.
ARCS II Program Manager
Ebasco Services Incorporated

Mr. Joseph Sullivan
Town Engineer
City of Glens Falls

7-17-95
Date

Date

EBASCO

MEMORANDUM OF CONFIDENTIAL TREATMENT OF CERTAIN INFORMATION

1. Pursuant to the provisions of Section 104(e) (2) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. 9604, as amended by the Superfund Amendment and Reauthorization Act ("SARA"), Glen Falls Landfill, Lazurne Road, Queensbury, Warren County, New York (hereinafter "the site") will provide, or give access to, information requested by the Environmental Protection Agency ("EPA") through its authorized representative Ebasco Services Incorporated (hereinafter "the contractor") for the contractor's use, and that of its employees and/or its subcontractors, on behalf of EPA in the course of carrying out its responsibilities pursuant to Contract No. 68-W8-0110 with EPA. The information requested may be either documentary (e.g., records, reports, or charts) or nondocumentary (e.g., oral communications, taking of photographs, or visual observations). The contractor recognizes that the site may consider the information so provided, or some part of it, to be confidential within the meaning of Section 104(e) (2) to CERCLA, 42 U.S.C. 9604(e) and SARA 104(n) (7). For information that is deemed a trade secret or proprietary, a person may assert a claim of confidentiality under the procedures established in Part 2 of Title 40 of the Code of Federal Regulations (40 CFR Part 2) by noting such claim on documentary material provided to the contractor. When submitting the information to EPA, the Contractor will note the Site's confidentiality claims by marking each document containing information that the Site claims is confidential 'CLAIMED TO BE CONFIDENTIAL INFORMATION BY the Site." Moreover, the site may notify the contractor that it considers the nondocumentary information provided to the contractor to be confidential, and the contractor will note said claim of confidentiality in any reports or documents submitted to EPA which utilize such nondocumentary information. Any material or information claimed as confidential will be treated by the contractor as confidential in accordance with its contract and will be treated by EPA in accordance with the provisions of 40 CFR Part 2. Any material or information for which a claim of confidentiality is not made may be made available to the public by EPA without notice. As used in this memorandum, the term "information requested by the Environmental Protection Agency" includes not only information which EPA has specifically requested the contractor to obtain from the Site but also any other information to which the contractor is exposed in the course of obtaining or otherwise dealing with such specifically requested information.

2. The provisions in the contractor's contract with EPA concerning the use [illegible] confidential information are included herein for the benefit of, and shall be enforceable by, both EPA and the site.

   The provisions of Contract No. 68-W8-0110 between EPA and the contractor provide:

   CONFIDENTIALITY OF INFORMATION

   The Contracting Officer may, from time to time, identify elsewhere in this contract any confidential data that the Government may furnish to the Contractor or that the Contractor is expected to generate.

   The contractor shall not disclose any confidential information obtained in the performance of this contract. Any presentation of any statistical or analytical material or reports based on information obtained from the studies covered by this contract will be subject to review by the Government's Project Officer before publication or dissemination in order to determine whether safeguards of privacy have been observed.

3. Any subcontractor who will have access to the information is subject to the restrictions set forth in this Memorandum.

4. It is intended that this Memorandum be consistent with and not exceed the provisions of 40 CFR Part 2 and the provisions of Contract No. 68-W8-0110. Nothing in the Memorandum relieves the contractor of any liability it may independently have to the site as a matter of statutory or common law liability for injury to the site arising from the contractor's release of information in a manner which exceeds its authority under 40 CFR Part 2 and its contract with EPA.

for Dev R. Sachdev, PhD, PE
ARCS II Program Manager
Ebasco Services Incorporated

7/17/95
Date

[redacted]

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Joseph Sullivan
City of Glens Falls-Town Engineer
Department of Public Works
230 Dix Avenue
Glens Falls, NY 12801

4a. Article Number
Z 751 185 089

4b. Service Type
☐ Registered ☐ Insured
☐ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
AUG 8 1995

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
Joseph Sullivan

PS Form 3811, December 1991 *U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

REFERENCE NO. 15

14/15 10f3

Department of Environmental Conservation

Division of Hazardous Waste Remediation

Inactive Hazardous Waste Disposal Sites in New York State

Site List by Counties; Volume 5

- Clinton
- Essex
- Franklin
- Fulton
- Hamilton
- Saratoga
- Warren
- Washington

April 1993

A Joint Report
of the
New York State Departments of Environmental Conservation and Health

New York State Department of Environmental Conservation
MARIO M. CUOMO, *Governor* THOMAS C. JORLING, *Commissioner*

DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 2 REGION: 5 SITE CODE: 557003
EPA ID: NYD980506620

NAME OF SITE : Glens Falls Landfill
STREET ADDRESS: Luzerne Road
TOWN/CITY: COUNTY: ZIP:
Queensbury Warren 12801

SITE TYPE: Open Dump- Structure- Lagoon- Landfill-X Treatment Pond-
ESTIMATED SIZE: 15 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: City of Glens Falls
CURRENT OWNER ADDRESS.: City Hall, 42 Ridge St., Glens Falls, NY
OWNER(S) DURING USE...: City of Glens Falls
OPERATOR DURING USE...: City of Glens Falls
OPERATOR ADDRESS.....: City Hall, 42 Ridge St., Glens Falls, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1961 To 1977

SITE DESCRIPTION:
A municipal landfill operated by the City of Glens Falls for approximately 16 years. The landfill received primarily municipal waste, but is alleged to have received some PCB capacitors from private haulers. The quantity of hazardous wastes and other types of wastes disposed on site is not known.

Phase I and II Investigations have been completed. Phase II sampling results showed PCBs (aroclor 1016) at 62 ppb in the downgradient monitoring well. Additional investigation is needed.

HAZARDOUS WASTE DISPOSED:	Confirmed-X TYPE	Suspected-X QUANTITY (units)
Confirmed:	Ink sludge (D001)	5 tons
Suspected:	PCBs (B007)	unknown

SITE CODE: 557003

IALYTICAL DATA AVAILABLE:
r- Surface Water- Groundwater-X Soil-X Sediment-

NTRAVENTION OF STANDARDS:
oundwater-X Drinking Water- Surface Water- Air-

GAL ACTION:

PE..: State- Federal-
ATUS: Negotiation in Progress- Order Signed-

MEDIAL ACTION:

oposed- Under design- In Progress- Completed-
TURE OF ACTION:

OTECHNICAL INFORMATION:
IL TYPE: Sand
OUNDWATER DEPTH: Approx. 15 feet

SESSMENT OF ENVIRONMENTAL PROBLEMS:

oundwater contamination has been confirmed. Further investigation is
ded to determine the extent of contamination.

ESSMENT OF HEALTH PROBLEMS:

site is not fenced and there are numerous active dirt bike trails
site. The adequacy of the present cap is suspect. trespass may
vide a route of exposure to contaminants by way of inhalation or
ect contact. Access to this site needs to be restricted and
orts are under way to limit these exposures. There is a stream and
erous residences near the site. All sampling of this stream and 2
idences on private wells have been negative. All other homes and
inesses in the area are provided with public water.

Ref 15
4 of 5

DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 2 REGION: 5 SITE CODE: 557010
EPA ID: NYD982531923

NAME OF SITE : Luzerne Road Site
STREET ADDRESS: Luzerne Road

TOWN/CITY:	COUNTY:	ZIP:
Queensbury	Warren	12801

SITE TYPE: Open Dump- X Structure- Lagoon- Landfill-X Treatment Pond-
ESTIMATED SIZE: 9 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: ** Multi - Owner Site **
CURRENT OWNER ADDRESS.: * * * * *
OWNER(S) DURING USE...: Arnold Alkes
OPERATOR DURING USE...: ** Multi - Site Operators **
OPERATOR ADDRESS.....: * * * * *
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From about 1958 To about 1968

SITE DESCRIPTION:
The site is adjacent to the Glens Falls Landfill site, and consists of the rear 300 foot portion of a parcel identified as 53 Luzerne Road, and the former West Glens Falls PCB Disposal Site, (site No. 557001). The rear portion of 53 Luzerne Road is a former junkyard where capacitors containing PCBs were scrapped and buried. The capacitors and some contaminated soil (13,000 cubic yards) were removed from the site in 1979 and secured in the designed PCB Disposal cell. A soil sample taken at the former junkyard site during the Phase II investigation conducted at the Glens Falls Landfill, revealed PCB contamination at 160 ppm. The designed PCB Disposal cell is a chemical waste landfill constructed pursuant to EPA rules and regulations under an emergency declaration by the Commissioner of the Department of Health. The cell has five monitoring wells and a leachate collection system. A leak detection system was also installed to assure that leachate did not leak from the facility. Impervious clay was brought in and was used as a liner to help prevent contaminants from leaking out. A new synthetic membrane cap was installed in 1986. Monthly water sampling and inspections are conducted by DEC staff.

Some contaminated soil remains on the junkyard site. In 1980 an organic cap was placed over the site, including topsoil and a vegetative cover. Additional investigation is needed.

HAZARDOUS WASTE DISPOSED: TYPE	Confirmed-X	Suspected- QUANTITY (units)
PCBs (B007)		unknown

Ref 15
5 of 5

SITE CODE: 557010

ANALYTICAL DATA AVAILABLE:
Air- Surface Water- Groundwater-X Soil-X Sediment-

CONTRAVENTION OF STANDARDS:
Groundwater-X Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: State- Federal-
STATUS: Negotiation in Progress- Order Signed-

REMEDIAL ACTION:

Proposed- Under design- In Progress- Completed-X
NATURE OF ACTION: Soil removal-PCB secure LF created

GEOTECHNICAL INFORMATION:
SOIL TYPE: sand
GROUNDWATER DEPTH: Approximately 20 feet

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Groundwater contamination by PCBs is possible.

ASSESSMENT OF HEALTH PROBLEMS:

The remaining PCB contaminated soils are covered by a one foot thick organic rich cap to immobilize the PCBs. Top soil and a vegetative cover will prevent any direct contact or migration of fugitive dust or runoff. Monitoring well samples have shown PCBs in ground water, however, all area homes are served by public water.

REFERENCE NO. 16

EBASCO

To: **ARCS II Contract File # 8310-0076-0000-50065**

From: **Dennis Place**

Date: **September 20, 1995**

Subject: **Off-Site Reconnaissance and Interviews, Glens Falls Landfill Site**

On Thursday, September 14, 1995, Ebasco employee Dennis Place met with William Shaw of the New York State Department of Environmental Conservation (NYSDEC) in Albany, NY, to conduct a review of the contents of the NYSDEC file for the Glens Falls Landfill Site, NYSDEC Site # 550007. The documents reviewed which were not provided by the United States Environmental Protection Agency (USEPA) to Ebasco, pertained only to the reclassification of the site from a Class 3 hazardous waste site, to a Class 2 in 1987. The site is presently a Class 2 hazardous waste site. Copies of these documents were obtained.

In addition, Jim Beach of NYSDEC Water Quality Division in Albany was interviewed. The stream classifications for both the Halfway Creek and Hudson River 15 mile pathways has remained the same since the 1983 NYSDEC Compilation document. The Lake Champlain Basin is presently in the review process of proposed reclassification of selected surface water bodies, but at the time of the interview, the proposed classifications had not been adopted.

Dennis Place then proceeded to the Glens Falls area and performed an off-site reconnaissance of the Glens Falls Landfill site. A written request for approval of access to perform an on-site site reconnaissance from Ebasco to the Town of Glens Falls Engineer, Mr. Thomas Sullivan, had been received by the Glens Falls Engineering Department on July 7, 1995. Ebasco did not receive any response to the written request for access or to telephone messages requesting to speak to Mr. Thomas Sullivan pertaining to Ebasco's request prior to the off-site reconnaissance.

The location of the site, shown in Figure 1, was identified using the USGS 7.5-Minute Series, Glens Falls, NY Quadrangle. A site sketch, provided in the Recra Research, Inc. (Recra) Phase II summary report (Ref 13, p. 5 of 320), was used to further delineate the site location.

On September 14, 1995, Ebasco viewed the site from Sherman Avenue, Northway Lane, Veterans Road, Lazurne Road, and Interstate Route 87. The visible parts of the site from these locations, appeared wooded with well established tree growth. No evidence of remediation activities since the 1977 "beautification" project undertaken by the Glens Falls Rotary Club were apparent.

Three residences located on Northway Lane, located northwest of the site, were observed. Residences also were located on the north side of Sherman Avenue, on the east side of Veterans Road, and on the south side of Lazurne Road. On the east side of the site, the northern end of the PCB secure landfill was visible. The area west and north of the intersection of Veterans Road and Lazurne Road contained a baseball diamond and an open field.

From Lazurne Road, a sign advertising the availability for lease of the building and property formerly occupied by AMG Industries, was visible. In addition, the Glens Falls waste transfer station was observed to be still located in the same area indicated by the Recra Reasearch, Inc. Phase I and Phase II reports. Monitoring wells MW-101-1 and MW-101-2 also were visible. Both wells appeared to be locked and their steel protective casing stickups intact. Well-worn trails, possibly made by off-road recreational vehicles, were evident southwest of the landfill on the north side of Lazurne Road. The drainage ditch noted by Recra in their Phase I report as paralleling Route 87 and acting as a collection point and PPE for surface water runoff, was evident. At the time of the Ebasco reconnaissance of the Glens Falls Landfill site, the ditch was dry.

During the inspection of the area surrounding the site, no schools or day care centers were observed within 200 feet of the site. The nearest school found was the City of Glens Falls School located on the north side of Sherman Avenue approximately 1 mile east of the site.

On September 15, 1995 Dennis Place interviewed Glen Brusco of New York State Department of Health (NYSDOH) regional office in Glens Falls. Mr. Brusco formerly worked with the Hazardous Waste Site Division of NYSDEC and was familiar with the three superfund sites located in the Town of Queensbury. Mr. Brusco confirmed that no additional remedial action has been performed at the Glens Falls Landfill site since the alternative "beautification" project proposed in 1979. Mr. Brusco also was unaware of any further sampling or investigations performed at the site since the completion of the Phase II investigation.

Mr. Brusco noted the locations of community water supplies in the area on USGS topographic Quad maps provided by Ebasco and provided database files he had available. The community water supply intakes within four miles of the site and along the 15 mile surface water pathways from the site were discussed. In addition, Mr. Brusco indicated that Halfway Creek may be used for irrigation purposes along the 15 mile surface water pathway. Mr. Brusco also noted that Paper Mill firms do obtain process water from the Hudson River in the area. Copies of the documents and location information were obtained.

On September 15, 1995, Ebasco performed a file search at the Region 5, Municipal Waste Division of the NYSDEC located in Warrensburg, NY. Copies of original historical documents pertaining to the site were obtained. In addition, interviews with Jean Travers, a resident on Northway Lane located northwest of the site, and Tamary Robert of the Town of Queensbury Water Department were performed to ascertain if local residents were serviced by town water supply. Jean Favers indicated that the three residences on Northway Lane presently obtain their drinking water from the Town of Queensbury Water Department. A map reviewed by Ebasco at the Town of Queensbury Water Department office, indicated that all of the residences in the area surrounding the site have access to town water. The area further to the northeast, south, and east of the site, is serviced by the City of Glens Falls as per Glen Brusco of NYSDOH.

GLENS FALL LANDFILL
SEPTEMBER 14, 1995



VIEW OF NORTHEAST END OF PCB SECURE LANDFILL FROM VETERANS ROAD



VIEW OF TRANSFER STATION, SOUTH EDGE OF FORMER LANDFILL, AND MW-102 FROM LAZURNE ROAD

GLENS FALLS LANDFILL
SEPTEMBER 14, 1995



VIEW OF DRAINAGE DITCH (PPE) FROM LAZURNE ROAD



VIEW OF WEST EDGE OF FORMER LANDFILL FROM INTERSTATE ROUTE 87

(1)

9/14/15

Glens Falls Landfill

10:44 D Place at NYDEC in Albany, meet with William Short of Hazardous Waste Division to perform file search and copy materials.

11:55 DP meets with Jim Bank of Water Quality Division Halfway Creek and Champlain Barge Canal same classification as in 1/83. Proposing changes for Champlain Basin, but Halfway creek will still be FWA.

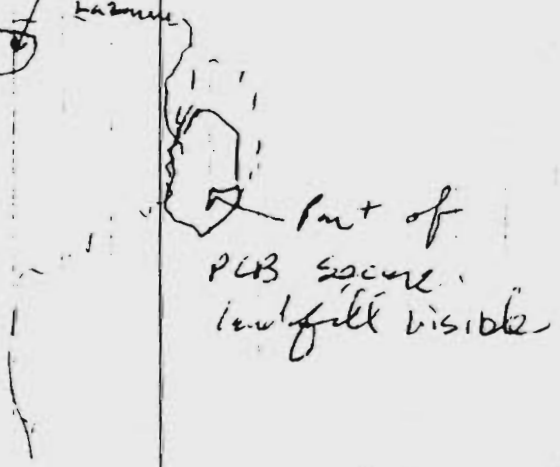
13:00 D. Place drives to Glens falls Area to locate site.

14:05 In Glens Falls site not readily visible from Rt 87 shrouded over trees with No Trespassing signs. Northway Lane - 43 Residences Veterans - Wooded

DJP 9/14/15

(2)

with signs until prior to intersection w/ Lazurne



on Lazurne site still wooded AMF Industries is for sale, Waste Transfer station present. No schools or day care along Route.

DP drives Rt 87 north again between EXIT 18 and 19. Site appears as topographic high - wooded - drainage ditch along Rt 87 present as

DJP 9/14/15

(3)

noted in Recra reports.
NOTE MW-101-2 - st. drain is visible from bazooka.

15:20 DP Lane calls office & purchases disposable camera and returns route taking photos.
Photos 1-5 ⇒ residences on NW end of block (on Northway lane)
Photos 6, 7, 8, 9 - open field area on corner of Vermont and Lagoon (includes portion of secure PCB Landfill)
Photos 10, 11 & 12 From AM6 lot includes photo of MW-101-1 appears in good shape & locked (From bazooka)
13 - 16 transfer station
MW-101-2 - storm drain.
Photos 17, 18, 19, 20 ⇒ site from Rt 67
Note From Rt 67 it appears NE area contains dirt bike tracks.

16:35 DP completes route,

Dennis Place
9/14/95

7/15/95

(4)

8:05 D. Place meets with Glen Bruce of NY Dept of Health
Glens Falls is at system of upland resovoirs
Kenyon, Willkie & Butler. Halfway Brook Resovoir ⇒ Town of Queensbury
Hudson Falls (village) ⇒ surface impoundment and some wells
Town of Moreau ⇒ from Hudson
Town of Fort Edward ⇒ resovoir (marked on map) and wells.
Glens Falls Country Club has own water supply (well). Fort Ann ⇒ wells
GB - I do not Known (only PCB secure Landfill) if there has been any more water sampling at GF Landfill
Nothing has been done to Cap since beautification Programs.
GB - Not any intake out of Halfway Brook down stream from site.
DSP 9/15/95

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(5)

On the Hudson River (15 miles
closest water intake
for drinking water is
Waterford Watertown. Paper mill
take water out for
process water.
Town of Moreau may
be in water intake.
GB does not know
if residences NW
of site are on
Town water or still
on wells.
GB provides DP with
computer printout of
town water supplies in
area.

8:50 DP leaves office, drives
to Sherman Ave, Glens
Falls City School on
north side of Sherman
from Quade to Clayton
Street.

9:00 DP speaks with Jean
Travers at 15 Northway
Lane. Their house and

DP 7/15/95

(6)

other houses are on public
water supply from the
Town of Queensbury
(Residences NW of site)

9:50 DP @ NYSDEC
regional office in Warrensburg
to meet Huguet Farayni's.
He is not available, but
Tony Bezio will meet
with DP.
DP reviews file and
requests copies of
material selected.

11:25 DP at Town of
Queensbury Water Department
DP speaks with Tammy
Robert and views map
of water distribution.
Site area supplied
water including Northway
Lane. TR does not know
if there are still residences
using well water in the
area.

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REFERENCE NO. 17

GLEN FALLS LANDFILL

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RENSSELAER												
SCHAGHTICOKE	SCHAGHTICOKE	S	1994	B	SOLIDAGO PTARMICOIDES UPLAND GOLDENROD	VASCULAR PLANT	U		G5 S2		4207385	
SARATOGA												
BALLSTON	ROUND LAKE 425801 735031	S	1987	C	ARDEA HERODIAS GREAT BLUE HERON	BIRD	P		G5 S5		4207387	5
BALLSTON	ROUND LAKE 425652 735119	M	1970	H	WARM WATER FISH CONCENTRATION AREA WARM WATER FISH CONCENTRATION AREA	OTHER	U				4207387	6
CLIFTON PARK	ROUND LAKE 425403 734656	S	1989	E	ATRYTONOPSIS HIANNA DUSTED SKIPPER	BUTTERFLY or SKIPPER	U		G4 S3		4207387	2
CLIFTON PARK	ROUND LAKE 425428 734709	S	1989	E	ATRYTONOPSIS HIANNA DUSTED SKIPPER	BUTTERFLY or SKIPPER	U		G4 S3		4207387	1
CLIFTON PARK	ROUND LAKE 425403 734656	S	1989	E	INCISALIA IRUS FROSTED ELFIN	BUTTERFLY or SKIPPER	U		G4 S1S3		4207387	2
CLIFTON PARK	ROUND LAKE 425428 734709	S	1990	CD	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4207387	1
CLIFTON PARK	ROUND LAKE 425403 734656	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4207387	2
CLIFTON PARK	ROUND LAKE 425440 734940	M		H	LITHOSPERMUM CANESCENS HOARY PUCCOON	VASCULAR PLANT	U		G5 SX		4	
HADLEY	CONKLINGVILLE 431833 735447	S	1992	B	HALIAEETUS LEUCOCEPHALUS BALD EAGLE	BIRD	E	LELT	G4 S1	ESU		

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HALF MOON CLIFTON PARK	ROUND LAKE 425334 734618	S		H	COLD WATER FISH SPAWNING AREA COLD WATER FISH SPAWNING AREA	OTHER	U				4207387	7
MALTA	ROUND LAKE 425558 734632	M	1934	H	POLYGONUM SETACEUM VAR INTERJECTUM SWAMP SMARTWEED	VASCULAR PLANT	U		G5T4 S1S2		4207387	4
MOREAU	GANSEVOORT 431433 734056	S	1979	F	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	11
NORTHUMBERLAND	FORT MILLER 431000 733556	S	1991	E	ASIO FLAMMEUS SHORT-EARED OWL	BIRD	P SC		G5 S2	ESU	4307325	4
NORTHUMBERLAND	GANSEVOORT 431003 733929	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	4
NORTHUMBERLAND	GANSEVOORT 430847 733951	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	13
NORTHUMBERLAND	GANSEVOORT 430824 733846	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	17
NORTHUMBERLAND	GANSEVOORT 430919 734007	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	21
NORTHUMBERLAND	GANSEVOORT 430857 733911	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	22
NORTHUMBERLAND	GANSEVOORT 431137 734027	S	1993	C	LYGODIUM PALMATUM CLIMBING FERN	VASCULAR PLANT	E		G4 S1			
SARATOGA	SCHUYLERVILLE 430327 733524	M	1932	H	ARMORACIA LACUSTRIS LAKE-CRESS	VASCULAR PLANT	R	3C	G4? S2S3			

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SARATOGA	SCHUYLERVILLE 430148 733535	M	1934	H	LIPOCARPHA MICRANTHA DWARF BULLRUSH	VASCULAR PLANT	R		G4 S1		4307315	3
WILTON	GANSEVOORT 430754 734222	S	1989	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	2
WILTON	GANSEVOORT 430907 734142	S	1990	B	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	3
WILTON	GANSEVOORT 430844 734042	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	5
WILTON	GANSEVOORT 430837 734234	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	14
WILTON NORTHUMBERLAND	GANSEVOORT 430812 734039	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	15
WILTON	GANSEVOORT 430753 734056	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	18
WILTON	GANSEVOORT 430754 734056	S	1990	CD	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	19
WILTON	GANSEVOORT 430808 734330	S	1990	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307326	20
WILTON	GANSEVOORT 431154 734433	M	1929	H	CYNOGLOSSUM VIRGINIANUM VAR BOREALE NORTHERN WILD COMFREY	VASCULAR PLANT	T		G5T3? S1		4	
WILTON	GANSEVOORT 430756 734223	S	1988	C?	CYPERUS HOUGHTONII HOUGHTON UMBRELLA-SEDGE	VASCULAR PLANT	R		G3G4 S3		4	

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WARREN											
CITY OF GLENS FALLS	GLENS FALLS 431809 733858	M	1892	H	CYNOGLOSSUM VIRGINIANUM VAR BOREALE NORTHERN WILD COMFREY	VASCULAR PLANT	T		G5T3? S1		4307336 6
QUEENSBURY	GLENS FALLS 432124 734126	S	1986	B	RED MAPLE-TAMARACK PEAT SWAMP RED MAPLE-TAMARACK PEAT SWAMP	COMMUNITY	U		G3G4 S2S3		4307336 11
QUEENSBURY	GLENS FALLS 432124 734126	S	1989	A	RICH GRAMINOID FEN RICH GRAMINOID FEN	COMMUNITY	U		G3 S1S2		4307336 11
QUEENSBURY	GLENS FALLS 432124 734126	S	1989	B	RICH SHRUB FEN RICH SHRUB FEN	COMMUNITY	U		G3G4 S1S2		4307336 11
QUEENSBURY	GLENS FALLS 431902 734210	S	1985	C	HEMILEUCA MAIA SSP 3 INLAND BARRENS BUCKMOTH	MOTH	U SC		G4T1T2 S1	ESU	4307336 9
QUEENSBURY	GLENS FALLS 431846 734122	S	1985	C	HEMILEUCA MAIA SSP 3 INLAND BARRENS BUCKMOTH	MOTH	U SC		G4T1T2 S1	ESU	4307336 10
QUEENSBURY	GLENS FALLS 431955 734135	S	1989	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307336 2
QUEENSBURY	GLENS FALLS 431939 734244	S	1979	F	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307336 3
QUEENSBURY	GLENS FALLS 431908 734254	S	1979	F	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307336 4
QUEENSBURY	GLENS FALLS 431846 734122	S	1988	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	
QUEENSBURY	GLENS FALLS 431941 734138	S	1990	C	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	

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QUEENSBURY	GLENS FALLS 432059 734039	S	1989	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307336 1
QUEENSBURY	GLENS FALLS 431923 734135	S	1989	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307336 5
QUEENSBURY	GLENS FALLS 431923 734104	S	1989	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307336 12
QUEENSBURY	GLENS FALLS 431842 734053	S	1989	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307336 13
QUEENSBURY	GLENS FALLS 431826 734102	S	1989	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307336 14
QUEENSBURY	GLENS FALLS 431734 734222	S	1989	D	LYCAEIDES MELISSA SAMUELIS KARNER BLUE	BUTTERFLY or SKIPPER	E	LE	G5T2 S1S2	ESU	4307336 15
QUEENSBURY	GLENS FALLS 432222 734028	M	1900	H	ARETHUSA BULBOSA SWAMP PINK	VASCULAR PLANT	R		G4 S2		4307336 8
QUEENSBURY	GLENS FALLS 432124 734126	S	1989	B	SCORPIDIUM SCORPIOIDES SCORPIDIUM	NON-VASCULAR PLANT	U		G4G5 S1S2		4307336 11
QUEENSBURY	GLENS FALLS 432124 734126	S	1986	A	SPHAGNUM SUBFULVUM SPHAGNUM	NON-VASCULAR PLANT	U		G? S1		4307336 11
QUEENSBURY	GLENS FALLS 431644 734224	S	1984	E?	WARM WATER FISH CONCENTRATION AREA WARM WATER FISH CONCENTRATION AREA	OTHER	U				
QUEENSBURY	HUDSON FALLS 431958 733640	S	1988	D	MARL FEN MARL FEN	COMMUNITY	U		G2G3 S1		

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QUEENSBURY	HUDSON FALLS 432002 733719	M	1942	H	CYPRIPEDIUM CANDIDUM SMALL WHITE LADYSLIPPER	VASCULAR PLANT	E		G4 S1		4307335	2
QUEENSBURY FORT ANN	LAKE GEORGE 432636 733737	M	1942	H	CAREX BACKII ROCKY MOUNTAIN SEDGE	VASCULAR PLANT	T		G4 S1S2		4307346	3
ASHINGTON												
ARGYLE	HUDSON FALLS 431727 733104	S	1992	D	ARDEA HERODIAS GREAT BLUE HERON	BIRD	P		G5 S5		4307335	5
EASTON	SCHAGHTICOKE 425853 733631	M	1936	H	MYRIOPHYLLUM PINNATUM GREEN PARROT'S-FEATHER	VASCULAR PLANT	U		G5 S1		4207385	2
EASTON	SCHUYLERVILLE 430113 733135	M	1908	H	ARABIS MISSOURIENSIS GREEN ROCK-CRESS	VASCULAR PLANT	R		G5 S2		4307315	1
FORT ANN	FORT ANN 432722 732837	S	1993	C	CROTALUS HORRIDUS TIMBER RATTLESNAKE	REPTILE	T		G5 S3	ESU	4307344	4
FORT ANN	FORT ANN 432849 732717	M	1900	X	ARABIS MISSOURIENSIS GREEN ROCK-CRESS	VASCULAR PLANT	R		G5 S2		4307344	2
FORT ANN	FORT ANN 432503 732845	M	1900	H	CAREX CUMULATA CLUSTERED SEDGE	VASCULAR PLANT	R		G3G4 S1S2		4307344	3
FORT ANN	FORT ANN 432534 732944	M	1897	H	CAREX FORMOSA HANDSOME SEDGE	VASCULAR PLANT	R	C2	G3 S2S3		4307344	1
FORT ANN	PUTNAM MOUNTAIN 432647 733602	S	1992	D	ARDEA HERODIAS GREAT BLUE HERON	BIRD	P		G5 S5			

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FORT ANN	PUTNAM MOUNTAIN 432833 733309	M	1899	H	CAREX CRYPTOLEPIS NORTHEASTERN SEDGE	VASCULAR PLANT	U		G4 S2S3		4307345	12
FORT ANN	PUTNAM MOUNTAIN 432559 733341	M	1918	H	CAREX CRYPTOLEPIS NORTHEASTERN SEDGE	VASCULAR PLANT	U		G4 S2S3		4307345	13
FORT ANN	PUTNAM MOUNTAIN 432546 733259	M	1918	H	CAREX CUMULATA CLUSTERED SEDGE	VASCULAR PLANT	R		G3G4 S1S2		4307345	9
FORT ANN	PUTNAM MOUNTAIN 432440 733650	S	1987	C	CAREX MERRITT-FERNALDII A SEDGE	VASCULAR PLANT	R		G5 S2		4307345	6
FORT ANN	PUTNAM MOUNTAIN 432546 733259	M	1918	H	CYNOGLOSSUM VIRGINIANUM VAR BOREALE NORTHERN WILD COMFREY	VASCULAR PLANT	T		G5T3? S1		4307345	9
FORT ANN QUEENSBURY	PUTNAM MOUNTAIN 432421 733652	M	1942	H	CYPERUS HOUGHTONII HOUGHTON UMBRELLA-SEDGE	VASCULAR PLANT	R		G3G4 S3		4307345	11
FORT ANN	PUTNAM MOUNTAIN 432419 733600	M	1895	H	CYPERUS HOUGHTONII HOUGHTON UMBRELLA-SEDGE	VASCULAR PLANT	R		G3G4 S3		4307345	10
FORT ANN	PUTNAM MOUNTAIN 432318 733515	M	1915	H	PTEROSPORA ANDROMEDEA GIANT PINE-DROPS	VASCULAR PLANT	E		G5 S1		4307345	14
FORT ANN	PUTNAM MOUNTAIN 432827 733209	M	1900	X	SCIRPUS ANCISTROCHAETUS NORTHEASTERN BULRUSH	VASCULAR PLANT	U	LE	G2 SX		4307345	1
FORT EDWARD	FORT MILLER 431434 733349	S	1992	E	ASIO FLAMMEUS SHORT-EARED OWL	BIRD	P SC		G5 S2	ESU		
FORT EDWARD	FORT MILLER 431420 733340	S	1992	E	CIRCUS CYANEUS NORTHERN HARRIER	BIRD	T		G5 S3	ESU		

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FORT EDWARD	HUDSON FALLS 431601 733456	M		H	CYPERUS HOUGHTONII HOUGHTON UMBRELLA-SEDGE	VASCULAR PLANT	R		G3G4 S3		4307335	9
FORT EDWARD ARGYLE KINGSBURY	HUDSON FALLS 431527 733239	S	1992	E	RAPTOR CONCENTRATION AREA RAPTOR CONCENTRATION AREA	OTHER	U				4307335	11
KINGSBURY ARGYLE	HUDSON FALLS 431758 733113	M	1991	E	ASIO FLAMMEUS SHORT-EARED OWL	BIRD	P	SC	G5 S2	ESU	4307335	12
KINGSBURY	HUDSON FALLS 431943 733401	M	1900	H	ASTER CILIOLATUS AN ASTER	VASCULAR PLANT	U		G5 S1		4307335	10
KINGSBURY	HUDSON FALLS 432210 733254	M	1898	H	CAREX COMPLANATA HIRSUTE SEDGE	VASCULAR PLANT	R		G5 S1?		4307335	8
KINGSBURY	HUDSON FALLS 432207 733248	M	1897	H	CAREX LUPULIFORMIS FALSE HOP SEDGE	VASCULAR PLANT	R		G3G4Q S2S3		4307335	3
KINGSBURY	HUDSON FALLS 432212 733246	M		H	HEDYOTIS PURPUREA VAR CALYCOSA PURPLE BLUETS	VASCULAR PLANT	U		G5T5 SH		4307335	4
KINGSBURY	HUDSON FALLS 432212 733246	M	1900	H	POTAMOGETON HILLII HILL'S PONDWEED	VASCULAR PLANT	T		G3 S2		4307335	4
KINGSBURY	PUTNAM MOUNTAIN 432243 733307	M	1920	H	APLECTRUM HYEMALE PUTTYROOT	VASCULAR PLANT	V		G5 S1		4307345	8
KINGSBURY	PUTNAM MOUNTAIN 432250 733312	S	1985	C	CAREX FORMOSA HANDSOME SEDGE	VASCULAR PLANT	R	C2	G3 S2S3			
KINGSBURY	PUTNAM MOUNTAIN 432232 733306	M	1920	H	CAREX FORMOSA HANDSOME SEDGE	VASCULAR PLANT	R	C2	G3 S2S3			

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WHITEHALL	FORT ANN 432849 732717	M	1900	H	CAREX CRYPTOLEPIS NORTHEASTERN SEDGE	VASCULAR PLANT	U		G4 S2S3		4307344	2

Records Processed

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATIC
Wildlife Resources Center
700 Troy-Schenectady Road (518) 783-3932
Latham, NY 12110-2400

April 11, 1995

Ari Selvakumar
EBASCO Services Inc.
8 Peach Tree Hill Road
Livingston, New Jersey 07039

Dear Ms. Selvakumar:

We have reviewed the New York Natural Heritage Program files with respect to your request for biological information concerning US EPA Hazardous Waste Investigations, sites as indicated on your enclosed maps, located in New York State.

Enclosed is a computer printout covering the area you requested to be reviewed by our staff. The information contained in this report is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

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

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

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

Sincerely,
Information Services
New York Natural Heritage Program

Encs.
cc: Reg. 4, Wildlife Mgr.
Reg. 5, Wildlife Mgr.

USERS GUIDE TO NATURAL HERITAGE DATA

DATA SENSITIVITY: The data provided in these reports is sensitive and should be treated in a sensitive manner. The data is for your in-house use and may not be released to the general public or incorporated in any public document without prior permission from the Natural Heritage Program.

BIOLOGICAL AND CONSERVATION DATA SYSTEM (BCD) ELEMENT OCCURRENCE REPORTS:

COUNTY NAME: County where the element occurrence is located.
TOWN NAME: Town where the element occurrence is located.
USGS 7 1/2' TOPOGRAPHIC MAP: Name of 7.5 minute US Geological Survey (USGS) quadrangle map (scale 1:24,000).
LAT: Centrum latitude coordinates of the location of the occurrence. Important: latitude and longitude must be used with PRECISION (see below). For example, the location of an occurrence with M (minute) precision is not precisely known at this time and is thought to occur somewhere within a 1.5 mile radius of the given latitude/longitude coordinates.
LONG: Centrum longitude coordinates of the location of the occurrence. See also LAT above.
PRECISION: S - seconds: Location known precisely. (within a 300' or 1-second radius of the latitude and longitude given.
M - minutes: Location known only to within a 1.5 mile (1 minute) radius of the latitude and longitude given.
SIZE (acres): Approximate acres occupied by the element at this location.
SCIENTIFIC NAME: Scientific name of the element occurrence.
COMMON NAME: Common name of the element occurrence.
ELEMENT TYPE: Type of element (i.e. plant, community, other, etc.)
LAST SEEN: Year element occurrence last observed extant at this location.
EO RANK: Comparative evaluation summarizing the quality, condition, viability and defensibility of this occurrence. Use in combination with LAST SEEN and PRECISION.

- A-E = Extant: A=excellent, B=good, C=marginal, D=poor, E=extant but with insufficiently data to assign a rank of A - D.
- F = Failed to find. Did not locate species, but habitat is still there and further field work is justified.
- H = Historic. Historic occurrence without any recent field information.
- X = Extirpated. Field/other data indicates element/habitat is destroyed and the element no longer exists at this location.

NYS STATUS - animals: Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

- E = Endangered Species: any species which meet one of the following criteria:
  1) Any native species in imminent danger of extirpation or extinction in New York.
  2) Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.
- T = Threatened Species: any species which meet one of the following criteria:
  1) Any native species likely to become an endangered species within the foreseeable future in NY.
  2) Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.
- SC = Special Concern Species: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).
- P = Protected Wildlife (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.
- U = Unprotected (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.
- G = Game (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NYS STATUS - plants: The following categories are defined in regulation 6NYCRR part 193.3 and apply to New York State Environmental Conservation Law section 9-1503.

- (blank) = no state status
- E = Endangered Species: listed species are those with:
  1) 5 or fewer extant sites, or
  2) fewer than 1,000 individuals, or
  3) restricted to fewer than 4 U.S.G.S. 7 1/2 minute topographical maps, or
  4) species listed as endangered by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.
- T = Threatened: listed species are those with:
  1) 6 to fewer than 20 extant sites, or
  2) 1,000 to fewer than 3,000 individuals, or
  3) restricted to not less than 4 or more than 7 U.S.G.S. 7 and 1/2 minute topographical maps, or
  4) listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.
- R = Rare: listed species have:
  1) 20 to 35 extant sites, or
  2) 3,000 to 5,000 individuals statewide.
- U = Unprotected
- V = Exploitably vulnerable: listed species are likely to become threatened in the near future throughout all or a significant portion of their range within the state if causal factors continue unchecked.

NYS STATUS - communities: At this time there are no categories defined for communities.

continued on next page

FEDERAL STATUS (plants and animals): The categories of federal status are defined by the United States Department of the Interior as part of the 1974 Endangered Species Act (see Code of Federal Regulations 50 CFR 17). Additional information on this law are enumerated in the Federal Register vol. 50, no. 188, pp. 39526 - 39527.

(blank) = No Federal Endangered Species Act status.
LE = The taxon is formally listed as endangered.
LT = The taxon is formally listed as threatened.
LELT = The taxon is formally listed as endangered in part of its range and threatened in other parts.
PE = The taxon is proposed as endangered.
PT = The taxon is proposed as threatened.
C1 = Candidate, category 1 - There is sufficient information to list the taxon as endangered or threatened.
C2 = Candidate, category 2 - The taxon may be appropriate for listing but more data are needed.
3A = The taxon considered extinct by the U. S. Fish and Wildlife Service.
3B = The taxon is no longer considered taxonomically distinct by the U.S. Fish and Wildlife Service & thus not appropriate for listing.
3C = The taxon has been shown to be more abundant, widespread, or better protected than previously thought and therefore not in need of official listing.
* = The taxon is possibly extinct.
** = The taxon is thought to be extinct in the wild but extant in cultivation.

Additional codes:
(C2NL) = Heritage code indicating that the taxon is a candidate in some areas, not listed in other areas.
(E/SA) = Heritage code indicating that the taxon is endangered because of similarity of appearance to other endangered species or subspecies.

FEDERAL STATUS (communities): At this time there are no categories defined for communities.

GLOBAL AND STATE RANKS (animals, plants, communities and others): Each element has a global and state rank as determined by the NY Natural Heritage Program. **These ranks carry no legal weight.** The global rank reflects the rarity of the element throughout the world and the state rank reflects the rarity within New York State. Infraspecific taxa are also assigned a taxon rank to reflect the infraspecific taxon's rank throughout the world.

GLOBAL RANK:
G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or very few remaining acres, or miles of stream) or especially vulnerable to extinction because of some factor of its biology.
G2 = Imperiled globally because of rarity (6 - 20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.
G3 = Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g. a physiographic region), or vulnerable to extinction throughout its range because of other factors.
G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
GH = Historically known, with the expectation that it might be rediscovered.
GX = Species believed to be extinct.
GU = Status unknown.

STATE RANK:
S1 = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.
S2 = Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.
S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.
S4 = Apparently secure in New York State.
S5 = Demonstrably secure in New York State.
SH = Historically known from New York State, but not seen in the past 15 years.
SX = Apparently extirpated from New York State.
SA = Accidental or casual in the state.
SE = Exotic, not native to New York State.
SP = Element potentially occurs in the state but there are no occurrences reported.
SR = Reported in the state but without persuasive documentation.
SU = Status unknown.
TAXON (T) RANK: The T-ranks (T1 - T5) are defined the same way the Global ranks (G1 - G5) are but the T-rank only refers to the rarity of the subspecific taxon of the species as a whole.
T1 through T5 = See Global Rank definitions above.
Q = Indicates a question exists whether or not the taxon is a good taxonomic entity.
? = Indicates a question exists about the rank.

OFFICE USE: Information for use by the Natural Heritage Program.

SIGNIFICANT HABITAT REPORTS:

REPORT ID: Significant habitat file code.
NAME OF AREA: Site name where the significant habitat is located.
TYPE OF AREA: Type of significant habitat.
COUNTY/TOWN OR CITY: County and town where the significant habitat is located.
QUADRANGLE: Name of the USGS 7.5 minute topographic map where the significant habitat is located.
LATITUDE: Latitude coordinates (degrees, minutes, seconds) for the location of the significant habitat.
LONGITUDE: Longitude coordinates for the location of the significant habitat.

REFERENCE NO. 18

LATITUDE AND LONGITUDE CALCULATION WORKSHEET #1
LI USING CUSTOM RULER OR COORDINATOR™

SITE NAME: Glens Falls Landfill CERCLIS #: NYD980526620

AKA: _____ SSID: _____

ADDRESS: Lagarre Road

CITY: Queensbury STATE: NY ZIP CODE: 12801

SITE REFERENCE POINT: Center of Site as marked on Phase II Location Map

USGS QUAD MAP NAME: Glens Falls TOWNSHIP: ___ N/S RANGE: ___ E/W

SCALE: 1:24,000 MAP DATE: _____ SECTION: ___1/4 ___1/4 ___1/4

MAP DATUM: 1927 1983 (CIRCLE ONE) MERIDIAN: _____

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 7.5' MAP (attach photocopy):

LONGITUDE: 73° 37' 30" LATITUDE: 43° 15' 0"

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: 73° 40' 00" LATITUDE: 43° 17' 30"

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) ALIGN THE BOTTOM OF THE SCALE WITH BOTTOM OF GRID. ALIGN THE TOP OF THE SCALE WITH THE TOP OF GRID. POSITION EDGE OF RULER OVER SITE REFERENCE POINT WHILE KEEPING TOP AND BOTTOM ALIGNED.

B) READ TICS ON RULER AT 1- OR 0.5-SECOND INTERVALS (INTERPOLATE).

C) EXPRESS IN MINUTES AND SECONDS (1'= 60"): 0' 46.5"

D) ADD TO STARTING LATITUDE: 43° 17' 30.0" + 0' 46.5" =

SITE LATITUDE: 43° 18' 16.5"

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) ALIGN THE BOTTOM OF THE SCALE WITH RIGHT SIDE OF GRID. ALIGN THE TOP OF THE SCALE WITH THE LEFT SIDE OF GRID. POSITION EDGE OF RULER OVER SITE REFERENCE POINT WHILE KEEPING TOP AND BOTTOM ALIGNED.

B) READ TICS ON RULER AT 1- or 0.5-SECOND INTERVALS. (INTERPOLATE)

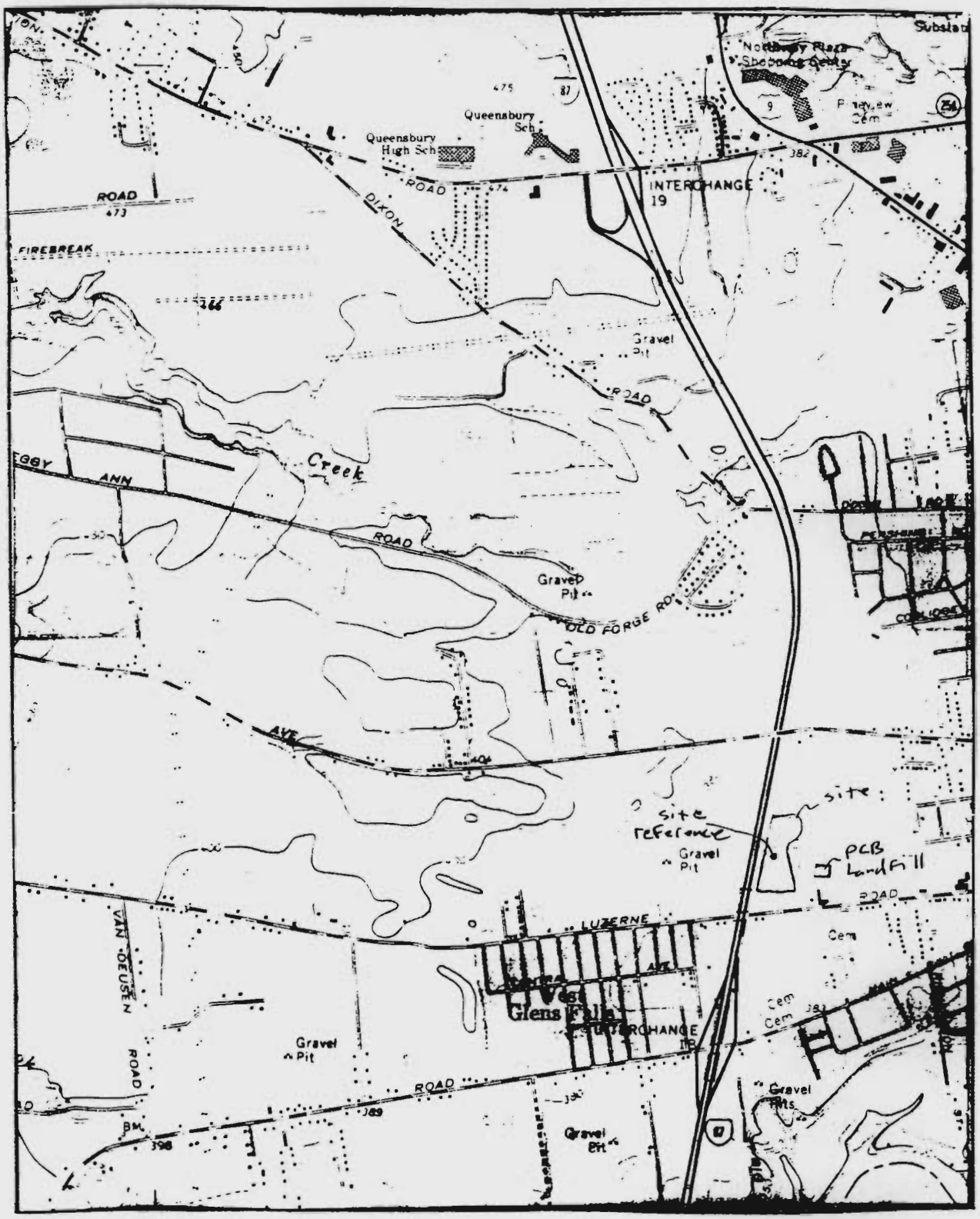
C) EXPRESS IN MINUTES AND SECONDS (1'= 60"): 0' 34.8"

D) ADD TO STARTING LONGITUDE: 73° 40' 00.0" + 0' 34.8" =

SITE LONGITUDE: 73° 40' 34.8"

INVESTIGATOR: Dennis Place DATE: 2/6/95

SITE NAME: Glens Falls Land Fill **NUMBER:** NYD980506620



TOPOGRAPHIC MAP QUADRANGLE NAME: Glens Falls **SCALE:** 1:24,000

COORDINATES OF LOWER RIGHT-HAND CORNER OF 2.5-MINUTE GRID:

LATITUDE: 43 • 17 • 30 • **LONGITUDE:** 73 • 40 • 00 •

REFERENCE NO. 19

FILE

bcc:

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

LB/me

DEC 28 1989

Mr. Fred H. Alexy
President
AMG Industries, Inc.
53-55 Luzerne Road
Glens Falls, NY 12801-3399

Dear Mr. Alexy:

Re: Luzerne Road Site, No. 557010

This is in response to your letter of August 31, 1989 and Mr. Daniel Steenberge's response to you of October 13, 1989 regarding the site boundaries for the subject site.

Based on a review of all materials in our files and a site visit by Ms. Linda Beagle of my staff on December 15, 1989, we have determined the site boundaries to be:

- Rear property line of 53 Luzerne Road (northern boundary)
- East property line of 53 Luzerne Road, approximately one foot from fenced PCB Secure Landfill (eastern boundary)
- West property line of 53 Luzerne Road, and east property line of 55 Luzerne Road (western boundary)
- 300 feet south and parallel to northern property line of 53 Luzerne Road (southern boundary)

See attached maps. This determination includes the following two caveats:

- the site boundaries may be changed again pending results of future investigations;

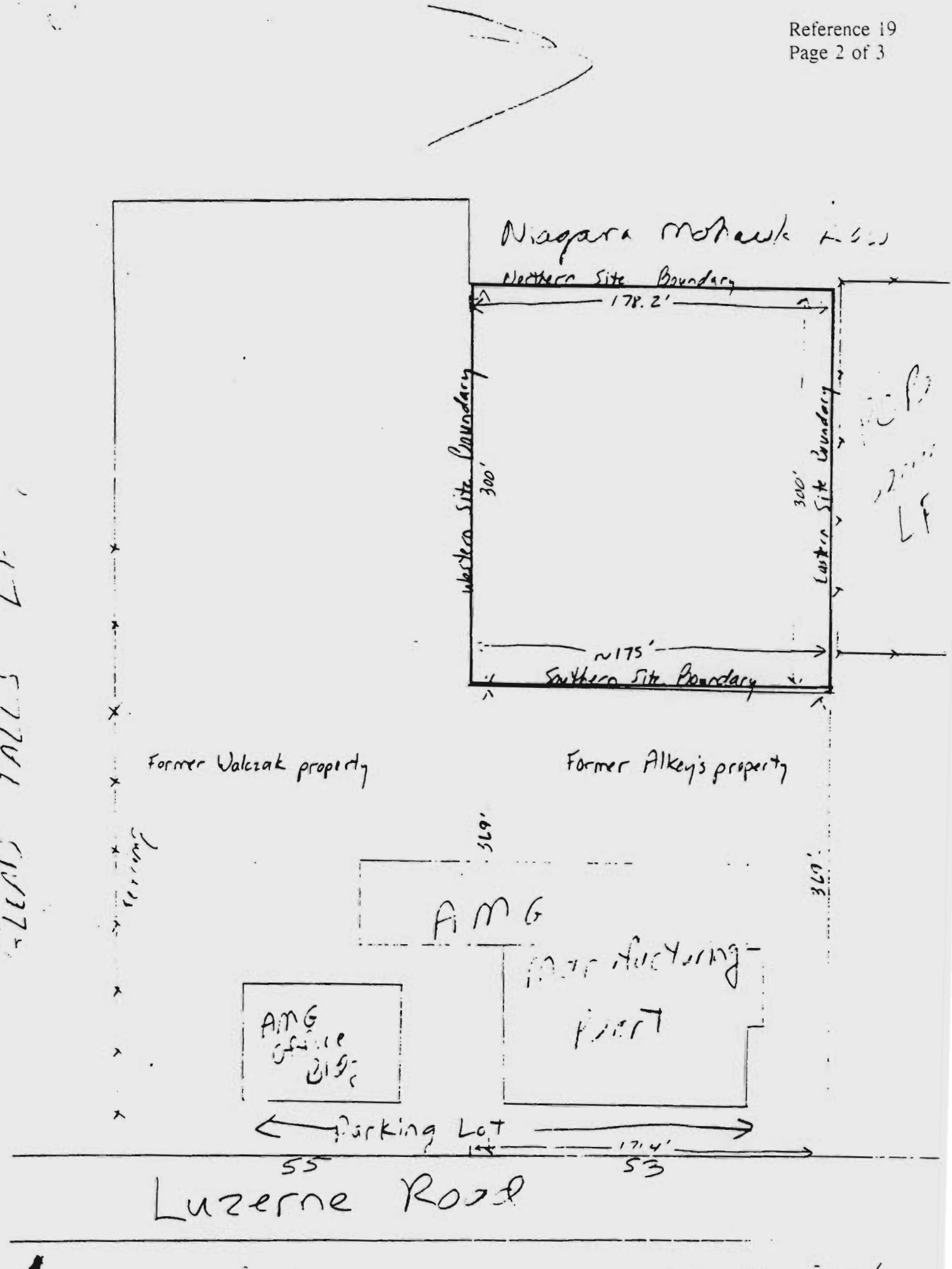
- this determination in no way implies that we, the Division of Hazardous Waste Remediation, declare that the 55 Luzerne Road property or the remaining portion of the 53 Luzerne Road property are clean, or are not contaminated, since we presently have no data to support a determination.

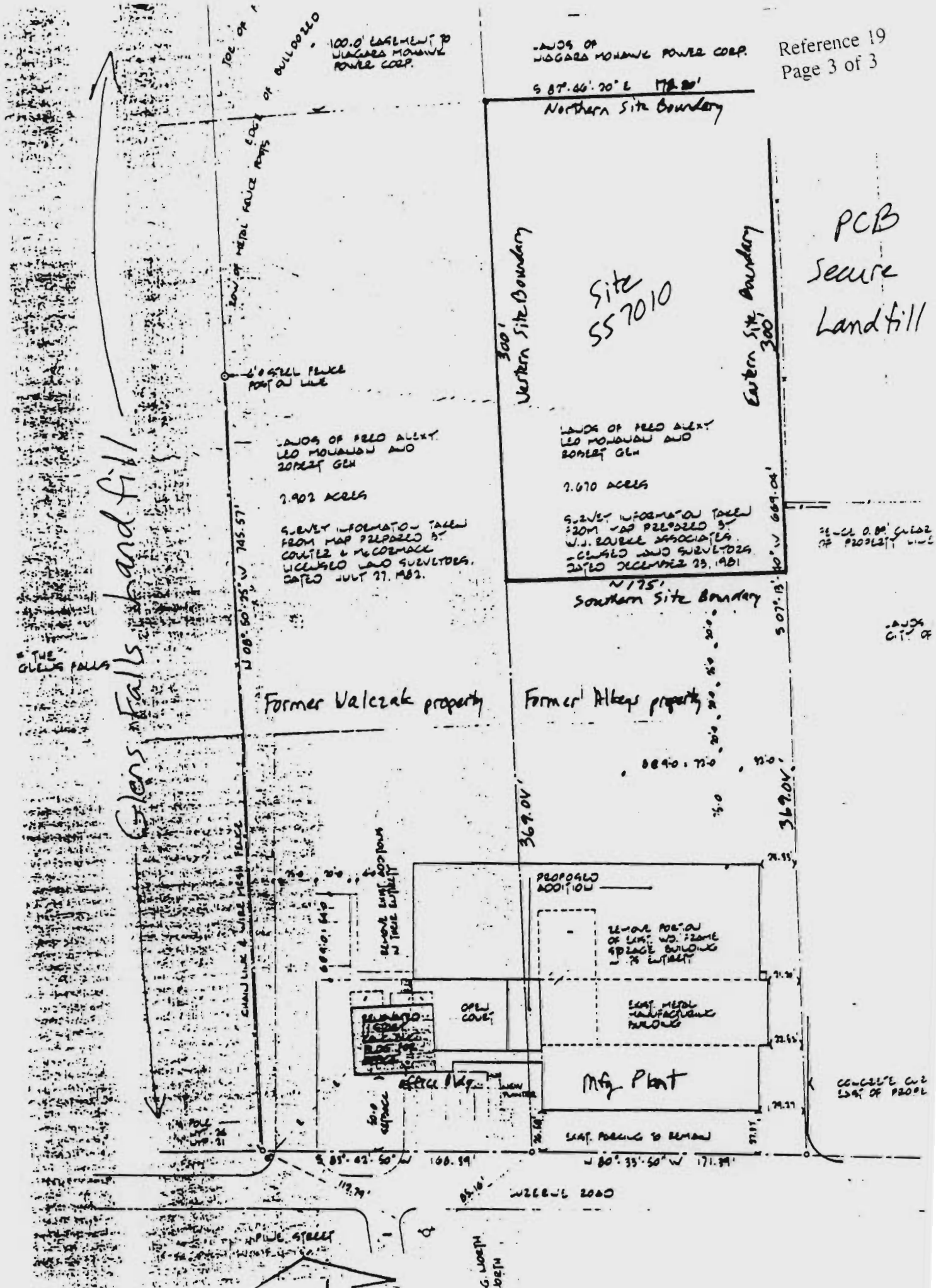
Please advise if we may be of further assistance.

Sincerely,

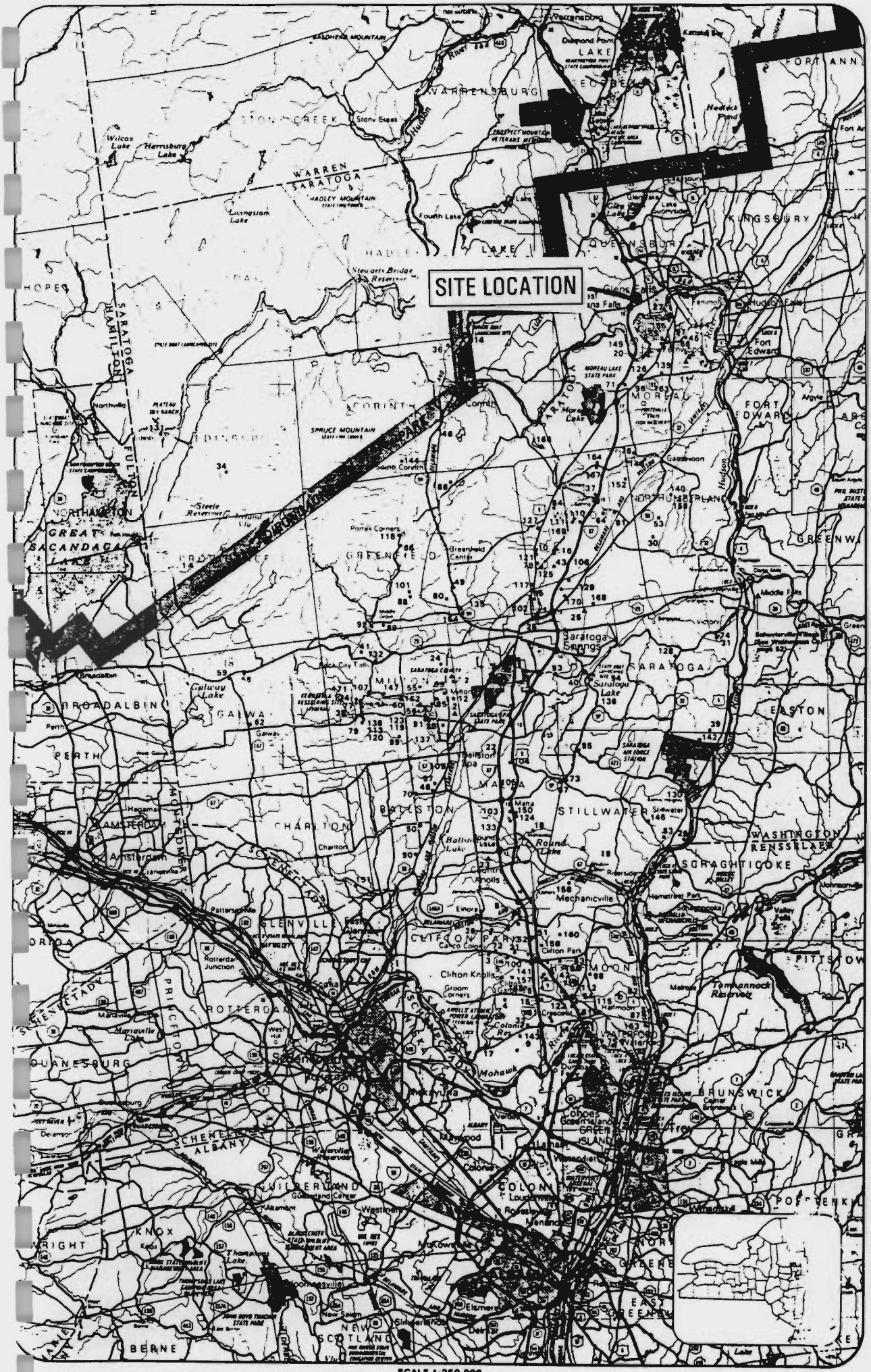
Robert L. Marino
Chief
Site Control Section
Bureau of Hazardous Site Control
Division of Hazardous Waste Remediation

cc: D. Steenberge


Niagara Mohawk
Northern Site Boundary
178.2'
Western Site Boundary
300'
Eastern Site Boundary
300'
~175'
Southern Site Boundary
Former Valczak property
Former Alkey's property
369'
369'
AMG
Manufacturing
Plant
AMG
Office
Bldg.
Parking Lot
171.4'
55
53
Luzerne Road


PCB Secure Landfill
Site SS7010
Northern Site Boundary
Western Site Boundary
Eastern Site Boundary
Southern Site Boundary
Former Valczak property
Former Alkeys property
Niagara Falls
Mfg Plant
Office Bldg.
Proposed Addition
Open Cover
Metal Manufacturing Building
Asphalt Street

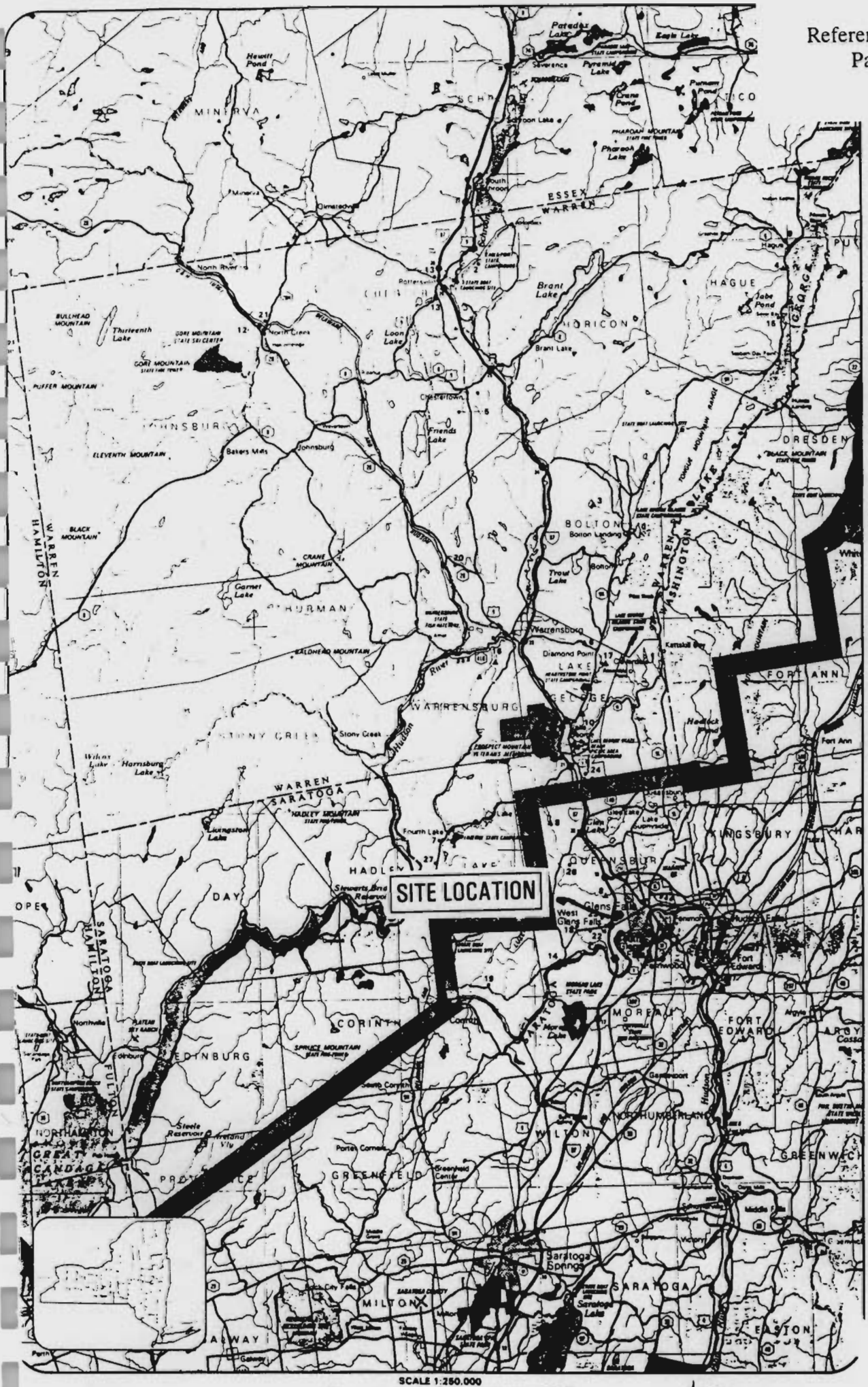
REFERENCE NO. 20



LOCATION OF COMMUNITY WATER SYSTEM SOURCES-1982

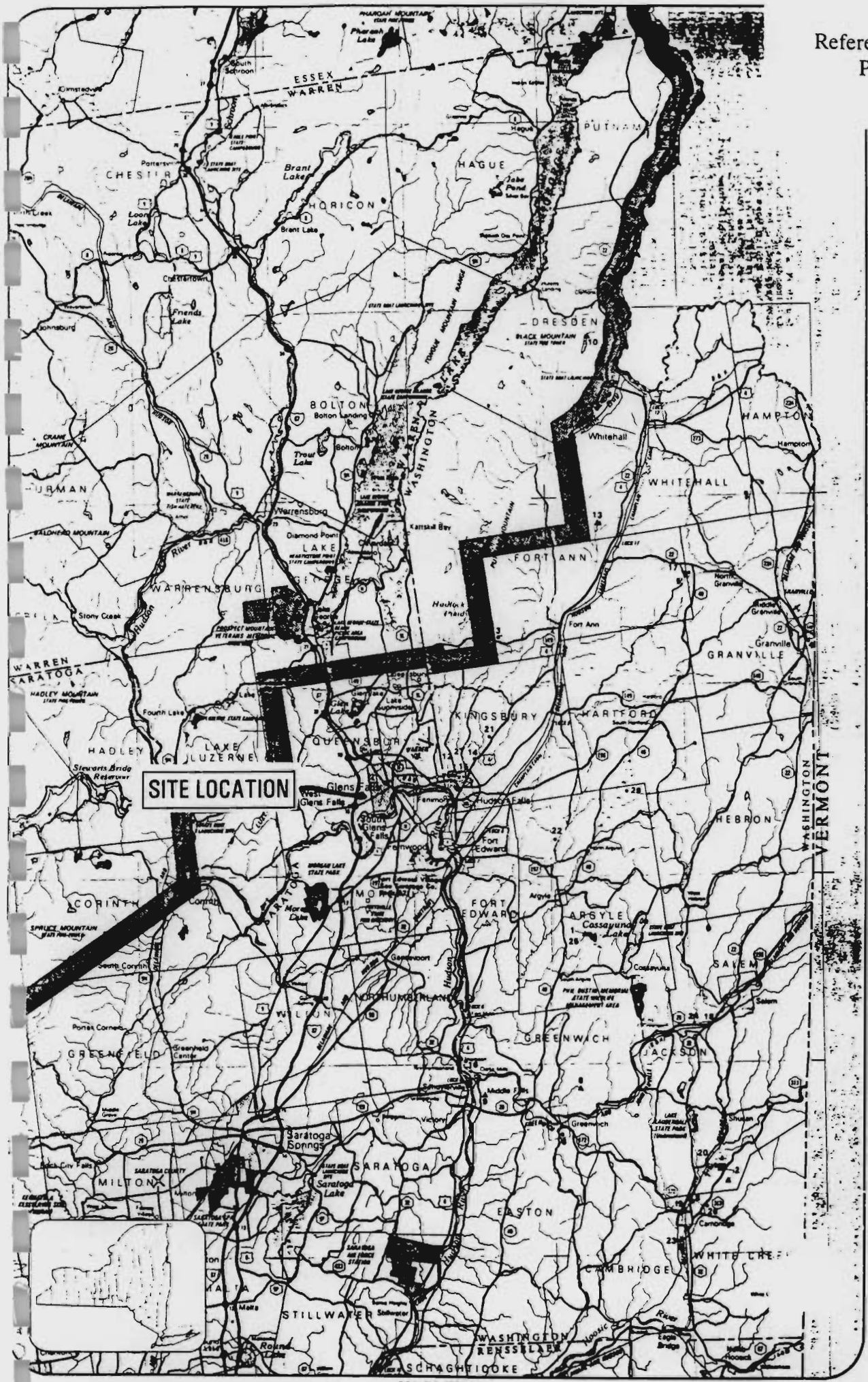
NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

SARATOGA COUNTY



J OF COMMUNITY WATER SYSTEM SOURCES-1982

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



OF COMMUNITY WATER SYSTEM SOURCES-1982

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

WASHINGTON COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
1	Amsterdam City (Montgomery Co, Page 58).		Steele & Ireland Vly Reservoirs, Hans Creek
2	Ballston Spa Water Supply.	5000.	Upper and Lower Ballston Spa Reservoirs, Well
3	Calico Colony - Woodland Hills.	440.	Wells
4	Clifton Gardens Water Supply.	NA.	Wells
5	Clifton Knolls Subdivision.	3200.	Wells
6	Colonial Green Water Supply.	80.	Wells
7	Corinth Public Water Supply.	3500.	Wells
8	Country Knolls Estates Water System.	1200.	Wells
9	Crescent Estates.	5400.	Wells
10	Featherwood Water Company.	440.	Wells
11	Fort Edward Village (Washington Co, Page 52).		Christie, Dority, New and Sarderburg Reservoirs, Wells
12	Geyser Crest - Heritage Knolls.	4800.	Wells
13	Gilbert Road Water Works.	NA.	Wells
14	H & M Subdivision.	50.	Wells
15	Halfmoon Water District #2.	40.	Wells
16	Lake Elizabeth.	620.	Wells
17	Latham Water District (Albany Co, Page 56).		Stony Creek Reservoir
18	Luther Forest.	152.	Wells
19	Mechanicville City.	7600.	Plum & Baker Brooks, Mechanicville Reservoir
20	Moreau Water District #2.	1440.	Wells
21	Northcrest.	8.	Wells
22	Pine North Subdivision.	181.	Wells
23	Round Lake Village.	1000.	Reservoir
24	Rowlands Hollow Subdivision.	488.	Wells
25	Saratoga Springs City.	23906.	Loughberry Lake, Big Meadow Brook
	Schuylerville Village (See No 9, Washington Co, Page 52).	1600	
26	Sherwood Forest.	100.	Wells, Well (Infiltration Gallery)
27	South Glens Falls Village.	3700.	Wells, Spring
28	South Hadley Water District.	250.	Wells
29	Stillwater Village.	1200.	Wells
30	Terrel Hills.	30.	Wells
31	Victory Village.	500.	Wells
32	Village Green.	350.	Wells
33	Waterford Village.	3000.	Hudson River
	Non-Municipal Community		
34	Adirondack Bible College.	NA.	Wells
35	Anthony's Trailer Park.	NA.	Wells
36	Antone Trailer Park.	NA.	Wells
37	Ballard Oaks.	NA.	Wells
38	Barnes Trailer Court.	NA.	Wells
39	Battlefield Trailer Park.	NA.	Wells
40	Bayshore Park.	50.	Wells (Infiltration Gallery)
41	Big "D" Trailer.	15.	Wells
42	Birch Brier Village.	40.	Wells
43	Birch Meadows Mobile Estates.	175.	Wells
44	Bluebird Knolls.	NA.	Wells
45	Bluebird Terrace Mobile Home Park.	65.	Wells
46	Bob's Bait & Trailer Park.	NA.	Wells
47	Boradgiak Trailer Park.	17.	Wells
48	Brookline Village Apartments.	250.	Wells
49	Brookview Mobile Home Park.	125.	Wells
50	Cameron Trailer Court.	80.	Wells
51	Clifton Court Apartments.	32.	Wells
52	Clifton Park Apartments.	600.	Wells
53	Coldbrook Trailer Park.	60.	Wells
54	Country Acres Apartments.	NA.	Wells
55	Country Acres Mobile Home Park.	NA.	Wells
56	Country Manor Mobile Home Court.	25.	Wells
57	Covered Wagon Trailer Court.	NA.	Wells
58	Cozy Hollow Mobile Home Court.	35.	Wells
59	Crandalls Acres.	NA.	Wells
60	Creek and Pines Mobile Home Park.	NA.	Wells
61	Crescent City Mobile Home Park.	NA.	Wells
62	D & S Trailer Court.	NA.	Wells
63	D and R Mobile Home Park.	NA.	Wells
64	D & H Mobile Home Park.	28.	Wells
65	Daniels Hilltop Mobile Park.	NA.	Wells

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Non Municipal Community		
66	Delta Mobile Estates.	24.	Wells
67	DiDonna's Trailer Park.	NA.	Wells
68	Dons Trailer Court.	NA.	Well.
69	Everts Trailer Town.	NA.	Wells
70	Elizabeth Gardens Apartments.	36.	Wells
71	English Village Apartments.	200.	Wells
72	Evergreen Apartments.	9.	Wells
73	Fay's Mobile Home Park.	NA.	Wells
74	Fishkill Mobile Home Park.	NA.	Wells
75	Fonda Heights Trailer Park.	NA.	Wells
76	Fortsville Acres.	NA.	Wells
77	Friendly Neighborhood Mobile Park.	NA.	Wells
78	Gillor Mobile Home Park.	200.	Wells
79	Gloweege Mobile Estates.	NA.	Wells
80	Grange Road Mobile Estates.	60.	Wells
81	Grant Park Mobile Estates.	NA.	Wells
82	Halfmoon Trailer Court.	NA.	Wells
83	Hallum Trailer Court.	NA.	Wells
84	Hammond Trailer Park.	44.	Wells
85	Hidden Acres Trailer Park.	NA.	Wells
86	Howe Road Trailer Park.	NA.	Wells
87	Hudson View Trailer Court	NA.	Wells
88	Hyspot Mobile Development One	66.	Wells
89	Hyspot Mobile Development Two	20.	Wells
90	Kay's Trailer Park.	NA.	Wells
91	Keator's Trailer Park.	NA.	Wells
92	L & H Mobile Acres.	NA.	Wells
93	Lake Lonely Trailer Court.	NA.	Wells
94	Lakeside Market Trailer Park.	NA.	Wells
95	Lakeside Mobile Home Park.	88.	Wells
96	Lamplighter Mobile Home Park.	NA.	Wells
97	Lanewood Terrace.	NA.	Wells
98	LaValley Mobile Home Park.	12.	Wells
99	Locust Hill Trailer Park.	NA.	Wells
100	London Square Apartments.	950.	Wells
101	Lorendale Mobile Home Park.	12.	Wells
102	Loughberry Mobile Home Park.	NA.	Wells
103	Malta Gardens Apartments.	200.	Wells
104	Malta Mobile Acres.	300.	Wells
105	Malta Trailer Park.	NA.	Wells
106	Mansard Apartments.	100.	Wells
107	Manz Trailer Park.	12.	Wells
108	Martindale Court Inc.	288.	Wells
109	McGinns Trailer Park.	34.	Wells
110	McGregor Apartments.	80.	Wells
111	McGregor Apartments.	55.	Wells
112	Midway Mobile Village.	NA.	Wells
113	Milton Knolls Mobile Home Park.	NA.	Wells
114	Mohawk Terrace Apartments.	450.	Wells
115	Mooncrest Manor.	NA.	Wells
116	Morris Apartments.	NA.	Wells
117	Moskos Court.	NA.	Wells
118	North Creek Mobile Village.	NA.	Wells
119	Northern Pines.	NA.	Wells
120	Paisley Village Mobile Home Park.	NA.	Wells
121	Park Dantoine.	29.	Wells
122	Parkwood Village.	350.	Wells
123	Pettits Mobile Home Park.	14.	Wells
124	Pine Crest Trailer Court.	NA.	Wells
125	Pine View Trailer Park.	NA.	Wells
126	Pines Mobile Home Park.	NA.	Wells
127	Pleasant Valley Park.	NA.	Wells
128	Quaker Springs Mobile Home Park.	20.	Wells
129	Ray-Mar Village.	688.	Wells
130	Riverside Mobile Home Park.	NA.	Wells
131	Robinsons Trailer Park.	NA.	Wells
132	Rock City Falls Trailer Park.	55.	Wells
133	Round Lake Mobile Court.	NA.	Wells
134	Sandy's Mobile Acres.	NA.	Wells
135	Scene Manor Trailer Park.	NA.	Wells
136	Selbys Trailer Park.	NA.	Wells
137	Shady Acres Mobile Park.	NA.	Wells
138	Shady Knolls Trailer Park.	NA.	Wells
139	Shady Pines Mobile Home Park.	120.	Wells
140	Shelly Park.	NA.	Wells
141	Sitterly Park Apartments.	60.	Wells
142	Sleepy Hollow Trailer Park.	15.	Wells
143	Springbrook Mobile Home Park.	NA.	Wells

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Non Municipal Community		
144	Spruce Grove Trailer Park	NA.	Wells
145	Squire Park Apartments.	NA.	Wells
146	Stillmeadows Mobile Homes	NA.	Wells
147	Stockade Mobile Park Inc.	25.	Wells
148	Sunshine Mobile Home Park.	16.	Wells
149	Sweets Trailer Park.	NA.	Wells
150	Tall Pines Mobile Court.	NA.	Well.
151	The Charlton School	NA.	Wells
152	The Diplomat Mobile Home Court	10.	Wells
153	The Riverside.	NA	Wells
154	Three RS Trailer Court.	NA.	Wells
155	Tuckaway Mobile Home Park.	NA	Wells
156	Tuft Mobile Home Park.	950.	Wells
157	Twin Lakes Apartments Inc.	2000.	Wells
158	Vansteet Garden Apartments.	24.	Wells
159	Villa Rosato Apartments.	NA.	Wells
160	Vosburg Road Mobile Home Park.	NA.	Wells
161	West Crescent Trailer Park	NA.	Wells
162	West Milton Trailer Park	60	Wells
163	White Birth Estates.	NA	Wells
164	White Birches Park.	NA	Wells
165	Wilson's Mobile Home Park	NA	Wells
166	Wilton Developmental Center	2268	Wells
167	Wilton Estates.	NA.	Wells
168	Wilton Mobile Park.	25	Wells
169	Wilton Mobile Village.	NA	Wells
170	Ye Olde Gick Mobile Home Park.	25.	Wells
171	Youngs Trailer Park.	NA.	Wells

WASHINGTON COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
1	Argyle Village	400	Summit Lake
2	Cambridge Water Works	1700	Reservoirs
3	Fort Ann Water Supply	550	Wells
	Fort Edward Village (See No 11 Saratoga Co, Page 54)	3800	
4	Granville Village	2900	Wells
5	Granville Water District	1200	Wells, Well (Infiltration Gallery)
6	Greenwich Village	2200	Hay Reservoir, Wells
7	Hudson Falls Village	8500	Reservoir, Wells
8	Scenic Mountain Estates Water System	180	Wells
9	Schuylerville Village (Saratoga Co, Page 54)		Reservoirs (Springs)
10	Whitehall Village	3900	Pine Lake
Non-Municipal Community			
11	Copeland Pond Trailer Park	NA	Wells
12	Dix Trailer Court	9	Wells
13	Great Meadow Correctional Facility	1100	Dulph Pond
14	Homestead Court Apartments	40	Wells
15	Howard's Trailer Court	NA	Wells
16	Hudson River Villa	NA	Wells
17	Jeff-Glen Trailer Park	9	Wells
18	Jim's Trailer Park	20	Wells
19	H L Santerre Trailer Park	18	Wells
20	McMahon Mobile Court	25	Wells
21	Mountain View Mobile Estates	96	Wells
22	North Ridge Mobile Home Park	75	Wells
23	Owikill Mobile Estates	07	Wells
24	Pine's Trailer Park	22	Wells
25	Pleasant Valley Infirmary	128	Summit Lake
26	Scenic Mountain Estates	NA	Wells
27	Susan Marie Trailer Court	NA	Wells
28	Tamarack Valley Trailer Park	NA	Wells

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
1	Arcady Bay Estates	80	Lake George
2	Blue Sky Estates	NA	Wells
3	Bolton Water District	500	Edgecomb Pond
4	Cape Cod	100	Jenkins Brook
5	Chestertown Water District	1000	Wells
6	Diamond Point Water District	500	Smith Brook
7	Fourth Lake Water District	400	Wells
8	Glens Falls City	21000	Halfway Creek, Keenan, and Wilkie Reservoirs, Butler Pond
9	Hague Water Works	60	Reservoirs (Springs)
10	Lake George Village	1000	Lake George
11	Lake Luzerne Water District	2800	Seymour Brook Reservoir, Wells
12	North Creek Water District	800	Wells
13	Pottersville Water District	350	Wells
14	Queensbury Water District	5800	Hudson River
15	Silver Bay	NA	Wells (Springs)
16	Warrensburg Water District	2400	Big Brook Reservoir, Wells
Non Municipal Community			
17	Cannon Point Condominium 1 & 2	250	Lake George
18	Forest Park Mobile Home Court	NA	Wells
19	Four Acres Mobile Home Park	16	Wells
20	Glen Haven Trailer Court	NA	Wells
21	Gore Mountain Mobile Park	70	Wells
22	Grooms Trailer Park	75	Wells
23	Homestead Village Inc	NA	Wells
24	Magic Forest Mobile Home Park	40	Wells
25	Mcfnaneys Trailer Court	27	Wells
26	Mountain View Mobile Home Park	NA	Wells
27	Sunset Mobile Park	61	Wells

Saratoga County

11 - Fort Edward Village	3,500
20 - Moreau Water District #2	2,700
44 - Bluebird Knolls	66
45 - Bluebird Terrace MHP	84
68 - Don's Trailer Court	9
71 - English Village Apartments	388
96 - Lamplighter MHP	834
97 - Lanewood Terrace	15
126 - Pines Mobile Home Park	47
139 - Shady Pines Mobile Park	123
149 - Sweet's Trailer Park	44
163 - White Birch Estates	480
165 - Wilson's Mobile Home Park	15
166 - Wilton Development Center	3,100

Warren County

8 - Glens Falls City	17,000
14 - Queensbury Water District	20,000
18 - Forest Park MHP	600
22 - Grooms Trailer Park	14
23 - Homestead Village, Inc.	Not in operation
26 - Mountain View Mobile Park	33

Washington County

12 - Copeland Pond Trailer Park	0
27 - Susan Marie Trailer Court	Not in operation

NYSDOH GLENS FALLS DISTRICT OFFICE - PUBLIC WATER SUPPLIES
WATER SUPPLY DATA VALIDATION / SANITARY SURVEY

System Name: MOREAU WD #2 PWS ID: 4500177
ACTIVE COMMUNITY SYSTEM

Program Code: 100 Primary Service Area Type Code: 08 Ownership: T (TOWN or TOWNSHIP)

System Locality: MOREAU (T) Gazatteer Code: 4562 System Zip: 12801-

---

Service Connections: 800 Retail Population: 2700 SNC: NO

System Production Capacity: 400200 (gallons/day)

Average Daily Consumption: 100000 (gallons)

Distribution Storage Cap.: 0 (gallons) Type:

System Begin Date: 00/00 (yy/mm) System Deactivation Date: / (yy/mm)

For Seasonal Supplies: Begin Date: / (mm/dd) End Date: / (mm/dd)

Percent Metered: Residential: 100(%) Commercial: 100(%) Industrial: 000(%)

Date of Last Visit: 01/01/00 Staff:

Last Sanitary Survey: 02/06/89 Staff:

Data Validation or Inspection Date (this form): __ / __ / __ by: _____

NOTES / COMMENTS

Source/Treatment Information for: MOREAU WD #2
PWS ID: 4500177

SOURCE TYPE	ID	AVAIL.	CODE	NAME	PRODUCTION CAPACITY		NEXT ID	ENTRY POINT
SOURCE	001	PERM	G	CAISSON WELL	207000	MGD	004	
SOURCE	002	PERM	G	WELL #2	110400	MGD	04	
SOURCE	003	PERM	G	WELL #3	110400	MGD	04	
PLANT	004	PERM	T	TREATMENT / PUMP STA	0		04	

Active, Req ? , Treatment: D 423 Disinfection Hypochlorination, Pre
Active, Req ? , Treatment: F 423 Iron Removal Hypochlorination, Pre

NYSDOH GLENS FALLS DISTRICT OFFICE - PUBLIC WATER SUPPLIES
WATER SUPPLY DATA VALIDATION / SANITARY SURVEY

System Name: FORT EDWARD VILLAGE PWS ID: 5700119
ACTIVE COMMUNITY SYSTEM

Program Code: 100 Primary Service Area Type Code: 03 Ownership: V (CITY or VILLAGE)

System Locality: FORT EDWARD (T) Gazatteer Code: 5724 System Zip: 12828-

---

Service Connections: 1126 Retail Population: 3500 SNC: NO

System Production Capacity: 280000 (gallons/day)

Average Daily Consumption: 700000 (gallons)

Distribution Storage Cap.: 0 (gallons) Type:

System Begin Date: 03/78 (yy/mm) System Deactivation Date: / (yy/mm)

For Seasonal Supplies: Begin Date: / (mm/dd) End Date: / (mm/dd)

Percent Metered: Residential: 075(%) Commercial: 100(%) Industrial: 100(%)

Date of Last Visit: 01/01/00 Staff:

Last Sanitary Survey: 01/01/00 Staff:

Data Validation or Inspection Date (this form): __ / __ / __ by: _____

NOTES / COMMENTS

Source/Treatment Information for: FORT EDWARD VILLAGE
PWS ID: 5700119

SOURCE TYPE	ID	AVAIL.	CODE	NAME	PRODUCTION CAPACITY	NEXT ID	ENTRY POINT
SOURCE	001	SEASNL	G	WELL #1	7337 GAL	001	Y
Active, Req Wav, Treatment: N 000 No Treatment at Source Not Applicable							
SOURCE	002	SEASNL	G	WELL #2	7337 GAL	002	Y
Active, Req Wav, Treatment: N 000 No Treatment at Source Not Applicable							
SOURCE	003	PERM	S	REARDON BROOK	500000 GAL	003	Y
Active, Req Wav, Treatment: N 000 No Treatment at Source Not Applicable							
SOURCE	004	PERM	S	DORITY RESERVOIR	0	004	Y
Active, Req Wav, Treatment: N 000 No Treatment at Source Not Applicable							
PLANT	005	PERM	T	RESERVOIR ROAD WATER TREATMENT PLA	0	005	Y
Active, Req Yes, Treatment: P 345 Particulate Removal Filtration, Rapid Sand							
Active, Req ? , Treatment: D 423 Disinfection Hypochlorination, Pre							

NYSDOH GLENS FALLS DISTRICT OFFICE - PUBLIC WATER SUPPLIES
WATER SUPPLY DATA VALIDATION / SANITARY SURVEY

System Name: QUEENSBURY COUNTRY CLUB PWS ID: 5606473
ACTIVE NON-COMMUNITY SYSTEM

Program Code: 160 Primary Service Area Type Code: 31 Ownership: P (PRIVATE)

System Locality: QUEENSBURY (T) Gazatteer Code: 5657 System Zip: 12804-

---

Service Connections: 1 Retail Population: 25 SNC: NO

System Production Capacity: 0 (gallons/day)

Average Daily Consumption: 0 (gallons)

Distribution Storage Cap.: 0 (gallons) Type:

System Begin Date: 00/00 (yy/mm) System Deactivation Date: / (yy/mm)

For Seasonal Supplies: Begin Date: 04/01 (mm/dd) End Date: 11/30 (mm/dd)

Percent Metered: Residential: 000(%) Commercial: 000(%) Industrial: 000(%)

Date of Last Visit: 08/09/95 Staff: AMY KIM

Last Sanitary Survey: 08/09/95 Staff: AMY KIM

Data Validation or Inspection Date (this form): ___ / ___ / ___ by: _____

NOTES / COMMENTS

EBASCO SERVICES, INC.

CONTROL NO.:	DATE:	TIME:
8310-0076-—-500[illegible]	11/29/95	11:15

DISTRIBUTION:

BETWEEN:	OF:	PHONE:
Glen Bruso	DOH	(518) 793-3843

AND: Dennis Plante

DISCUSSION:

South Glens Falls Village ⇒ # of
of Residences on water supply

ACTION ITEMS:

GB ⇒ 3,700 on DOH files for
South Glens Falls Village water
supply wells.

REFERENCE NO. 21

EBASCO SERVICES, INC.

CONTROL NO.:	DATE:	TIME:
4310-0075 — 5006	9/6/95	14:15

DISTRIBUTION:

BETWEEN: DOH Glen Bruso	OF: DOH	PHONE: (518) 793-3893

AND: Dennis Place

DISCUSSION:

ACTION ITEMS:

1) Files? ⇒ GB — mostly in my head
DP — can I schedule an appointment w/ you. GB — yes
DP — I will call Monday to confirm Friday appointment

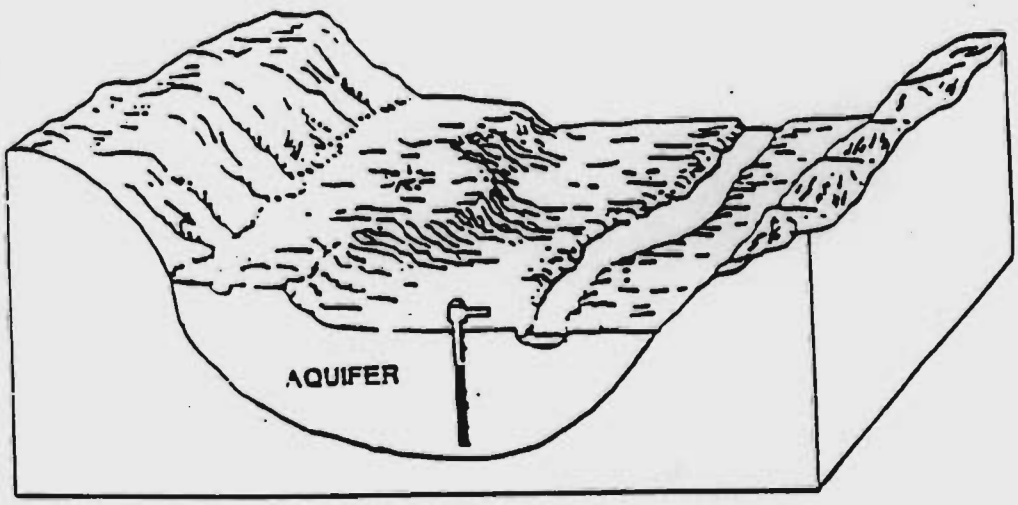
2) Wellhead Protection
No Formal wellhead protection areas exist.

3) Town of Queensbury gets its water From the Hudson River and the Town of Glens Falls gets its water From upland Resovirs.

REFERENCE NO. 22

Department of Environmental Conservation

NEW YORK STATE WELLHEAD PROTECTION PROGRAM



Submittal
to
United States Environmental Protection Agency

New York State Department of Environmental Conservation
MARIO M. CUOMO, *Governor* THOMAS C. JORLING, *Commissioner*

September 1990

NEW YORK STATE
WELLHEAD PROTECTION PROGRAM

SUBMITTAL
TO
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
IN
APPLICATION FOR IMPLEMENTATION FUNDS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
ALBANY, NY

SEPTEMBER 1990

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PREFACE

This report represents a revision of the Proposed New York State Wellhead Protection Program, submitted to the U.S. Environmental Protection Agency on June 19, 1989. Following the June 1989 submittal, there was an additional review by the New York State Wellhead Protection Advisory Committee (see ACKNOWLEDGEMENTS) and by key program managers and regional staff of the NYS Department of Environmental Conservation. The initial comments of the USEPA concerning the submittal were received by New York in January 1990. In March 1990, the USEPA, in accordance with the provisions of the Safe Drinking Water Act amendments, notified the state that the submittal was incomplete. A public hearing was held in August, 1990 to complete the process. Comments received were used in revising this document, and are also discussed in an attachment to this Submittal. The revisions contained in this document primarily include many clarifications of statements made in the original document, but also include additional items to complete the orginal submittal (e.g., public participation summary) and items to address the adequacy concerns of USEPA.

The wellhead protection activities of the Department of Environmental Conservation in the intervening period have included further development of new source management programs (e.g., chemical bulk storage), incorporation of wellhead protection in existing programs (e.g., water supply permit program), assistance to regional planning agencies in wellhead protection activities (e.g., 205(j) projects on source identification), regional and statewide outreach and education efforts, and providing geologic information and unconsolidated aquifer delineation information.

Most importantly, the interest of county agencies and municipal governments in New York in wellhead protection has grown considerably since the June 1989 submittal, with significant activity by key counties and municipalities in Upstate New York, by the Long Island Regional Planning Board concerning Long Island's Special Groundwater Protection Areas, and by Long Island's major water suppliers. Substantial interest in training (including delineation models and management tools), and in developing protection ordinances has been expressed.

Agencies and local government associations apart from the Department of Environmental Conservation have initiated public discussion and training activities concerning wellhead protection and groundwater management.

These activities demonstrate the desired evolution of local wellhead protection programs that the New York State Wellhead Protection Program is designed to foster.

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ACKNOWLEDGEMENTS

The New York State Department of Environmental Conservation gratefully acknowledges the assistance and recommendations of the members of the Wellhead Protection Advisory Committee. To date, these members have included the following:

- Aldo Andreoli, Suffolk County Dept. of Health Services
- Donald Beavers, Temporary Commission on Tug Hill
- Donald Bingham, U.S. Geological Survey
- Jessica Bretten, Herkimer-Oneida Planning Dept.
- James Coon, NYS Dept. of State;
- Robert Denz, Broome County Health Dept
- Hope Donovan, League of Women Voters
- John Edwards, Long Island Water Conference
- James Feuss, Cortland Co. Dept. of Health
- Robert Fickies, NYS Geological Survey
- William Golinitz, Chautauqua Co. Health Dept.
- Bernard Gorman, Long Island Water Conference
- Nancy Jarvis, Cortland Co. Planning Dept.
- Richard Kasprowicz, NYS Dept. of Health
- Margaret Kavanaugh, Schenectady Co. Planning Dept.
- John Kent, Herkimer-Oneida Planning Dept.
- William Lee, American Water Resources Association
- Sarah Meyland, Suffolk Co. Water Authority
- Todd Miller, U.S. Geological Survey
- Jacqueline Moody, NYS Dept. of Agriculture & Markets
- James Napoli, Dutchess Co. Health Dept.
- Donald O'Dell, NYS Dept. of State
- Francis Padar, Nassau Co. Dept. of Health
- Kenneth Pokalsky, Business Council of NYS
- Keith Porter, NYS Water Resources Institute-Cornell University
- George Proios, NYS Legislative Comm. on Water Resource Needs of L.I.
- Thomas Reamon, NYS Dept. of Health
- Joseph Salvato, American Water Works Association
- Ronald Slotkin, Broome Co. Health Dept.
- David Stern, NYS Legislative Comm. on Water Resource Needs of L.I.
- John Stonebanks, Suffolk Co. Water Authority
- Edith Tannenbaum, Long Island Regional Planning Board
- Mark Walker, NYS Water Resources Institute-Cornell University
- Patricia Walsh, Association of Towns of the State of New York
- John Williams, U.S. Geological Survey
- Donald Zizzi, Schenectady Co. Planning Dept

The original submittal (June 19, 1989) was prepared by Allan Tedrow, Kevin Roberts and James Lister of the NYS Department of Environmental Conservation, Division of Water, Groundwater Management Section. The revised document (September, 1990) was prepared by Kevin Roberts and Allan Tedrow.

The typing of this document by Barbara J. Crier, of the Department of Environmental Conservation, is also gratefully acknowledged.

CHAPTER 3

WELLHEAD PROTECTION AREA DELINEATION

3.1. Introduction and Institutional Processes

3.1.1. Introduction

The comprehensive New York State Groundwater Management Program, developed in the early 1980's and published in revised and final documents in 1986 (for Long Island) and 1987 (for Upstate), recommended key policies and program initiatives endorsing geographic targeting and critical area protection. These concepts were forerunners of the Safe Drinking Water Act's Wellhead Protection Program. Significant progress has been made in different aspects of geographic targeting of programs and in different parts of New York State. New York acknowledges these accomplishments as an integral part of its overall Wellhead Protection Program.

Delineation determines geographic areas for which different levels of groundwater protection activities are to be instituted. The Wellhead Protection Program in New York State is intended to accomplish a wider recognition of targeting objectives by all levels of government, by citizens in general, and to begin an evolutionary process toward improved targeting and protective program implementation.

The basic wellhead protection delineation approach in New York State recognizes aquifers as the fundamental geographic unit for targeting management efforts. This approach must be modified where aquifers are broad regional systems (DEC considers this case to occur only on Long Island), or where aquifers are not well characterized (considered to be the case for bedrock aquifers, in general). Elsewhere, the unconsolidated aquifers of New York tend to be of limited areal extent and they generally include the important recharge areas within their boundaries. These unconsolidated aquifers also are the source of the large majority of groundwater-derived public water supply systems.

The New York State Wellhead Protection Program proposes that unconsolidated aquifer boundaries (the land surface overlying the aquifer) serve as the baseline definition for the overall wellhead protection area (WHPA). For the baseline definition, both confined and unconfined unconsolidated aquifers are grouped together. Revisions are allowable based on site-specific evaluations. This aquifer boundary approach is proposed to be modified on Long Island and for wells in bedrock aquifers as described in Section 3.2. For all public water supply wells, specific proposed WHPA delineation policies are described in Section 3.2.

The aquifer boundary approach for the overall WHPA has several distinct advantages. It takes advantage of considerable recent and ongoing work in mapping and detailed assessments of aquifer boundaries. Incorporating this work directly into the Wellhead Protection Program provides a practical way for more effective targeting to move forward rapidly rather than being constrained by the need to perform modeling to delineate protection areas.

The aquifer approach also encompasses other non-public wells and potential future well sites, and places major focus on the high-yielding groundwater resources which are most important and most vulnerable. This last aspect is considered very important in the education component of wellhead protection, both for local officials and for the general public.

Wellhead protection area delineation is an evolutionary process. The first need for refinement is the further subdivision of the total wellhead protection area, as required for differentiated management objectives. A second area for potential refinement is delineation of the overall WHPA in the Glacial Aquifer on Long Island and in bedrock aquifers. Issues related to these topics are reviewed in both Sections 3.2 and 3.3. Flexibility for refinement or revision is very important due to the wide variability in

hydrogeologic settings, data availability, and local degree of contamination threat in New York State.

3.1.2. Institutional Processes for Overall Delineation Policies

Advisory committee and work group input into the original comprehensive Groundwater Management Program was substantial. The basic concept of geographic targeting was set forth in that program. The groups included:

- Federal Agencies (EPA, USGS)
- State Agencies (DEC, DOH, DOT, Agriculture & Markets, Energy Office, Geological Survey)
- Cornell University
- County Agencies (Health, Planning)
- Associations (Conference of Mayors, American Water Works Association, Business Council)
- Citizen Groups (NRDC, League of Women Voters)

DEC reconvened most of the original contributors into an advisory committee to assist in guiding the Wellhead Protection Program, with particular emphasis on delineation issues. Added to the original group have been:

- State Agencies (Department of State)
- County Agencies (a wider range of county participants)
- Regional Agencies and Commissions (additional planning and legislative commissions)
- Associations (Association of Towns, American Water Resources Association)

The new group, the Wellhead Protection Advisory Committee, has also included additional participation from the U.S. Geological Survey and DEC geological staff.

The delineation approach proposed in this submittal was recommended by the DEC Groundwater Management Section (responsible for developing the program) and agreed to by the Wellhead Protection Advisory Committee (members listed in front of submittal). The delineation approach directly conforms with the policies in the formally adopted Upstate New York Groundwater Management Program and Long Island Groundwater Management Program.

The DEC has also established a Memorandum of Understanding (MOU) with the DOH concerning the development of the Wellhead Protection Program. Additional MOU's will be developed as needed to institutionalize interagency working arrangements.

To support the technical needs of DEC and of local governments in carrying out and refining delineations, DEC plans to convene an ongoing Delineation Technical Workgroup consisting of geologists and groundwater management staff of DEC, DOH, State Geological Survey, USGS, and local governments. This group would consider revisions or improvements in the overall delineation approach, and would essentially be concerned with hydrogeologic aspects of the program rather than administration or contamination source control. The mission of this group is to provide recommendations to the DEC staff responsible for the overall Wellhead Protection Program. It will be convened upon EPA approval of New York State's submittal and will meet on at least a semi-annual basis or as needed.

Local authorities involved in wellhead protection may vary, as discussed elsewhere in this submittal. Therefore, uniform institutional processes at the local level will not be proposed across the entire state. Local agencies may act according to their own needs and authority. However, in all cases where Watershed Rules and Regulations are utilized as the local wellhead protection approach, the existing requirements of the New York State Department of Health (DOH) will be followed. Similarly, for all new wells, the institutional requirements of the New York State Department of Environmental Conservation's (DEC) Water Supply Permit Program will apply.

The proposed responsibility for initiating refinements of the baseline delineations described in this submittal will depend upon the regulatory approach adopted. Delineation refinements to be incorporated in Watershed Rules and Regulations approaches will be initiated and performed by water purveyors. Delineation refinements to be incorporated in county, town, village or city ordinances (including local public health ordinances) will be initiated and performed by the corresponding political authority. Delineation refinements to be incorporated in state-level regulatory programs will be performed by DEC.

In practice, most local activities will involve coordination with the State DEC and DOH. Each Department routinely reviews local activities to ensure that there are no conflicts with respect to policies and procedures and advises on the availability of technical information for delineation purposes. The overall coordination for aspects specifically related to the WHPP is the responsibility of DEC.

Other institutions, particularly the U.S. Geological Survey and Cornell and other universities, may be involved in special projects or case studies, as coordinated by DEC.

3.2. Delineation Criteria, Thresholds and Methods

3.2.1. Background - Existing Geographic Targeting

The existing, and still evolving, geographic targeting framework for groundwater protection provides a priority system for managing risks to groundwater. Following is a brief summary:

- Groundwater Classification - 6 NYCRR Part 703

Ambient water quality standards and guidelines apply to all Class GA (fresh) groundwaters. Class GA groundwaters are defined as having best use as a source of drinking water and must meet New York State's drinking water standards in addition to the ambient standards. State management programs use this framework for protection of all fresh groundwaters in New York State.

- Unconsolidated Aquifers

Mapping of unconsolidated aquifers has progressed significantly including State-defined primary and principal aquifers which are subsets of the unconsolidated aquifers. Site-specific detailed mapping is still in progress.

Primary and principal aquifers are generally similar geologically (both are highly productive unconsolidated deposits); primary aquifers are those which have large populations using them as drinking water sources. Primary aquifers have high priority for mapping additional hydrogeologic data through the DEC/USGS cooperative program, and in special Long Island programs.

These delineations are used in the process for siting new waste disposal facilities.

- Long Island Hydrogeologic Zones

Eight hydrogeologic zones have been delineated, covering all of Long Island. Three of these together comprise the Deep Flow Recharge Area. Management program initiatives (e.g., hazardous substance storage) are based on this Deep Flow Recharge Area.

- Special Groundwater Protection Areas

Nine Special Groundwater Protection Areas have been delineated within the Deep Flow Recharge Area in both Nassau and Suffolk Counties and are currently the subject of a planning project by the Long Island Regional Planning Board.

- Other Geographic Targeting Approaches

Suffolk County has specifically defined "Water Supply Sensitive Areas" which include zones 500 feet downgradient to 1,500

:et updradient of public wells in the Upper Glacial Aquifer.

Watersned Rules and Regulations are promulgated by the NYS Department of Health upon initiation by local water purveyors. These include delineations of protection management zones for public water supply wells. The WRR delineations do not conflict with the wellhead protection area delineation policies proposed in this submittal.

The NYS Solid Waste Management Program, in 6 NYCRR Part 360, has defined "public water supply wellhead area" as the surface and subsurface area between a public water supply well or wellfield and the 99% theoretical maximum extent of the stabilized cone of depression of that well or wellfield considering all flow system boundaries and seasonal fluctuations. New landfills are banned in these areas, in addition to all primary and principal aquifers in the Upstate area. Special provisions are defined in law for Long Island siting. As with the Watershed Rules and Regulations, there is no conflict in terminology between the Part 360 public water supply wellhead area and the overall wellhead protection area proposed in this submittal. The overall protection area includes, and is larger than, the Part 360 wellhead itself. For landfill siting, Part 360 regulations will prevail. Part 360 determinations are made only for proposed landfill siting cases.

Other setback requirements have been utilized in various state or local management programs. When used, such as for pesticides (e.g., aldicarb) or septic tanks, the setbacks apply to all wells, public or private. As with the other targeting approaches, such setbacks do not conflict with the proposed wellhead protection area policies.

- Well Construction Specifications

Direct protection of the wellhead itself is achieved through adoption of construction specifications and standards. These are administered by the New York State Department of Health and follow the "Recommended Standards for Water Works" (NYS Health Department Bulletin #42, 1982). They apply to public water supply wells.

3.2.2. Wellhead Protection Area Delineation Objectives

The USEPA guidance for development of wellhead protection programs (Guidance for Applicants for State Wellhead Protection Program Assistance Funds under the Safe Drinking Water Act, EPA 440/6-87-011) contains the expectation that proposed programs will be designed to provide protection from three types of threats: direct introduction of contaminants in the immediate well area, microbial contaminants, and chemical contaminants. The first is dealt with through well construction and completion standards to be applied at the wellhead itself. The second is managed by delineating a zone to keep potential sources sufficiently distant from the well to allow die-off of the microorganisms. Establishing a minimum distance by measurement or by time-of-travel is the most common procedure for delineating areas for protection against microbial contamination.

To achieve protection against chemical contamination, EPA suggests three delineation approaches: delineation of wellfield management areas, contamination attenuation zones, or remedial action zones. Since chemicals can travel long distances, all or part of the recharge area for a well becomes the zone to be delineated for protection efforts.

The overall goals of New York State's delineation approach are essentially a combination of the wellfield management and remedial action zone goals described by EPA.

Wellfield management is used to define areas where heightened levels of protection will be

emphasized. A number of different zones may be delineated for a single water supply to provide different levels of management. The management options may range from selected land use prohibitions to specialized design specifications, enhanced facility inspections, or increased monitoring and education.

The remedial action area approach excludes high risk activities from a specifically defined zone but still allows them in more distant recharge areas. This may be refined by varying exclusions in different zones according to risk or the importance of the activity. The remedial action area concept is best applied to new or changing land uses, whereas wellfield management may be applied to existing or new land uses.

The contamination attenuation zone approach described by EPA is difficult to strictly apply due to limited capabilities to accurately predict chemical migration and persistence. In addition, the New York State groundwater standards apply to all fresh groundwaters, reducing the utility of an attenuation zone approach.

3.2.3. Delineation Policy

The underlying objective of delineation is to use different degrees of management to control risks to water supplies. The significant diversity in geological conditions, aquifer use, and in local government capabilities across New York State indicates that the approach to delineation can not be uniform and rigid for all locations.

The ideal technical goal of wellhead delineation is to have sufficient knowledge of the hydrogeology of each public water supply well or wellfield to allow precise determination of the catchment area along with accurate times-of-travel for the entire flow system. Such information is not uniformly available across the state. New information will become available unevenly as funding from various local, state and federal sources is applied to specific priority areas.

In this setting, the New York State Wellhead Protection Program proposes general recognition of high-yielding aquifers (both confined and unconfined) as the fundamental wellhead protection area units. As described in Section 3.2.4., this policy recognizes that more targeted delineations will be necessary on Long Island because it is entirely an aquifer. Also, bedrock aquifers are not adequately characterized now to allow this approach; however, most of the major, high-yielding aquifers in New York are in unconsolidated deposits. Within the wellhead protection area, delineation of an area designated as the remedial action area is proposed, as described in Sectin 3.2.5.

This policy is intended to reinforce public and management program recognition of the need to protect high-yielding aquifers. It takes advantage of considerable past and ongoing work on aquifer mapping and delineation and will permit further progress in communities which have already delineated aquifer boundaries and protection areas. These communities may directly proceed to management implementation or may utilize available funds on more advanced hydrogeologic evaluations within the WHPA, depending on local needs and goals.

Within this framework, utilization of alternative delineation approaches (such as time-of-travel) is allowed and encouraged. In most cases, such alternative approaches would be applied to subdividing the WHPA within the unconsolidated aquifer boundaries for applying different levels of management. The WHPA itself would remain the area defined by aquifer boundaries. In some cases, such as for bedrock aquifers, the alternative approaches may be used to redefine the WHPA itself. The Department of Environmental Conservation will be responsible for providing guidance for such alternative approaches.

3.2.4. Wellhead Protection Area Delineations

The wellhead protection area delineation approach is summarized in Table 3.1. It recognizes that the aquifer system on Long Island and bedrock aquifers in Upstate New York must be treated differently than the unconsolidated aquifers in Upstate. The unconsolidated aquifer boundaries for the wellhead protection areas are those delineated on a series of maps titled

TABLE 3.1.
WELLHEAD PROTECTION AREA
DELINEATION SUMMARY

Geographic Region	Aquifer Area	Wellhead Protection Area Baseline Delineation
Long Island	Magothy & Lloyd Aquifers	Deep Flow Recharge Area
	Glacial Aquifer	Simplified Variable Shape: 1,500 ft. radius upgradient 500 ft. radius downgradient
Upstate	Unconsolidated Aquifers	Aquifer Boundaries (land surface)
	Bedrock Aquifers	Fixed Radius: 1,500 ft. radius

"Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York" by the U.S. Geological Survey. Specifically, these maps, distributed for sale by the U.S. Geological Survey, are as follows:

1. Bugliosi, E.F., et al., 1988. Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York - Lower Hudson Sheet. Water Resources Investigations Report 87-4274. U.S. Department of the Interior, Geological Survey, Albany, NY.

2. Bugliosi, E.F., et al., 1988. Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York - Hudson Mohawk Sheet. Water Resources Investigations Report 87-4275, U.S. Department of the Interior, Geological Survey, Albany, NY.

3. Bugliosi, E.F., et al., 1988. Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York - Adirondack Sheet. Water Resources Investigations Report 87-4276, U.S. Department of the Interior, Geological Survey, Albany, NY.

4. Miller, T.S., 1988. Unconsolidated Aquifers in Upstate New York - Finger Lakes Sheet. Water Resources Investigations Report 87-4122. U.S. Department of the Interior, Geological Survey, Albany, NY.

5. Miller, T.S., 1988. Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York - Niagara Sheet. Water Resources Investigations Report 88-4076. U.S. Department of the Interior, Geological Survey, Albany, NY.

The boundaries illustrated on these maps serve as the total wellhead protection areas for public water supplies utilizing those aquifers. In certain cases, more detailed aquifer boundary maps or determinations for primary or principal aquifers (subsets of the full range of unconsolidated aquifers) have been or will be made by the U.S. Geological Survey or NYS Department of Environmental Conservation. These more detailed boundary determinations will generally supersede boundaries illustrated on the above referenced maps as "revised" delineations of wellhead protection areas.

Both unconfined and confined unconsolidated aquifers are included on these maps and both are included in this definition of the overall wellhead protection area.

For all public water supplies utilizing groundwater, the overall wellhead protection area (WHPA) delineation will be subdivided into two parts. The innermost zone is referred to as the Remedial Action Area. The remainder of the WHPA is referred to as the Wellfield Management Area. The terminology is derived from the EPA guidance referenced earlier. Depending on local management objectives for groundwater protection, local hydrogeology, and data availability and resource availability, the Wellfield Management Area may be further subdivided. This further subdivision of the Wellfield Management Area would be considered a refinement of the "baseline" delineation. Methodologies, criteria and thresholds used for such revisions are flexible. Approaches proposed by local water purveyors will be evaluated and approved or disapproved upon submittal to the New York State Department of Environmental Conservation.

The term "baseline" delineation, as used in this submittal, is intended to represent the initial WHPA delineation advocated by the Department of Environmental Conservation. The delineation may be directly utilized in implementing management activities for groundwater protection. However, if site-specific conditions suggest that alternative delineations are appropriate (including the further subdivision of the Wellfield Management Area already cited), those delineations may be accepted by the Department of Environmental Conservation. The evolution of improved delineation techniques, the growing availability of hydrogeologic information, and the longer-term enhancements of groundwater protection programs may lead to a redefinition of the baseline delineations by the Department of Environmental Conservation.

These baseline delineations apply to public water supply wells. Applicants for new public water supply wells may be required to perform

2. Rationale:

Fixed-shape zones are not based on calculated time-of-travel or drawdown. The proposed definition is consistent with Water Supply Sensitive Areas already delineated by Suffolk County (which contains nearly all of the Glacial wells on Long Island) and for which enhanced protection programs have already been implemented in the Suffolk County Sanitary Code. Approximately half of the Glacial wells are within the Deep Flow Recharge Area and are thus protected within a larger overall WHPA. Significant expansion of the WHPA for all Glacial wells may not provide any reasonable geographic targeting benefits, as most of the WHPA's would intersect or nearly intersect. All fresh groundwaters in the Glacial aquifer are already covered by substantial protection programs which utilize a rigorous set of ambient water quality standards.

3. Mapping and Case Studies:

Mapping of the WHPA's for Glacial wells in Suffolk County has been completed through the Water Supply Sensitive Area delineations. For the relatively few Glacial wells in Nassau County, mapping will be completed according to the phasing priorities described in Section 3.3. Case studies of fixed-shape delineations are not considered to be of significant benefit. As proposals for revisions based on alternative approaches are submitted to the Department of Environmental Conservation, they will be evaluated for potential use as models for other Glacial well delineations.

4. Public Water Supply Significance:

As stated previously, approximately one-fourth of the public water supplies in Suffolk County are based in Glacial wells that are outside of the Deep Flow Recharge Area. If Nassau County is included, only about one-eighth of the water supply dependency is from Glacial wells outside of the Deep Flow Recharge Area.

3.2.5. Remedial Action Areas

For all community public water supply wells, regardless of setting, a remedial action area will be delineated within the WHPA. For those supply wells, the proposed baseline delineation of this area will be a fixed radius zone of 200 feet radius from the well. Revisions may be made after evaluation by the Department of Environmental Conservation. For non-community public water supply wells (e.g., isolated public buildings, etc.), the existing New York State Department of Health standards for well separations (e.g., from waste disposal facilities) are to be followed.

The rationale for this baseline delineation is based upon general observations in the past that such a zone has been adequate for protection against microbiological contamination. An alternative time-of-travel basis for delineating revised remedial action area boundaries would be to use a time-of-travel from a minimum of 60-days up to one year. The 60-day period has been used in New York State and in many European countries (USEPA, EPA 440/6-87-010, Guidelines for Delineation of Wellhead Protection Areas). A one-year period is considered conservative. In certain cases, the site-specific hydrogeology (e.g., confined aquifer conditions or long times-of-travel) and the nature of existing land uses and management options may allow remedial action areas smaller than 200 feet radius.

3.2.6. Potential Refinements and Summary

Table 3.1 summarizes the baseline delineations for wellhead protection areas.

Refinements may include:

- Subdivision of the Wellfield Management Area portion of the WHPA, to allow application of different levels of management within the WHPA.
- Revision of the Remedial Action Area portion of the WHPA, according to alternative methods, including time-of-travel or drawdown analysis.

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- Revised boundary determinations of the unconsolidated aquifers in Upstate, including primary and principal aquifers, or of the Deep Flow Recharge Area on Long Island.

- Alternative hydrogeologic determinations of appropriate WHPA's in bedrock aquifers or for wells in the Glacial aquifer on Long Island.

3.3. Phasing Considerations

The published unconsolidated aquifer maps cited in the previous section complete the baseline WHPA delineations for all public water supply wells within those aquifers. The completed delineation of the Deep Flow Recharge Area on Long Island has been defined according to road boundaries. That delineation defines the WHPA for all public water supply wells in the Magothy and Lloyd aquifers. The baseline WHPA boundaries for public water supply wells using the Glacial aquifer in Suffolk County have been determined by the Suffolk County Department of Health Services through its Water Supply Sensitive Area designations.

The remaining baseline WHPA boundary determinations that are needed consist of a relatively small set of Glacial aquifer wells and public water supply wells in bedrock aquifers. The phasing priorities for these groups are, in order:

1. Municipal community wells
2. Non-municipal community wells
3. Non-community public wells

Within each priority group additional phasing may be generally ordered by population dependency with modifications made if there are significant known or suspected threats to the wells.

It is emphasized that the baseline WHPA delineations for the very large majority of public water supply wells (by population served) are completed. The delineations for the remaining bedrock wells and Glacial wells will be performed as resources permit.

3.4. Summary

The baseline wellhead protection area delineations are considered to be completed through the published aquifer maps cited in this chapter. These cover both confined and unconfined aquifers and low- and high-yielding aquifers. The Deep Flow Recharge Area on Long Island has also been delineated. It is noted that the Deep Flow Recharge Area on Long Island also includes many wells using the shallow Glacial aquifer, and thus provides an added layer of protection.

Refinements (i.e., delineation of additional sub-zones of the overall WHPA) have been completed in many areas. However, such refinements are optional. Their evaluation and delineation will be a goal of future efforts in wellhead protection

50

2. Rationale:

Fixed-shape zones are not based on calculated time-of-travel or drawdown. The proposed definition is consistent with Water Supply Sensitive Areas already delineated by Suffolk County (which contains nearly all of the Glacial wells on Long Island) and for which enhanced protection programs have already been implemented in the Suffolk County Sanitary Code. Approximately half of the Glacial wells are within the Deep Flow Recharge Area and are thus protected within a larger overall WHPA. Significant expansion of the WHPA for all Glacial wells may not provide any reasonable geographic targeting benefits, as most of the WHPA's would intersect or nearly intersect. All fresh groundwaters in the Glacial aquifer are already covered by substantial protection programs which utilize a rigorous set of ambient water quality standards.

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ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-062

Date: June 18, 1992 Time: 9:28 AM [X] PM [ ]

Call

To: Kevin Roberts (518) 457-6674
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Affiliation: NYSDEC, Division of Water, Groundwater Management

Malcolm Pirnie Staff: Lisa Szegedi (609) 860-0100
Telephone No.

Summary of Conversation:

The September 1990 New York State Wellhead Protection Program document is a finalized document.

REFERENCE NO. 23

Department of Environmental Co

Division of Water

New York State Water Quality 1994

Submitted Pursuant to Section 305(b) of the Federal Clean Water Act

June 1994

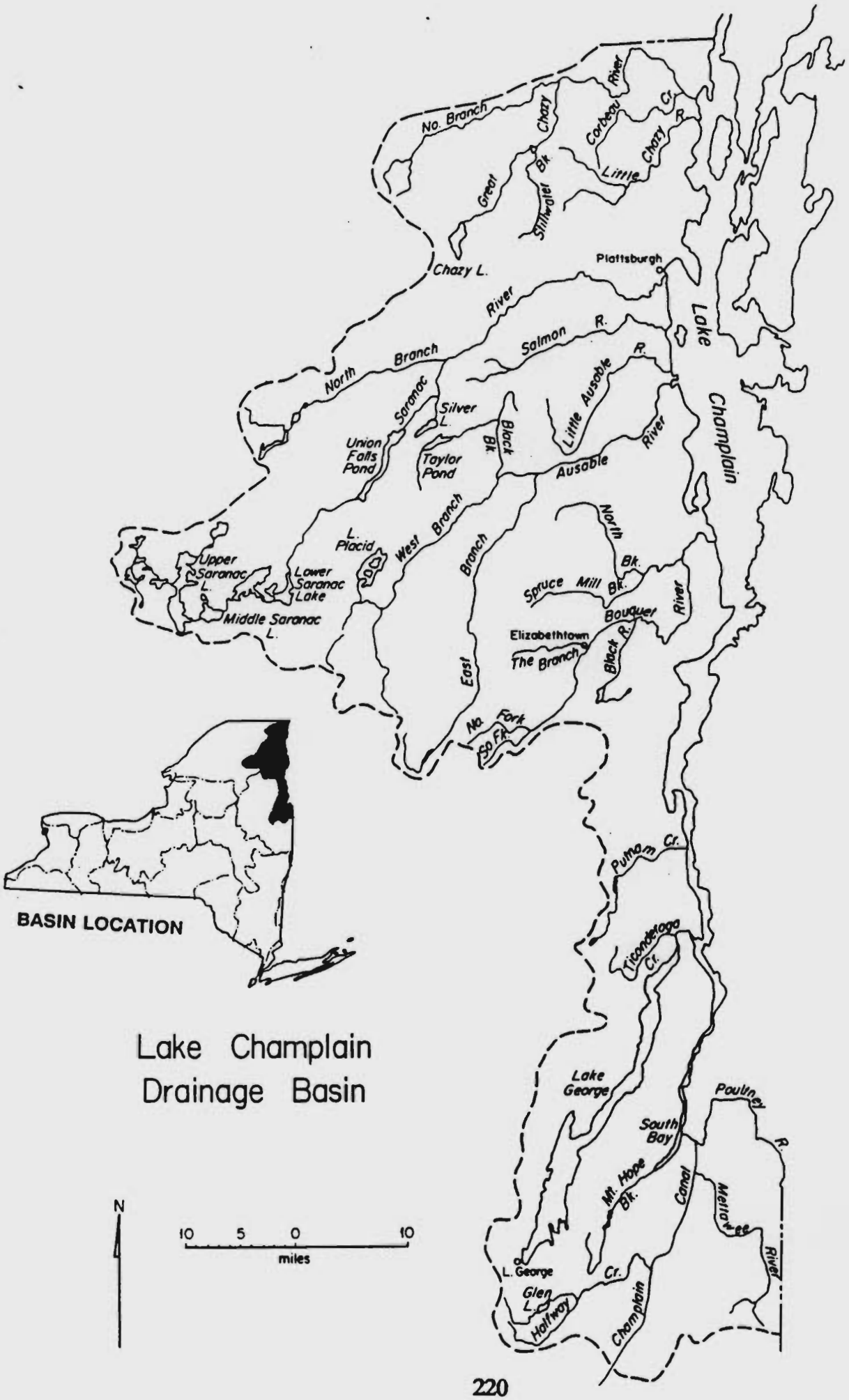
New York State Department of Environmental Conservation
MARIO M. CUOMO, *Governor* LANGDON MARSH, *Commissioner*

NEW YORK STATE WATER QUALITY 1994

Submitted Pursuant to
Section 305(b) of the
Federal Clean Water Act
Amendments of 1977 (PL 95-217)

Prepared by:

Quality Evaluation Section
Bureau of Monitoring & Assessment
Division of Water
New York State Department of Environmental Conservation
50 Wolf Road - Room 328
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No. Branch
Chazy
Corbeau
River
Cr.
R.
Little Chazy
Great
Bk.
Shiftwater
Chazy L.
Plattsburgh
River
Salmon R.
Lake
Champlain
North Branch
Saranac
Silver L.
Union Falls Pond
Taylor Pond
Black Bk.
Little Ausable R.
Ausable River
L. Placid
West Branch
Upper Saranac L.
Lower Saranac Lake
Middle Saranac L.
North Bk.
Spruce Mill Bk.
Bouquet River
Elizabethtown
The Branch
Black R.
East
No. Fork
So. Fk.
Putnam Cr.
Ticonderoga
Cr.
Lake George
South Bay
Poultney R.
Mt. Hope Bk.
Canal
Mettawee River
L. George
Cr.
Glen L.
Halfway
Champlain
N
10 5 0 10
miles
BASIN LOCATION
Lake Champlain
Drainage Basin

DRAINAGE BASIN 10

Lake Champlain

Background

The character of the Lake Champlain Basin ranges from the wilderness high peaks area of the Adirondack Mountains, to recreational lakes and rural-agricultural lowlands. The basin drains a total area of about 3,000 square miles and is populated by approximately 140,000 persons. Most of the population lives either in developed areas on Lake Champlain itself or near mountain lakes where the major economic activity is centered around recreational activities and forestry. Agriculture is predominant in the lowlands along Lake Champlain. There are about 1,800 miles of rivers and streams and 212 significant lakes, ponds and reservoirs in the basin.

Water Quality Issues and Concerns

With some exceptions, water quality is generally good to excellent throughout the basin. Lake Champlain proper is large and deep and for the most part is of excellent water quality. However, some shallow bays are subject to nutrient enrichment which causes eutrophic conditions that are primarily attributable to nonpoint source activities, including leaching from on-site disposal systems, and contaminated storm runoff. The waters of the southern portion of Lake Champlain below Crown Point are highly turbid. Rapid erosion, which is occurring on the Lake's shoreline, contributes to the turbidity, among other possible causes. Cumberland Bay receives the treated wastewater discharge from the City of Plattsburgh at the mouth of the Saranac River. Suspended and floating solids are no longer evident in the bay although a fish consumption advisory is in effect which recommends eating no more than one meal per month of brown bullhead and Amrican eel because of PCB contamination. Recent sediment sampling indicates that sediments in the bay contain PCB levels of concern. An advisory issued in 1987 for the entire Lake recommended that no more than one meal per month of lake trout be eaten, because of the discovery of high PCB and chlordane levels in samples of that species taken from Willsboro Bay.

Subsequent analysis of a large number of Lake Trout samples collected by NYSDEC and the Vermont Agency of Natural Resources showed that fish less than 25 inches long have an average PCB level considerably below FDA's 2 ppm limit, whereas the average for larger fish exceeds that limit. This led the Health Department to limit the advisory to only the larger fish. For the 1990-1991 fishing season, walleye greater than 19 inches long were added to the advisory to eat no more than one meal per month. A decrease occurred in the PCB levels in American eels taken within the portion of Lake Champlain near Plattsburgh bounded by Cumberland Head and Valcour Island. This led to a change in the advisory for this species from "eat none" to "eat no more than one meal per month."

In 1991, a Lake Champlain Management Conference was convened by the U.S. Environmental protection Agency (EPA) pursuant to the federal Lake Champlain Designation Act which was signed into law in 1990. The act requires the development of a pollution prevention, control, and restoration plan for the lake. The planning process which emerged from the conference is called the Lake Champlain Basin Program. Key elements of the program include research and monitoring, project administration, project planning and demonstration. Research and monitoring projects which are underway will focus primarily on nutrients and toxics. The three pollutants of major concern and their impacts on the lake are phosphorus (eutrophication) and PCB and mercury (fish and wildlife bioaccumulation).

Several other lakes have substantial numbers of year-round and seasonal homes and other development around their shorelines which effect water quality. Eighteen of the basins 212 lakes are listed on the Department's 1993 Priority Water Problem (PWP) List. The southern portion of Lake George is an example of an area where intense commercial and recreational development has a noticeable effect on water quality relative to the northern portion of the Lake which is less developed.

Small lakes which are situated at high elevations and have low buffering capacity are susceptible to low pH levels attributable to the acid precipitation phenomenon. Forty-four such lakes in this drainage basin have been identified with this problem. The low pH and extremely low alkalinity observed during routine monitoring of the Bouquet River at Keene also shows evidence that this problem may adversely affect some streams as well.

Agricultural run-off continues to cause water quality concerns in the Great Chazy and Little Chazy Rivers. Additionally, Regional Fisheries Staff are investigating the causes for a suppressed walleye fishery in the Great Chazy River.

A unique water quality problem found primarily in this basin is impairment of fish propagation in varying degrees thought to be caused by silt and sand in runoff following extensive winter road sanding. A number of streams in the Ausable-Bouquet Rivers, Saranac River and Lake George sub-basins have been so identified. In July 1989, a biological survey of the West Branch of the Ausable River from below Lake Placid to below Wilmington was conducted in an effort to determine the effects of road sanding on the macroinvertebrate communities in the stream. In all, eight sites in this 14 mile reach were sampled. No macroinvertebrate community impairment was found at any site, although sand was noted throughout the reach.

A complete inventory of all waters identified on the PWP List follows this summary.

Recent Water Quality Studies

Four locations (Richelieu River at Rouses Point, Saranac River at Plattsburgh, Bouquet River at Willsboro and Ticonderoga Creek at Ticonderoga) were sampled in this basin as

part of the Rotating Intensive Basin Studies program during 1987 and 1988. T most recently reported basin-wide survey results. The second basin-wide RIB being conducted during 1993 and 1994 in addition to monitoring being done by the Lake Champlain Basin Program.

The Richelieu River (outlet of Lake Champlain) at Rouses Point, Clinton County, was sampled from the shore at the Rouses Point Sportsman's Club pier in 1987. In 1988, this monitoring location was moved downstream a half mile to the old Route 2 bridge abutment. Overall water quality at this site was rated "fair", primarily due to the fish consumption advisory that is in effect for the lake. the macroinvertebrate community was determined to be non-impacted.

The Saranac River in Plattsburgh, Clinton County, was sampled at the Saranac Street bridge which is an abandoned roadway now used only by pedestrian traffic. This sampling location is approximately one mile upstream from the River's confluence with Cumberland Bay/Lake Champlain in the City of Plattsburgh. The overall water quality assessment assigned to this site was "good".

The Bouquet River in Willsboro, Essex County, was sampled at the Route 22 bridge. The sampling site is located in a non-industrialized area as much of this river flows through a recreational mountain region and rural agricultural farmlands. The overall water quality assessment was "good".

Ticonderoga Creek in Ticonderoga, Essex County, was sampled at the Elk Drive bridge just upstream from a newly retrofitted hydroelectric dam. The overall water quality assessment was "good".

Biological (macroinvertebrate) surveys of the Saranac River and Cumberland Bay were conducted in august of 1993. Five sites were on the Saranac River between the Village of Saranac Lake and Plattsburgh, a distance of approximately 55 miles. One site was on the north branch of the Saranac. Four sites were located in Cumberland Bay.

The survey found excellent water quality in the river from downstream of the Village of Bloomingdale to Plattsburgh, and in the north branch at Riverview. The first two sites in the upstream reach from Saranac Lake to Bloomingdale showed moderate and slight effects respectively, due to the outlet from Lake Flower and sluggish currents. These effects were attributed to plankton production in the lake and were not considered to be water quality impairments per se.

The Cumberland Bay survey found significant improvements in water quality since the last survey in 1986. Species richness and water clarity doubled at three of the four sites. One site still shows the effect of the discharge from the Plattsburgh municipal sewage treatment plant. A measurement of sediment toxicity using morphological deformities of midge larvae. Mouth parts of organisms with deformities showed a reduction from 67 percent to 33 percent since 1986.

Significant Water Quality Changes

A 0.3 miles reach of Palmer Brook in the hamlet of Ausable Forks was cited in the 1991 Priority Water Problem (PWP) List, as impaired for fishing because of raw sewage discharges into the stream from businesses and residences in the community. The two townships involved entered into a consent agreement with the Department. Construction grant program funding was obtained and a sewage collection and treatment system was designed and built. As a result, water quality has improved significantly, and the stream has been removed from the PWP List.

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SEGMENT NAME	SEG ID	COUNTY	SEGMENT TYPE	SEGMENT SIZE		CLASS	PRIMARY USE IMPAIRED	SEVERITY	PRIMARY POLLUTANT	PRIMARY SOURCE
DRAINAGE BASIN: Lake Champlain										
Sub-Basin: Lake Champlain Proper										
ALLENS BAY	1001-0007	Clinton	Lake	250.0	A	A	Water Supply	Threatened	Pathogens	On-site Systems
CLIFFHAVEN BEACH	1001-0009	Clinton	Lake	250.0	A	A	Water Supply	Stressed	Ammonia	Other Source
COMFORT BAY	1001-0018	Clinton	Lake	30.0	A	A	Bathing	Stressed	Silt (Sediment)	Construction
CUMBERLAND BAY	1001-0001	Clinton	Lake	100.0	A	B	Bathing	Precluded	Aesthetics	Source Unknown
DEAD CREEK	1001-0008	Clinton	River	1.5	Mi.	C	Aesthetics	Stressed	Silt (Sediment)	Agriculture
GREAT CHAZY RIVER	1002-0010	Clinton	River	7.0	Mi.	C	Fish Propagation	Impaired	Silt (Sediment)	Agriculture
KINGS BAY	1001-0006	Clinton	Lake	800.0	A	C	Boating	Stressed	Nutrients	On-site Systems
LAKE CHAMPLAIN	1001-0002	Clinton	Lake	96640.0	A	A	Fishing	Impaired	Priority Organics	Source Unknown
MILL BROOK	1001-0017	Essex	River	6.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
NORTHWEST BAY	1001-0016	Essex	Lake	30.0	A	A	Bathing	Precluded	Pathogens	On-site Systems
PORT DOUGLAS BAY	1001-0014	Essex	Lake	50.0	A	AA(T)	Water Supply	Threatened	Priority Organics	Chemical Leak/Spills
SALMON RIVER	1001-0010	Clinton	River	9.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
WHALLONS BAY	1001-0013	Essex	Lake	15.0	A	A	Bathing	Stressed	Pathogens	Other Source
WILLSBORO BAY	1001-0015	Essex	Lake	15.0	A	A	Boating	Stressed	Nutrients	On-site Systems
DRAINAGE BASIN: Lake Champlain										
Sub-Basin: Great Chazy River										
CHAZY LAKE	1002-0009	Clinton	Lake	1606.0	A	AA	Water Supply	Threatened	Nutrients	On-site Systems
FARREL BROOK	1002-0008	Clinton	River	2.9	Mi.	D>C	Fishing	Stressed	Aesthetics	Municipal
GREAT CHAZY RIVER	1002-0001	Clinton	River	13.0	Mi.	A	Water Supply	Impaired	Pathogens	Agriculture
GREAT CHAZY RIVER	1002-0004	Clinton	River	40.0	Mi.	C(T)	Bathing	Stressed	Nutrients	Agriculture
LITTLE CHAZY R.	1002-0003	Clinton	River	5.0	Mi.	C	Fish Survival	Impaired	Unknown Toxicity	Agriculture
MONTY BAY	1002-0007	Clinton	Lake	500.0	A	A	Water Supply	Stressed	Nutrients	Agriculture

(continued on next page...)

SEGMENT NAME	SEG ID	COUNTY	SEGMENT TYPE	SEGMENT SIZE		CLASS	PRIMARY USE IMPAIRED	SEVERITY	PRIMARY POLLUTANT	PRIMARY SOURCE
DRAINAGE BASIN: Lake Champlain										
Sub-Basin: Saranac River										
AMPHITH.P#2-131	1003-0018	Franklin	Lake	3.0	A	?	Fish Survival	Precluded	pH	Acid Rain
BARTLETT POND	1003-0012	Essex	Lake	3.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
BARTLETT POND	1003-0030	Essex	Lake	1.0	A	AA	Fish Survival	Precluded	pH	Acid Rain
BASS LAKE	1003-0011	Franklin	Lake	6.0	A	B	Bathing	Precluded	pH	Acid Rain
CATAMOUNT POND	1003-0002	Franklin	Lake	6.0	A	C(T)	Fish Propagation	Precluded	pH	Acid Rain
CONLEY LINE POND	1003-0003	Franklin	Lake	1.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
DOW POND	1003-0022	Franklin	Lake	1.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain
E. COPPERAS POND	1003-0004	Essex	Lake	10.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
LAKE FLOWER	1003-0046	Essex	Lake	20.0	A	A	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
LINDSEY POND	1003-0036	Essex	Lake	6.0	A	AA	Fish Survival	Precluded	pH	Acid Rain
LINE POND	1003-0025	Essex	Lake	5.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain
LITTLE ECHO POND	1003-0006	Franklin	Lake	2.0	A	FP	Fishing	Precluded	pH	Acid Rain
LITTLE EGG POND	1003-0031	Essex	Lake	1.0	A	AA	Fish Survival	Precluded	pH	Acid Rain
LITTLE NORTH WHEY	1003-0007	Franklin	Lake	3.0	A	FP	Fishing	Precluded	pH	Acid Rain
MARSH POND	1003-0020	Franklin	Lake	4.0	A	AA	Fish Survival	Precluded	pH	Acid Rain
MARSH POND	1003-0029	Essex	Lake	4.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain
MCCAFFERY POND	1003-0034	Essex	Lake	2.0	A	AA	Fish Survival	Precluded	pH	Acid Rain
MOUNTAIN POND	1003-0005	Franklin	Lake	6.0	A	C(T)	Fish Propagation	Precluded	pH	Acid Rain
MOUNTAIN POND	1003-0024	Essex	Lake	5.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain
N. BR. SARANAC R.	1003-0038	Franklin	River	4.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Construction
N. BR. SARANAC R.	1003-0041	Clinton	River	6.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
NORTH WHEY POND	1003-0013	Franklin	Lake	3.0	A	AA	Fish Propagation	Precluded	pH	Acid Rain
SARANAC RIVER	1003-0001	Clinton	River	2.0	Mi.	A	Water Supply	Impaired	Pathogens	On-site Systems
SARANAC RIVER	1003-0021	Clinton	River	1.2	Mi.	C(T)	Fish Propagation	Impaired	Water Level/Flow	Hydromodification
SARANAC RIVER	1003-0040	Clinton	River	20.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
SARANAC RIVER	1003-0044	Essex	River	6.0	Mi.	C	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
SARANAC RIVER	1003-0045	Essex	River	5.0	Mi.	C	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
SOCHIA POND	1003-0014	Franklin	Lake	4.0	A	AA(T)	Fish Propagation	Precluded	pH	Acid Rain
ST. GERMAIN POND	1003-0009	Franklin	Lake	13.0	A	AA	Fish Propagation	Precluded	pH	Acid Rain
SW AMPHITHEATRE P	1003-0015	Franklin	Lake	1.0	A	AA	Fish Propagation	Precluded	pH	Acid Rain
TWELFTH TEE POND	1003-0010	Franklin	Lake	5.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
UNNAMED P #2-036	1003-0073	Franklin	Lake	3.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain

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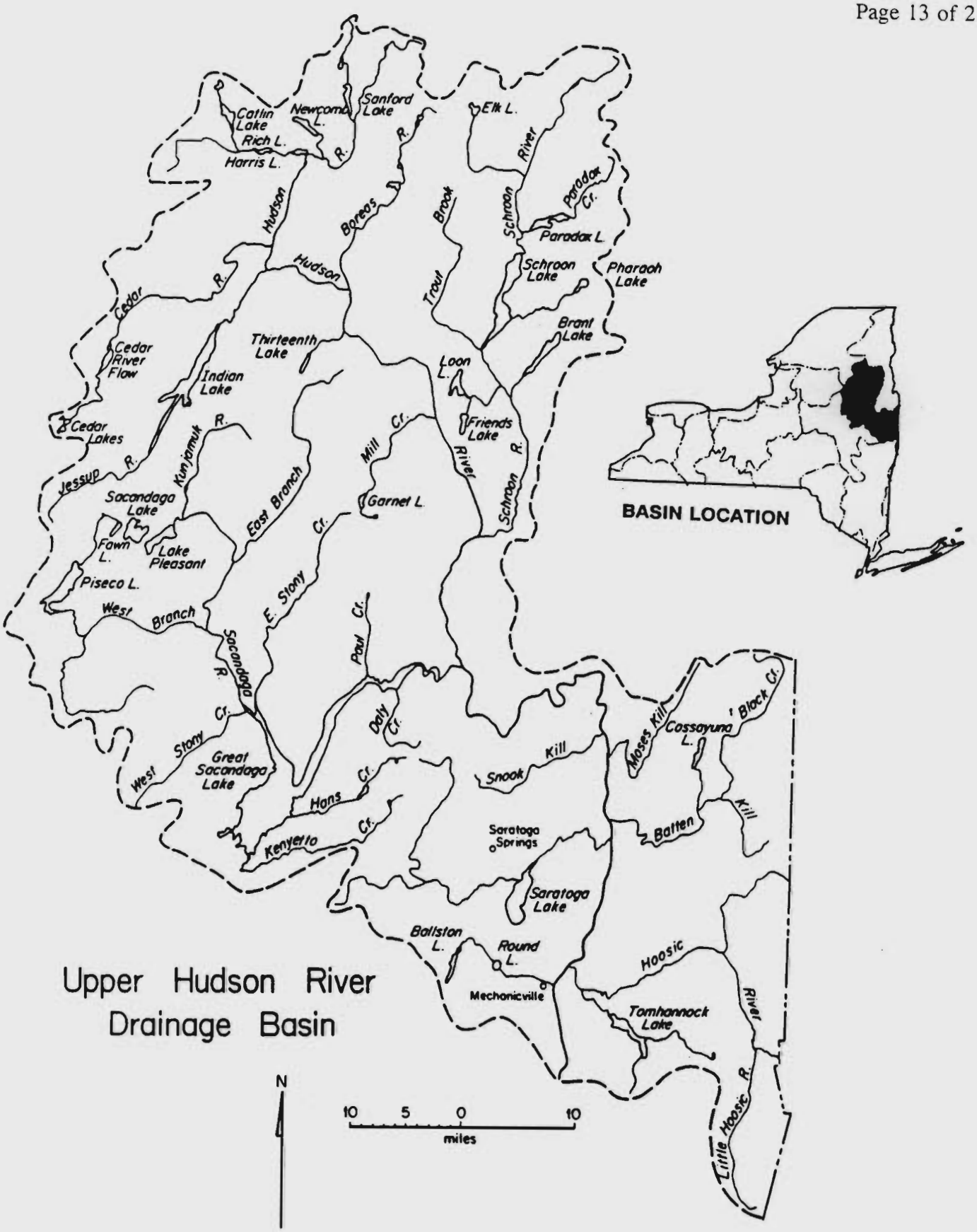
SEGMENT NAME	SEG ID	COUNTY	SEGMENT TYPE	SEGMENT SIZE		CLASS	PRIMARY USE IMPAIRED	SEVERITY	PRIMARY POLLUTANT	PRIMARY SOURCE
DRAINAGE BASIN: Lake Champlain										
. Sub-Basin: Saranac River										
UNNAMED P #2-067	1003-0026	Essex	Lake	2.0	A	B(T)	Fish Survival	Precluded	pH	Acid Rain
UNNAMED P #2-068	1003-0017	Franklin	Lake	3.0	A	B(T)	Fish Survival	Precluded	pH	Acid Rain
UNNAMED P #2-079	1003-0027	Essex	Lake	1.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain
UNNAMED P #2-080	1003-0028	Essex	Lake	2.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain
UNNAMED P #2-133	1003-0019	Franklin	Lake	2.0	A	?	Fish Survival	Precluded	pH	Acid Rain
UNNAMED P #2-166	1003-0032	Essex	Lake	2.0	A	AA	Fish Survival	Precluded	pH	Acid Rain
UNNAMED P #2-189	1003-0033	Essex	Lake	3.0	A	AA	Fish Survival	Precluded	pH	Acid Rain
UNNAMED P #2-196	1003-0035	Essex	Lake	1.0	A	AA	Fish Survival	Precluded	pH	Acid Rain
UPPER SARANAC LK.	1003-0048	Franklin	Lake	5056.0	A	AA	Fishing	Stressed	Oxygen Demand	Source Unknown
WEST POLLIWOG PD	1003-0016	Franklin	Lake	3.0	A	AA	Fish Propagation	Precluded	pH	Acid Rain
DRAINAGE BASIN: Lake Champlain										
Sub-Basin: Ausable-Bouquet River										
AUSABLE RIVER	1004-0015	Essex	River	3.0	Mi.	C(T)	Fish Survival	Impaired	Water Level/Flow	Hydromodification
AUSABLE RIVER	1004-0020	Clinton	River	1.0	Mi.	C	Fishing	Threatened	Aesthetics	Land Disposal
AUSABLE RIVER	1004-0022	Clinton	River	6.0	Mi.	C	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
AUSABLE RIVER WB	1004-0001	Essex	River	1.0	Mi.	C(T)	Fishing	Precluded	Aesthetics	On-site Systems
BOUQUET RIVER	1004-0002	Essex	River	15.0	Mi.	C(T)	Fish Propagation	Precluded	Silt (Sediment)	Agriculture
BOUQUET RIVER	1004-0025	Essex	River	0.3	Mi.	C(T)	Aesthetics	Stressed	Aesthetics	Other Source
BOUQUET RIVER	1004-0037	Essex	River	1.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
BOUQUET RIVER	1004-0039	Essex	River	4.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
BOUQUET RIVER	1004-0046	Essex	River	7.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
BULLET POND	1004-0017	Essex	Lake	1.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain
CASCADE BROOK	1004-0035	Essex	River	5.0	Mi.	AA(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
CHAPEL POND TRIB	1004-0012	Essex	River	0.3	Mi.	FP	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
CHAPEL POND TRIB	1004-0050	Essex	River	0.3	Mi.	FP	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
CHUBB RIVER	1004-0028	Essex	River	1.0	Mi.	C,C(T)	Fish Propagation	Stressed	Silt (Sediment)	Other Source
COLD BROOK	1004-0026	Essex	River	2.5	Mi.	B(T)	Aesthetics	Stressed	Silt (Sediment)	Urban Runoff
CRANBERRY POND	1004-0006	Essex	Lake	2.0	A	D	Fish Propagation	Precluded	pH	Acid Rain
E. BR. AUSABLE R.	1004-0014	Essex	River	24.0	Mi.	C(T)	Fish Propagation	Precluded	Silt (Sediment)	Deicing Agents
LINCOLN POND	1004-0024	Essex	Lake	720.0	A	B(T)	Bathing	Threatened	Nutrients	On-site Systems

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SEGMENT NAME	SEG ID	COUNTY	SEGMENT TYPE	SEGMENT SIZE		CLASS	PRIMARY USE IMPAIRED	SEVERITY	PRIMARY POLLUTANT	PRIMARY SOURCE
DRAINAGE BASIN: Lake Champlain										
Sub-Basin: Ausable-Bouquet River										
LITTLE AUSABLE R.	1004-0018	Clinton	River	3.0	Mi.	C	Aesthetics	Stressed	Pathogens	Municipal
LITTLE AUSABLE R.	1004-0021	Clinton	River	9.0	Mi.	A(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
LOST POND	1004-0007	Essex	Lake	3.0	A	AA(T)	Fish Propagation	Precluded	pH	Acid Rain
LOWER WALLFACE PD	1004-0004	Essex	Lake	6.0	A	FP	Fishing	Precluded	pH	Acid Rain
MUD POND	1004-0016	Essex	Lake	3.0	A	AA	Fish Survival	Precluded	pH	Acid Rain
N. BR. BOUQUET R.	1004-0036	Essex	River	5.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
PARADOX BAY	1004-0027	Essex	Lake	300.0	A	A	Boating	Stressed	Silt (Sediment)	Other Source
PHELPS BROOK	1004-0030	Essex	River	0.5	Mi.	AA(T)	Fish Propagation	Stressed	Silt (Sediment)	Silviculture
SCOTT POND	1004-0008	Essex	Lake	3.0	A	C(T)	Fish Propagation	Precluded	pH	Acid Rain
SILVER STREAM	1004-0019	Clinton	River	2.5	Mi.	C	Aesthetics	Stressed	Silt (Sediment)	Agriculture
THE BRANCH (BOQ.)	1004-0040	Essex	River	7.0	Mi.	AA(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
UNNAMED P #2-223	1004-0011	Essex	Lake	5.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain
UNNAMED P #2-263	1004-0009	Essex	Lake	2.0	A	C(T)	Fish Propagation	Precluded	pH	Acid Rain
UNNAMED P #2-269	1004-0010	Essex	Lake	2.0	A	AA(T)	Fish Propagation	Precluded	pH	Acid Rain
UPPER WALLFACE PD	1004-0005	Essex	Lake	13.0	A	FP	Fishing	Precluded	pH	Acid Rain
W. BR. AUSABLE R.	1004-0013	Essex	River	15.0	Mi.	C(T)	Fish Propagation	Impaired	Silt (Sediment)	Deicing Agents
W. BR. AUSABLE R.	1004-0042	Essex	River	2.0	Mi.	C(T)	Fish Propagation	Threatened	Silt (Sediment)	Deicing Agents
DRAINAGE BASIN: Lake Champlain										
Sub-Basin: Lake Champlain South										
BIG CREEK	1005-0004	Washington	River	9.0	Mi.	C(T)	Boating	Stressed	Silt (Sediment)	Agriculture
CEMETERY BROOK	1005-0008	Warren	River	1.0	Mi.	AA(T)	Fish Propagation	Threatened	Silt (Sediment)	Construction
→ CHAMPLAIN CANAL	1005-0015	Washington	River	11.3	Mi.	D>C	Fishing	Stressed	Aesthetics	Municipal
GLEN LAKE	1005-0009	Warren	Lake	325.0	A	B(T)	Bathing	Stressed	Nutrients	On-site Systems
→ HALFWAY CREEK	1005-0013	Washington	River	9.0	Mi.	AA(T)	Fish Propagation	Stressed	Thermal Changes	Urban Runoff
INDIAN RIVER	1005-0002	Washington	River	3.0	Mi.	C(T)	Fish Propagation	Impaired	Thermal Changes	Agriculture
METTAWEE RIVER	1005-0003	Washington	River	14.0	Mi.	C(T)	Fish Survival	Impaired	Thermal Changes	Agriculture
PUTNAM CREEK	1005-0010	Essex	River	1.5	Mi.	C(T)	Bathing	Stressed	Pathogens	On-site Systems
PUTNAM CREEK	1005-0011	Essex	River	4.5	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
SNAKE POND	1005-0001	Essex	Lake	4.0	A	C(T)	Fish Survival	Precluded	pH	Acid Rain

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SEGMENT NAME	SEG ID	COUNTY	SEGMENT TYPE	SEGMENT SIZE		CLASS	PRIMARY USE IMPAIRED	SEVERITY	PRIMARY POLLUTANT	PRIMARY SOURCE
DRAINAGE BASIN: Lake Champlain										
Sub-Basin: Lake George										
ENGLISH BROOK	1006-0007	Warren	River	5.0	Mi.	AA	Fish Propagation	Impaired	Silt (Sediment)	Deicing Agents
FINKLE BROOK	1006-0005	Warren	River	3.0	Mi.	AA	Fish Propagation	Impaired	Silt (Sediment)	Deicing Agents
HAGUE BROOK	1006-0006	Warren	River	5.0	Mi.	AA	Fish Propagation	Precluded	Silt (Sediment)	Deicing Agents
HALFWAY BROOK	1006-0001	Warren	River	3.0	Mi.	C(TS)	Fish Propagation	Precluded	Silt (Sediment)	Deicing Agents
HUDDLE BROOK	1006-0003	Warren	River	3.0	Mi.	AA	Fish Propagation	Impaired	Silt (Sediment)	Deicing Agents
INDIAN BROOK	1006-0002	Warren	River	6.0	Mi.	AA	Fish Propagation	Precluded	Silt (Sediment)	Deicing Agents
LAKE GEORGE	1006-0016	Warren	Lake	14000.0	A	A	Bathing	Stressed	Nutrients	Urban Runoff
SMITH BROOK	1006-0004	Warren	River	1.5	Mi.	AA	Fish Propagation	Impaired	Silt (Sediment)	Deicing Agents
WEST BROOK	1006-0008	Warren	River	2.0	Mi.	AA	Fish Propagation	Precluded	Silt (Sediment)	Deicing Agents


Catlin Lake
Rich L.
Harris L.
Newcomb L.
Sanford Lake
Elk L.
Hudson R.
Boreas R.
Brook Trout
Schroon River
Paradox Cr.
Paradox L.
Schroon Lake
Pharaoh Lake
Brant Lake
Loon L.
Thirteenth Lake
Indian Lake
Cedar River Flow
Cedar Lakes
Cedar R.
Jessup R.
Kunjamuk R.
Sacandaga Lake
Fawn L.
Lake Pleasant
Piseco L.
West Branch
East Branch
Mill Cr.
Garnet L.
Friends Lake
Schroon R.
River
E. Stony Cr.
Paul Cr.
Sacandaga R.
Daly Cr.
West Stony Cr.
Great Sacandaga Lake
Hans Cr.
Kenyetto Cr.
Snook Kill
Moses Kill
Cossayuna L.
Black Cr.
Batten Kill
Saratoga Springs
Saratoga Lake
Ballston L.
Round L.
Mechanicville
Hoosic River
Tomhannock Lake
Little Hoosic R.
BASIN LOCATION
Upper Hudson River
Drainage Basin
N
10 5 0 10
miles

DRAINAGE BASIN 11

Upper Hudson River

Background

The Upper Hudson River Drainage Basin covers an area of 4,000 square miles and is populated by approximately 260,000 people, a majority of whom live in either the Glens Falls or Albany-Schenectady-Troy Metropolitan Statistical Areas. The Hudson River originates in the wilderness of the Adirondack Mountains at Lake Tear of the Clouds at the base of Mt. Marcy. The large portion of this basin upstream of Corinth is sparsely populated and lies within the Adirondack Park where boating, fishing, and other recreational activities are popular. The most populated and industrialized areas of the drainage basin are located along the main stem of the Upper Hudson downstream from Corinth. There are approximately 4,800 miles of rivers and streams and 500 lakes and ponds in the basin.

Water Quality Issues and Concerns

Although there are a few significant water quality problems in the basin, generally water quality is relatively good. Only 6 percent of the basin's river miles and lakes are cited in the Department's 1993 Priority Water Problem (PWP) List. This is less than the statewide average for rivers and lakes of 9 percent and 7.5 percent respectively.

The most serious water quality problem in the main stem of the Upper Hudson is the PCB contamination of river bottom sediment below Hudson Falls and Fort Edward from electrical capacitor manufacturing plants located there. The effects of this contamination extend down the entire length of the Hudson estuary to its mouth at New York Harbor into the East River and the marine waters of Western Long Island. The river has been designated a federal superfund site by the U.S. Environmental Protection Agency. Data collected over a period of years prior to 1992 had shown that PCB levels in the biota and water column were declining, but PCB levels in many fish species remained above the 2.0 mg/l FDA limit. As a result, fishing was prohibited in the Upper Hudson from the dam at Troy, upstream to Fort Edward and in the tributaries in this section up to the first barrier that is impassible by fish. Fish samples collected in 1992 showed a significant increase in PCB levels. Recent data submitted to the Department by the General Electric Company indicate that seeps and sediments adjacent to their Hudson Falls site are highly contaminated with PCBs. The company has entered into a consent agreement with the Department to remediate the plant site.

Two other waterbodies in the basin are also adversely affected by PCB contamination. There is a fish consumption advisory for Schroon Lake to eat no more than one meal per month of lake trout greater than 27 inches in length. The source of PCB is unknown. There is also an advisory to eat no more than one meal per month of brown

and rainbow trout caught in the Hoosic River. The PCB source is believed to be a closed electrical capacitor manufacturing facility in North Adams, Massachusetts.

A significant water quality concern in the headwaters of the basin is acid precipitation. The surface waters in the higher elevations of the basin have naturally deficient buffering capacities and are particularly vulnerable. Eighteen lakes and ponds are cited in the 1993 Priority Water Problem (PWP) List because of precluded fish propagation caused by this problem.

Sediment runoff from wintertime road sanding is also cited in the PWP List as a significant problem in the headwaters area. This problem also affects fish propagation by filling in spawning areas in the stream beds and by smothering eggs.

Construction and land disposal are the most frequently cited sources of pollutants causing water quality problems in the more densely developed areas tributary to the portion of the basin downstream of Hadley-Luzerne area.

Two major recreational lakes in the basin have impaired uses. Fishing and boating in Saratoga Lake are impaired by an infestation of Eurasian water milfoil. Fish propagation is impaired in Great Sacandaga Lake, a flood control reservoir used for recreation. The water level fluctuations necessary to operate the reservoir for its intended purpose sometimes vary 20 feet or more. These water level variations have virtually eliminated macrophytes, reduced invertebrate forage activity in shallow areas and possibly expose fish eggs to desiccation. Production of northern pike seems to have been particularly affected.

Recent Water Quality Studies

The most recent basin-wide water quality study was conducted in 1987-1988 as part of the Rotating Intensive Basin Studies (RIBS) program (NYSDEC 1990) (see Appendix B). The basin is currently being restudied during 1993-1994.

Water column, bottom sediment, Ceriodaphnia toxicity, and macroinvertebrate analysis were conducted at eleven sites. Five sites (North Creek, Corinth, Fort Edward, Schuylerville, and Waterford) were on the main stem of the Hudson. Five of the six remaining stations were on major tributaries and one (Clover Mill Brook) was on a small tributary of Kayaderosseras Creek. Water column sampling only was continued through 1989-1992 at the Corinth and Waterford sites on the main stem and the Eagle Bridge site on the Hoosic River, although with less frequency.

Water quality varied from excellent to fair within the basin. Better water quality was generally found at upstream sites or sites above any significant urbanization. The better quality sites were the Hudson at North Creek, Schroon River at Warrensburg, and Batten Kill at Battenville. The Batten Kill had the best overall quality, which might be

expected of this premier trout stream. The poorest quality was found in the of the Hudson at Waterford, at the downstream end of the basin, both stati Hoosic, and Clover Mill Brook. It should be noted that the latter stream may be affected by leachate or runoff from a privately owned and operated landfill which recently ceased operation. This was the only site which showed any evidence of toxicity to Ceriodaphnia test organisms. The Hoosic's water quality is strongly influenced by inputs from other upstream states as there was evidence of water quality problems at the New York-Vermont state line. Both the Hoosic and the Hudson below Fort Edward confirm prior evidence of contamination by polychlorinated biphenyls (PCB). Ironically though, macroinvertebrate tissue analyzed for PCB at Fort Edward and Schuylerville did not show the same evidence of PCB contamination shown in previous sampling. This could not be explained.

Copper was a parameter of concern at nearly all stations except the Batten Kill, Fish Creek and Clover Mill Brook. Metals levels in the sediment were generally within normal background except the Hudson at Schuylerville (lead, mercury, cadmium), Schroon River (lead), and the Hoosic at Petersburg (manganese, zinc). Among the stations where macroinvertebrate tissue was analyzed, four showed evidence of levels above background: Hudson River at Fort Edward (lead and manganese), Hudson River at Waterford (PCB), Schroon River at Warrensburg (mercury), and Hoosic River at Petersburg (PCB).

Significant Water Quality Changes

In 1993, the Department compiled and published a twenty-year retrospective assessment of water quality based on macroinvertebrate studies (Bode et al, 1993). Six sites in the basin showed a trend toward water quality improvement. None showed a decline.

The Hudson River downstream of Glens Falls, Schuylerville and Waterford showed improvement. The greatest improvement was at Schuylerville which went from moderately impacted to non-impacted. These improvements are due to improved waste treatment of the various municipal and industrial discharges into the Hudson in this reach.

The Walloomsac River, a tributary of the Hoosic which flows into New York from Vermont, also showed considerable improvement from generally moderate impact to non-impacted following upgrading of the Bennington (VT) municipal sewage treatment facility.

References

R.W. Bode, M.A. Novak, L.E. Abele; 20 Year Trends In Water Quality of Rivers and Streams In New York State Based on Macroinvertebrate Data 1972-1992, NYSDEC Technical Report, Albany, NY, 1993.

NYSDEC, Division of Water, Bureau of Monitoring and Assessment in cooperation with the US Geological Survey, Biennial Report Rotating Intensive Basin Studies Water Quality Assessment Program 1987-1988, Albany, NY, December 1990.

NYSDEC, Division of Water, Bureau of Monitoring and Assessment, 1993 Priority Water Problem List, Albany, NY, December 1993.

1994 305(B) BASIN INVENTORY — PRIORITY WATER PROBLEMS LIST

SEGMENT NAME	SEG ID	COUNTY	SEGMENT TYPE	SEGMENT SIZE		CLASS	PRIMARY USE IMPAIRED	SEVERITY	PRIMARY POLLUTANT	PRIMARY SOURCE
DRAINAGE BASIN: Upper Hudson River										
Sub-Basin: Upper Hudson Main Stem										
ANTHONY KILL #7	1101-0025	Saratoga	River	0.4	Mi.	C(T)	Fish Propagation	Threatened	Silt (Sediment)	Construction
BALLSTON LAKE	1101-0036	Saratoga	Lake	235.0	A	A	Water Supply	Stressed	Nutrients	Hydromodification
BEAVER DAM BROOK	1101-0010	Warren	River	4.0	Mi.	C(T)	Fish Propagation	Threatened	Silt (Sediment)	Construction
BULLHEAD POND	1101-0033	Saratoga	Lake	6.0	A	C	Fish Propagation	Stressed	pH	Acid Rain
CLOVER MILL BROOK	1101-0004	Saratoga	River	1.5	Mi.	C(T)	Fish Propagation	Precluded	Unknown Toxicity	Land Disposal
COLE BROOK & TRIB	1101-0035	Saratoga	River	1.0	Mi.	C(T)	Fish Propagation	Precluded	Silt (Sediment)	Streambank Erosion
DWAAS KILL	1101-0007	Saratoga	River	2.0	Mi.	C	Fish Propagation	Precluded	Silt (Sediment)	Construction
DWAAS KILL TRIBS.	1101-0008	Saratoga	River	5.0	Mi.	C(T)	Fish Propagation	Precluded	Silt (Sediment)	Construction
DWAASS KILL-TRIB2	1101-0024	Saratoga	River	0.5	Mi.	C(TS)	Fish Propagation	Threatened	Silt (Sediment)	Construction
FISH CREEK	1101-0003	Saratoga	River	0.1	Mi.	C	Fishing	Precluded	Aesthetics	On-site Systems
HUDSON RIVER	1101-0002	Washington	River	40.1	Mi.	C	Fishing	Precluded	Priority Organics	Contaminated Sed.
HUDSON RIVER	1101-0005	Saratoga	River	0.8	Mi.	B	Fish Survival	Precluded	Water Level/Flow	Hydromodification
HUDSON RIVER	1101-0011	Warren	River	5.5	Mi.	C	Boating	Stressed	Pathogens	On-site Systems
HUDSON RIVER	1101-0027	Warren	River	0.1	Mi.	C	Fishing	Threatened	Unknown Toxicity	Land Disposal
KAYADEROSSERAS CK	1101-0013	Saratoga	River	25.0	Mi.	B&C(T)	Fish Propagation	Threatened	Silt (Sediment)	Construction
KAYADEROSSERAS CK	1101-0014	Saratoga	River	0.1	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Streambank Erosion
LAKE LONELY	1101-0034	Saratoga	Lake	117.0	A	B	Fishing	Stressed	Nutrients	Urban Runoff
LONG KILL	1101-0021	Saratoga	River	4.0	Mi.	C(TS)	Fish Propagation	Precluded	Silt (Sediment)	Construction
RICE BROOK	1101-0018	Saratoga	River	0.1	Mi.	C(T)	Fish Propagation	Threatened	Oxygen Demand	Land Disposal
ROUND LAKE	1101-0037	Saratoga	Lake	330.0	A	B	Bathing	Impaired	Nutrients	Hydromodification
ROUND LAKE RESERV	1101-0038	Saratoga	Lake(R)	3.0	A	A	Water Supply	Stressed	Silt (Sediment)	Streambank Erosion
SARATOGA LAKE	1101-0012	Saratoga	Lake	4000.0	A	A	Boating	Impaired	Nutrients	Agriculture
SNOOK KILL TRIBS	1101-0026	Saratoga	River	3.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Construction
SPRING RUN	1101-0001	Saratoga	River	3.0	Mi.	D	Fishing	Impaired	Aesthetics	Land Disposal
SPRING RUN TRIB.	1101-0017	Saratoga	River	0.2	Mi.	C	Fish Propagation	Stressed	Silt (Sediment)	Construction
STURDEVANT CREEK	1101-0019	Saratoga	River	0.1	Mi.	AA(T)	Aesthetics	Stressed	Silt (Sediment)	Land Disposal
SUMMIT LAKE	1101-0009	Washington	Lake	84.0	A	A	Water Supply	Stressed	Pathogens	On-site Syste
WHEELER CK TRIB	1101-0015	Saratoga	River	0.2	Mi.	D	Aesthetics	Stressed	Aesthetics	Other Source
YADDO LAKES	1101-0039	Saratoga	Lake	16.0	A	C	Fish Propagation	Impaired	Silt (Sediment)	Storm Sewers

(continued on next page...)

SEGMENT NAME	SEG ID	COUNTY	SEGMENT TYPE	SEGMENT SIZE		CLASS	PRIMARY USE IMPAIRED	SEVERITY	PRIMARY POLLUTANT	PRIMARY SOURCE
DRAINAGE BASIN: Upper Hudson River										
Sub-Basin: Hoosick River										
BABCOCK LAKE	1102-0014	Rensselaer	Lake	45.0	A	A	Bathing	Stressed	Silt (Sediment)	Roadbank Erosion
HOOSIC RIVER	1102-0002	Rensselaer	River	17.0	Mi.	C	Fishing	Impaired	Priority Organics	Source Unknown
JOHNSONVILLE RES.	1102-0003	Rensselaer	Lake(R)	269.0	A	B	Fish Propagation	Precluded	Water Level/Flow	Hydromodification
LAKE LAUDERDALE	1102-0011	Washington	Lake	39.0	A	B	Bathing	Stressed	Nutrients	On-site Systems
LITTLE HOOSIC RIV	1102-0007	Rensselaer	River	18.5	Mi.	C(TS)	Fish Propagation	Stressed	Silt (Sediment)	Streambank Erosion
OWL KILL	1102-0005	Washington	River	1.0	Mi.	C(T)	Fishing	Impaired	Aesthetics	On-site Systems
TOMHANNOCK RESERV	1102-0006	Rensselaer	Lake(R)	1722.0	A	A	Water Supply	Threatened	Nutrients	Agriculture
WALLOOMSAC RIVER	1102-0001	Rensselaer	River	7.0	Mi.	C(T)	Fish Propagation	Impaired	Metals	Contaminated Sed.
WHIPPLE BROOK	1102-0004	Washington	River	1.5	Mi.	C(T)	Fish Survival	Impaired	Oxygen Demand	Agriculture
DRAINAGE BASIN: Upper Hudson River										
Sub-Basin: Battenkill River										
BATTEN KILL	1103-0001	Washington	River	2.0	Mi.	C	Fishing	Impaired	Aesthetics	Industrial
COSSAYUNA LAKE	1103-0002	Washington	Lake	667.0	A	A	Boating	Impaired	Nutrients	On-site Systems
WHITE CREEK	1103-0004	Washington	River	7.0	Mi.	C(T)	Fish Propagation	Threatened	Silt (Sediment)	Agriculture
DRAINAGE BASIN: Upper Hudson River										
Sub-Basin: Hudson Headwaters										
BRANT LAKE	1104-0037	Warren	Lake	1392.0	A	A	Water Supply	Threatened	Nutrients	On-site Systems
CARRY POND	1104-0003	Hamilton	Lake	6.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
CEDAR RIVER	1104-0064	Hamilton	River	11.0	Mi.	AAT,CT	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
CHUB LAKE	1104-0004	Hamilton	Lake	19.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
CLOCKMILL POND	1104-0005	Hamilton	Lake	38.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
EAST STONY CREEK	1104-0038	Warren	River	9.0	Mi.	C(T)	Fish Propagation	Threatened	Silt (Sediment)	Silviculture
EAST STONY CREEK	1104-0058	Hamilton	River	10.0	Mi.	C	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
GREAT SACANDAGA L	1104-0024	Fulton	Lake	26804.0	A	B	Fish Propagation	Impaired	Water Level/Flow	Hydromodification
HOLMES LAKE	1104-0006	Fulton	Lake	19.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
INDIAN LAKE	1104-0021	Hamilton	Lake	4365.0	A	AA	Fish Propagation	Impaired	Water Level/Flow	Hydromodification
INDIAN RIVER	1104-0022	Hamilton	River	3.0	Mi.	C(T)	Fish Propagation	Impaired	Water Level/Flow	Hydromodification
KENNYETTO CREEK	1104-0039	Fulton	River	3.0	Mi.	C	Fish Propagation	Stressed	Silt (Sediment)	Agriculture

(continued on next page...)

SEGMENT NAME	SEG ID	COUNTY	SEGMENT TYPE	SEGMENT SIZE		CLASS	PRIMARY USE IMPAIRED	SEVERITY	PRIMARY POLLUTANT	PRIMARY SOURCE
DRAINAGE BASIN: Upper Hudson River										
Sub-Basin: Hudson Headwaters										
KENNYETTO CREEK	1104-0040	Fulton	River	4.0	Mi.	C	Fish Propagation	Impaired	Oxygen Demand	On-site Systems
KETTLE CREEK	1104-0048	Hamilton	River	2.0	Mi.	B	Fish Propagation	Stressed	Salts	Deicing Agents
LAKE ABENAKEE	1104-0027	Hamilton	Lake(R)	480.0	A	C(T)	Fish Propagation	Impaired	Water Level/Flow	Hydromodification
LAKE ADIRONDACK	1104-0074	Hamilton	Lake	220.0	A	B	Bathing	Impaired	Nutrients	Other Source
LAKE COLDEN	1104-0007	Essex	Lake	38.0	A	FP	Fishing	Precluded	pH	Acid Rain
LAKE DURANT	1104-0059	Hamilton	Lake	50.0	A	C	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
LAKE LUZERNE	1104-0075	Warren	Lake	96.0	A	B	Bathing	Stressed	Aesthetics	Other Source
LAKE PLEASANT	1104-0051	Hamilton	Lake	1457.0	A	AA(T)	Bathing	Stressed	Pathogens	Other Source
LEWEY LAKE	1104-0061	Hamilton	Lake	92.0	A	B	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
LITTLE MOOSE POND	1104-0008	Hamilton	Lake	26.0	A	C(T)	Fish Propagation	Precluded	pH	Acid Rain
LOON LAKE	1104-0031	Warren	Lake	610.0	A	A	Bathing	Stressed	Pathogens	Other Source
LOWER LOOMIS POND	1104-0010	Hamilton	Lake	6.0	A	FP	Fishing	Precluded	pH	Acid Rain
MARION POND	1104-0020	Essex	Lake	6.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
MAYFIELD LAKE	1104-0042	Fulton	Lake	14.0	A	B	Bathing	Impaired	Pathogens	On-site Systems
MECO LAKE	1104-0011	Hamilton	Lake	13.0	A	FP	Fishing	Precluded	pH	Acid Rain
MIAMI RIVER	1104-0060	Hamilton	River	0.3	Mi.	FP	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
MIDDLE LOOMIS PD.	1104-0012	Hamilton	Lake	6.0	A	FP	Fishing	Precluded	pH	Acid Rain
MILL CREEK	1104-0032	Warren	River	2.0	Mi.	C(T)	Fish Propagation	Threatened	Silt (Sediment)	Construction
MINERVA LAKE	1104-0043	Essex	Lake	30.0	A	B	Bathing	Stressed	Nutrients	On-site Systems
OXBOW LAKE	1104-0049	Hamilton	Lake	285.0	A	B	Bathing	Stressed	Nutrients	On-site Systems
PISECO LAKE	1104-0047	Hamilton	Lake	961.0	A	B	Bathing	Stressed	Nutrients	On-site Systems
ROCK LAKE(05-229)	1104-0013	Hamilton	Lake	26.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
ROCK LAKE(05-275)	1104-0014	Hamilton	Lake	6.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
ROGERS BROOK	1104-0044	Essex	River	2.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
ROUND POND	1104-0073	Hamilton	Lake	224.0	A	FP	Fishing	Impaired	Metals	Acid Rain
SACANDAGA LAKE	1104-0050	Hamilton	Lake	524.0	A	A	Bathing	Stressed	Nutrients	On-site Systems
SACANDAGA RIVER	1104-0025	Saratoga	River	3.0	Mi.	C	Fish Propagation	Precluded	Water Level/Flow	Hydromodificatio
SACANDAGA RIVER	1104-0062	Hamilton	River	30.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
SACANDAGA RVR, WB	1104-0063	Hamilton	River	5.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
SACANDAGA RVR-E.B	1104-0057	Hamilton	River	7.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
SAND LAKE	1104-0015	Hamilton	Lake	115.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
SCHROON LAKE	1104-0002	Essex	Lake	4128.0	A	AA	Fishing	Impaired	Priority Organics	Source Unknown

(continued on next page...)

SEGMENT NAME	SEG ID	COUNTY	SEGMENT TYPE	SEGMENT SIZE		CLASS	PRIMARY USE IMPAIRED	SEVERITY	PRIMARY POLLUTANT	PRIMARY SOURCE
DRAINAGE BASIN: Upper Hudson River										
. Sub-Basin: Hudson Headwaters										
SCHROON RIVER	1104-0001	Warren	River	2.9	Mi.	C	Bathing	Impaired	Aesthetics	Storm Sewers
SCHROON RIVER	1104-0023	Warren	River	20.0	Mi.	C(T)	Fish Propagation	Precluded	Silt (Sediment)	Deicing Agents
SILVER LAKE	1104-0016	Hamilton	Lake	64.0	A	FP	Fishing	Precluded	pH	Acid Rain
SOUTH PINE LAKE	1104-0017	Hamilton	Lake	13.0	A	C(T)	Fish Propagation	Precluded	pH	Acid Rain
STEWART BDG. RSV.	1104-0026	Saratoga	Lake(R)	461.0	A	C	Fish Propagation	Impaired	Water Level/Flow	Hydromodification
STONEY POND	1104-0018	Essex	Lake	64.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain
STONY CREEK	1104-0036	Warren	River	9.0	Mi.	C(T)	Fish Propagation	Threatened	Silt (Sediment)	Roadbank Erosion
THE BRANCH (SCHR)	1104-0045	Essex	River	3.0	Mi.	C(T)	Fish Propagation	Stressed	Silt (Sediment)	Deicing Agents
THIRTEENTH BROOK	1104-0030	Warren	River	4.0	Mi.	A(T)	Fish Propagation	Stressed	Silt (Sediment)	Resource Extraction
TROUT LAKE	1104-0019	Hamilton	Lake	13.0	A	FP	Fish Propagation	Precluded	pH	Acid Rain

REFERENCE NO. 24

EBASCO SERVICES, INC.

CONTROL NO.:	DATE:	TIME:
8310-0076-50065	9/28/95	13:30

DISTRIBUTION:

BETWEEN:	OF:	PHONE:
USGS Ron Allen	USGS Information	(518) 285-5602

AND: Dennis Place

DISCUSSION:

Flow Rates for Halfway Creek and Hudson River in Glens Falls area.

ACTION ITEMS:

R.A. ⇒ No gauging stations are present on Halfway Creek.

The Hudson River has an annual mean Rate of 5,641 CFS at the Fort Edwards gauging station.

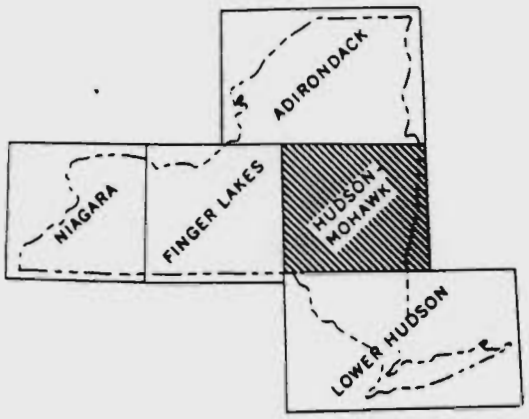
REFERENCE NO. 25

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

POTENTIAL YIELDS OF WELLS IN UNCONSOLIDATED AQUIFERS IN UPSTATE NEW YORK--HUDSON-MOHAWK SHEET

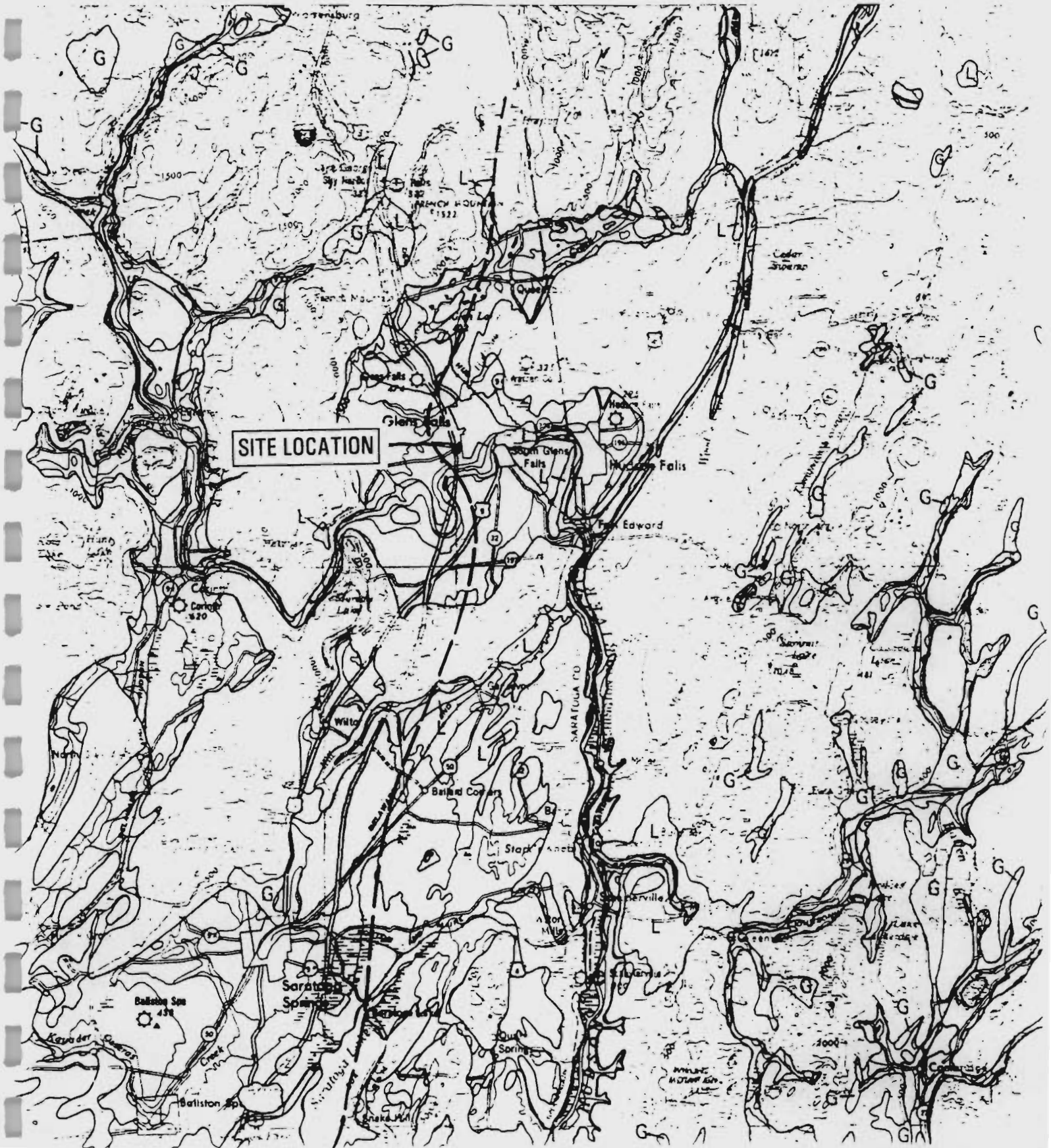
By
Edward F. Bugliosi, Ruth A. Trudell, and George D. Casey



WATER-RESOURCES INVESTIGATIONS REPORT 87-4275

Prepared in cooperation with the
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Albany, New York
1988


SITE LOCATION
Glens Falls
South Glens Falls
Hudson Falls
Fort Edward
Saratoga Springs
Ballston Spa
Ballston Spa
Corinth
Stark
Queensbury
Cedar Swamp
Samuels Lake
Snake Hill

7. MacNish, R. D., and Randall, A. D., 1982, Stratified-drift aquifers in Susquehanna River basin, New York: New York State Department of Environmental Conservation Bulletin 75, 68 p.

8. Randall, A. D., 1972, Records of wells and test borings in the Susquehar River basin, New York: New York State Department of Environmental Conservtion Bulletin 69, 92 p.

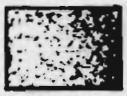
9. Reynolds, R. J., 1985, Hydrogeology of the Clifton Park area, Saratoga County, New York: U.S. Geological Survey Water Resources Investigations Report 84-4032, 6 sheets, scale 1:24,000.

10. Snavely, D. S., 1983, Ground-water appraisal of the Pine Bush area, Albany, New York: U.S. Geological Survey Water Resources Investigation Report 82-4000, 47 p.

EXPLANATION

POTENTIAL YIELD OF WATER TO WELLS IN UNCONSOLIDATED AQUIFERS

UNCONFINED AQUIFERS, 10 to 100 GALLONS PER MINUTE--Sand and gravel with saturated zone generally less than 10 ft thick, or thicker but with less permeable silty sand and gravel. Yields in areas adjacent to streams may exceed 100 gal/min through pumping-induced infiltration, but these areas are too small to show at this scale.



UNCONFINED AQUIFERS, MORE THAN 100 GALLONS PER MINUTE--Sand and gravel of high transmissivity and with saturated thickness greater than 10 ft. Many such areas are associated with surface-water sources that can provide additional water pumping-induced recharge.

AQUIFER OF UNKNOWN POTENTIAL--Areas of sand or sand and gravel for which little or no well data are on file to determine yield potential. Letter symbols, explained below, indicate the type of deposit.

L — Lacustrine or eolian--Fine to medium sand that probably yields less than 10 gal/min.

G — Kame, kame terrace, kame moraine, outwash, or alluvium--Sand and gravel of unknown thickness or saturation. Yield potential is greater where streams are present.

BURIED CHANNEL--Stratified drift of unknown saturated thickness and yield potential and overlain by other unconsolidated deposits.

1 — PRIMARY WATER-SUPPLY AQUIFER--A highly productive aquifer that is being used as a source of water supply by major public-supply systems. Number indicates name of aquifer area (see key below) and report number in list of related publications. Reports and maps cited describe these aquifers in detail.

Primary aquifer number	Aquifer area
1	Schenectady
9	Clifton Park - Halfmoon area

REFERENCE NO. 26

nited States
Department of
Agriculture

oil
Conservation
Service

In cooperation with
Cornell University
Agricultural Experiment
Station

Soil Survey c
Warren Coun.,
New York




(Joins sheet 36)
SITE LOCATION
WEST GLEN FALLS
GLEN FALLS
OaB
OaC
Oa
Ud
En
Wa
To
Hp
Wo
26
32

tricted root zone. Red maple, white spruce, and white ar are common on this soil.

This soil is suited to pasture during dry periods of the ear. In most areas suitable outlets for drainage systems difficult to find because of the low position of the soil the landscape. If drained, the soil is suited to most rops grown in the region. In places, surface stones limit he use of farm equipment. If cultivated crops are grown, ctices such as use of cover crops and sod crops in he cropping system help to maintain soil tilth.

This soil is in capability subclass IIIw.

Mu—Middlebury fine sandy loam. This is a nearly evel, deep, moderately well drained and somewhat oorly drained soil on flood plains in valleys. Most areas long and narrow and range from 3 to 20 acres. Slope ges from 0 to 3 percent.

Typically, the surface layer is very dark grayish brown sandy loam about 10 inches thick. The subsoil is wn and mottled, olive brown fine sandy loam about 0 inches thick. The substratum is mottled, dark ellowish brown fine sandy loam to a depth of 60 inches more.

ncluded with this soil in mapping are small areas of vell drained Tioga soils. Areas of included soils are 1 to cres and make up about 10 percent of the map unit. o included are units at elevations above 1,000 feet nd in the northern part of the survey area, where the oils have cooler temperatures than this Middlebury soil.

he seasonal high water table in this Middlebury soil is a depth of 1/2 foot to 2 feet in spring. Flooding ccasionally occurs mostly in spring. Bedrock is mainly t a depth of 60 inches or more. Permeability, or the rate water movement through the soil, is moderate. urface runoff is slow. The capacity of the soil to store vater available for plant growth is high. In unlimed areas surface layer is strongly acid to slightly acid.

Most areas of this soil are forested. Some areas have been cleared and are used for farming.

This soil is poorly suited to most recreation and urban es because of flooding, the seasonal high water table, d high potential frost action. Some areas are suited to onds, although in some areas seepage is a problem nd cutbanks commonly cave. The lower part of the ostratum is commonly a source of sand or gravel.

Potential productivity for trees on this soil is high. spen, red maple, and sugar maple are common on this l. Most species used in reforestation in this region w well on this soil. There are few limitations to voodland management.

This soil is well suited to most crops grown in the ion, but in some years occasional flooding in late pring damages crops. In some areas the seasonal high vater table delays planting of some crops. Use of the l for pasture or sod crops in the cropping system help control erosion and surface scouring by floodwaters and to maintain soil tilth. Crops respond well to lime and fertilizer.

This soil is in capability subclass IIw.

OaA—Oakville loamy fine sand, 0 to 3 percent slopes. This is a nearly level, deep, well drained soil on outwash plains. Areas of this soil are broad and oval and range from 5 to 50 acres.

Typically, the surface layer is dark brown loamy fine sand about 8 inches thick. The subsoil is yellowish brown and light olive brown sand about 19 inches thick. The substratum is light olive brown and dark grayish brown sand to a depth of 60 inches or more.

Included with this soil in mapping are areas of Elnora and Hinckley soils. Also included, on elevated benches adjacent to large streams, are small areas of well drained Tioga soils. Areas of included soils are 1 to 3 acres and make up about 10 percent of the map unit.

The seasonal high water table in this Oakville soil is at a depth of more than 6 feet. Bedrock is mainly at a depth of more than 60 inches. Permeability, or the rate of water movement through the soil, is rapid. Surface runoff is very slow. The capacity of the soil to store water available for plant growth is low. Rock fragments make up less than 3 percent of the surface layer and the subsoil. The surface layer is strongly acid to neutral.

Most areas of this soil have been cleared, but many areas are reverting to forest or are used for urban development.

This soil is well suited to most recreation and urban uses, such as camp sites, playgrounds, and dwellings with basements. The sandy texture and droughtiness limit the establishment of lawns or sod cover for homesites, playgrounds, and golf courses. If the soil is used for septic tank absorption fields or sanitary landfills, ground water contamination is a hazard because of poor filtering of effluent. Ponds and habitat for wetland wildlife are difficult to establish because of seepage and the depth to the water table. This soil is a potential source of sand.

Potential productivity for trees on this soil is moderately high. The sandy texture and droughtiness cause a high rate of seedling mortality and somewhat limit tree growth. Red oak, yellow birch, and red pine are common in forested areas.

This soil is moderately suited to cultivated crops. The main limitations are low natural fertility and droughtiness. Permanent sod crops and cover crops help to increase organic matter content, improve soil tilth, and increase the water-holding capacity of the soil. If irrigation water is available, the soil is suited to vegetable crops. The soil is suited to pasture in spring and early summer.

This soil is in capability subclass IVs.

OaB—Oakville loamy fine sand, 3 to 8 percent slopes. This is a gently sloping, deep, well drained soil

on outwash plains. Most areas are broad and oval and range from 5 to 40 acres.

Typically, the surface layer is dark brown loamy fine sand about 8 inches thick. The subsoil is yellowish brown and light olive brown sand about 19 inches thick. The substratum is light olive brown and dark grayish brown sand to a depth of 60 inches or more.

Included with this soil in mapping are areas of Elnora and Hinckley soils. Also included, adjacent to large streams, are small areas of well drained Tioga soils. Areas of included soils are 1 to 3 acres and make up about 10 percent of the map unit.

The seasonal high water table in this Oakville soil is at a depth of more than 6 feet. Bedrock is mainly at a depth of more than 60 inches. Permeability, or the rate of water movement through the soil, is rapid. Surface runoff is slow. The capacity of the soil to store water available for plant growth is low. Rock fragments make up less than 3 percent of the surface layers and the subsoil. The surface layer is strongly acid to neutral.

Most areas of this soil have been cleared, but many areas are reverting to forest or are used for urban development.

This soil is well suited to most recreation and urban uses. The sandy texture and droughtiness limit the establishment of lawns or sod cover for golf courses and playgrounds. If the soil is used as sites for septic tank absorption fields or sanitary landfills, ground water contamination is a hazard because of poor filtering of effluent. Ponds and habitat for wetland wildlife are difficult to establish because of seepage and the depth to the water table. The soil is a potential source of sand.

Potential productivity for trees on this soil is moderately high. The sandy texture and droughtiness cause a high rate of seedling mortality and somewhat limit tree growth. Red oak, yellow birch, and red pine are common in forested areas.

This soil is moderately suited to cultivated crops. The main limitations are low natural fertility and droughtiness. If irrigated, this soil can produce high yields of vegetable crops. Irrigation is somewhat more difficult on this soil than on nearly level Oakville soils. Permanent sod crops or cover crops help to increase organic matter content, to improve soil tilth, and to increase the water-holding capacity of the soil. This soil is suited to pasture in spring and early summer.

This soil is in capability subclass IVs.

OaC—Oakville loamy fine sand, 8 to 15 percent slopes. This is a sloping, deep, well drained soil on dissected side slopes and knolls on outwash plains. Most areas are long and narrow and range from 5 to 20 acres.

Typically, the surface layer is dark brown loamy fine sand about 8 inches thick. The subsoil is yellowish brown and light olive brown sand about 19 inches thick. The substratum is light olive brown and dark grayish brown sand to a depth of 60 inches or more.

Included with this soil in mapping are areas of Elnora and Hinckley soils. Areas of included soils are 1 to 3 acres and make up about 10 percent of the map unit.

The seasonal high water table in this Oakville soil is at a depth of more than 6 feet. Bedrock is mainly at a depth of more than 60 inches. Permeability, or the rate of water movement through the soil, is very rapid. Surface runoff is slow or medium. The capacity of the soil to store water available for plant growth is low. Gravel makes up less than 5 percent of the surface layer and the subsoil. In unlimed areas the surface layer is strongly acid.

Most areas of this soil are forested. Oak, white pine, and birch are common on this soil.

This soil is moderately suited to most recreation and urban uses. Slope is the main limitation to such uses as campsites, roads and streets, and homesites. Droughtiness and the sandy texture are limitations to establishing lawns and sod cover. If the soil is used as sites for septic tank absorption fields and sanitary landfills, ground water contamination is a hazard because of poor filtering of the effluent. The soil is a potential source of sand.

Potential productivity for trees on this soil is moderately high. Seedling mortality is high because of the sandy texture and droughtiness. Logging trails placed on the contour help to control erosion and gullying. Red oak, yellow birch, and red pine are common in wooded areas.

This soil is poorly suited to cultivated crops because of slope, low natural fertility, and droughtiness. Permanent sod crops and cover crops help to control erosion, to increase organic matter content, to improve soil tilth, and to increase the water-holding capacity of the soil. Some areas are suited to pasture in spring and early summer.

This soil is in capability subclass VIe.

Pa—Palms muck. These are nearly level, very poorly drained, organic soils in depressions in low flat areas in both upland and lowland areas. Most areas are oval and range from 10 to 80 acres. Slope ranges from 0 to 2 percent.

Typically, the uppermost 25 inches of the soil is black, decomposed organic material (muck). The substratum is mottled, gray silty clay loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of deep Carlisle soils. Also included are areas of Madalin and Wareham soils, which have a surface layer high in organic matter but are dominantly mineral soils. Also included, adjacent to ponds and lakes, are areas of Saprists and Aquepts. Areas of included soils are 1 to 3 acres and make up about 20 percent of the map unit.

The seasonal high water table is between the surface and a depth of less than 1 foot much of the year. Some

mottled, olive fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Charlton and Massena soils. Also included are Paxton and Woodbridge soils, which have a firm, dense substratum. Also included are areas of nearly level Sutton soils and a few areas of soils where stones are on the surface. Areas of the included soils are 1 to 3 acres and make up about 10 percent of the map unit.

The seasonal high water table in this Sutton soil is at a depth of 1 1/2 to 3 feet. Bedrock is at a depth of 60 inches or more. Permeability, or the rate of water movement through the soil, is moderate or moderately rapid. Surface runoff is slow. The capacity of the soil to store water available for plant growth is moderate. Rock fragments make up 5 to 15 percent of the surface layer and 5 to 20 percent of the subsoil. In unlimed areas the surface layer is very strongly acid to moderately acid.

Most areas of this soil are forested. Some areas have been cleared of trees and stones and are used for farming.

This soil is suited to some recreation and urban uses. The main limitation is the seasonal high water table. Slope is a limitation for playground use. The seasonal high water table is a limitation for dwellings with basements and septic tank absorption fields. Seepage is a limitation for sanitary landfills and other waste disposal systems. Ponds and habitat for wetland wildlife are difficult to develop because of slope, seepage, and the depth to the water table in the drier periods in summer.

Potential productivity for trees on this soil is moderate. There are few limitations to woodland management, but the seasonal high water table somewhat restricts root growth. White pine, birch, beech, and oaks are common in this soil.

This soil is well suited to cultivated crops. If the included wet spots are drained, in areas cleared of occasional surface stones the soil is suited to corn and hay. Contour farming, cover crops, and conservation tillage systems that return most of the crop residue to the soil surface help to maintain soil tilth, to increase the water-holding capacity, and to control erosion. The soil is suited to pasture, but restricted grazing in spring when the soil is moist helps to prevent surface compaction and loss of the desirable forage grasses.

This soil is in capability subclass IIw.

To—Tioga fine sandy loam. This is a nearly level, deep, well drained soil on flood plains along major streams. Slope ranges from 0 to 3 percent. Most areas of the soil are oblong in shape and range from 1 to 10 acres.

Typically, the surface layer is very dark grayish brown fine sandy loam about 10 inches thick. The subsoil is dark grayish brown, dark brown, brown, and dark yellowish brown fine sandy loam about 18 inches thick. The substratum is yellowish brown fine sandy loam to a depth of 41 inches and loose, dark yellowish brown loamy sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Middlebury soils in low-lying areas and areas of Fluvaquents and Udifluvents immediately adjacent to streams. Also included, on small terraces above the flood plain, are areas of sandy Oakville and Plainfield soils and gravelly Hinckley and Belgrade soils, which have a high silt content. Some units are where the surface layer of this Tioga soil has been removed for use as topsoil. Also included, in the northern part of the survey area, are areas of soils that are similar to this Tioga soil but have colder soil temperatures. Areas of included soils are 1 to 3 acres and make up about 15 percent of the map unit.

The seasonal high water table in this Tioga soil is at a depth of 3 to 6 feet. The soil is occasionally flooded for brief periods in early spring or in midwinter. Bedrock is mainly at a depth of 60 inches or more. Permeability, or the rate of water movement through the soil, is moderate or moderately rapid in the surface layer and the subsoil and moderate to rapid in the substratum. Surface runoff is slow. The capacity of the soil to store water available for plant growth is high. The surface layer is strongly acid to neutral.

Most areas of this soil have been cleared and are used for farming (fig. 7). A few areas are in recreation use.

This soil is suited to some recreation uses, such as picnic areas, and paths and trails, but permanent structures at campsites or on playgrounds are not feasible because of the flood hazard. This soil is poorly suited to most urban uses because of flooding and the seasonal high water table. Ponds and habitat for wetland wildlife are difficult to develop because of seepage and piping of the soil material in embankments and dikes.

Potential productivity for trees on this soil is high. There are a few limitations to woodland management. Sugar maple, red oak, and white pine are common trees on this soil.

This soil is well suited to cultivated crops. It is suited to most crops grown in the region, but the crop varieties are restricted at high elevations because of the relatively short growing season. In some areas streambank erosion is a hazard and the surface can be scoured during flooding. Cover crops, sod crops in the cropping system, and conservation tillage systems that return crop residue to the soil help to control surface scour or erosion, to increase organic matter content, and to maintain soil tilth.

This soil is in capability class I.

Ud—Udorthents, smoothed. This map unit consists of areas that were excavated or filled with material derived from sandy, gravelly, or loamy soils. The material from most areas that were excavated was used as roadfill in the construction of the Adirondack Northway.



Figure 7.—Typical area of nearly level Tioga fine sandy loam on a flood plain adjacent to a stream. This soil is well suited to cultivated crops. (Photo courtesy of Alan Cederstrom)

Other areas consist of filled or leveled areas used for parking lots, for recreation areas, as sanitary landfills, and for other similar uses. These areas have small pits that were the source for this fill material. Areas of this map unit differ in shape and are 1 to 10 acres. Slope ranges from 0 to 15 percent.

Many areas of Udorthents, smoothed, have been covered with topsoil and seeded. Other areas have been smoothed, graded, and left bare. Some areas are droughty because available water capacity, or the capacity to store water for plant use, is very low. Permeability, or the rate of water movement through the soil, ranges from moderate to very rapid. Topsoil and fertilizer are needed to establish a plant cover in bare areas.

The potential for urban development and recreation uses differs from area to area of this map unit. Onsite investigation is needed for each individual site.

This map unit generally is poorly suited to farming and to use as woodland and as habitat for wildlife.

This map unit is not assigned to a capability subclass.

Wa—Wareham loamy sand. This is a nearly level, deep, and somewhat poorly drained or poorly drained soil in depressions on sandy plains and on low benches in valleys. Slope ranges from 0 to 3 percent. Most areas of this soil are oval or long and narrow, and range from 3 to 20 acres. The mountainous areas of the soil are mostly 10 to 25 acres.

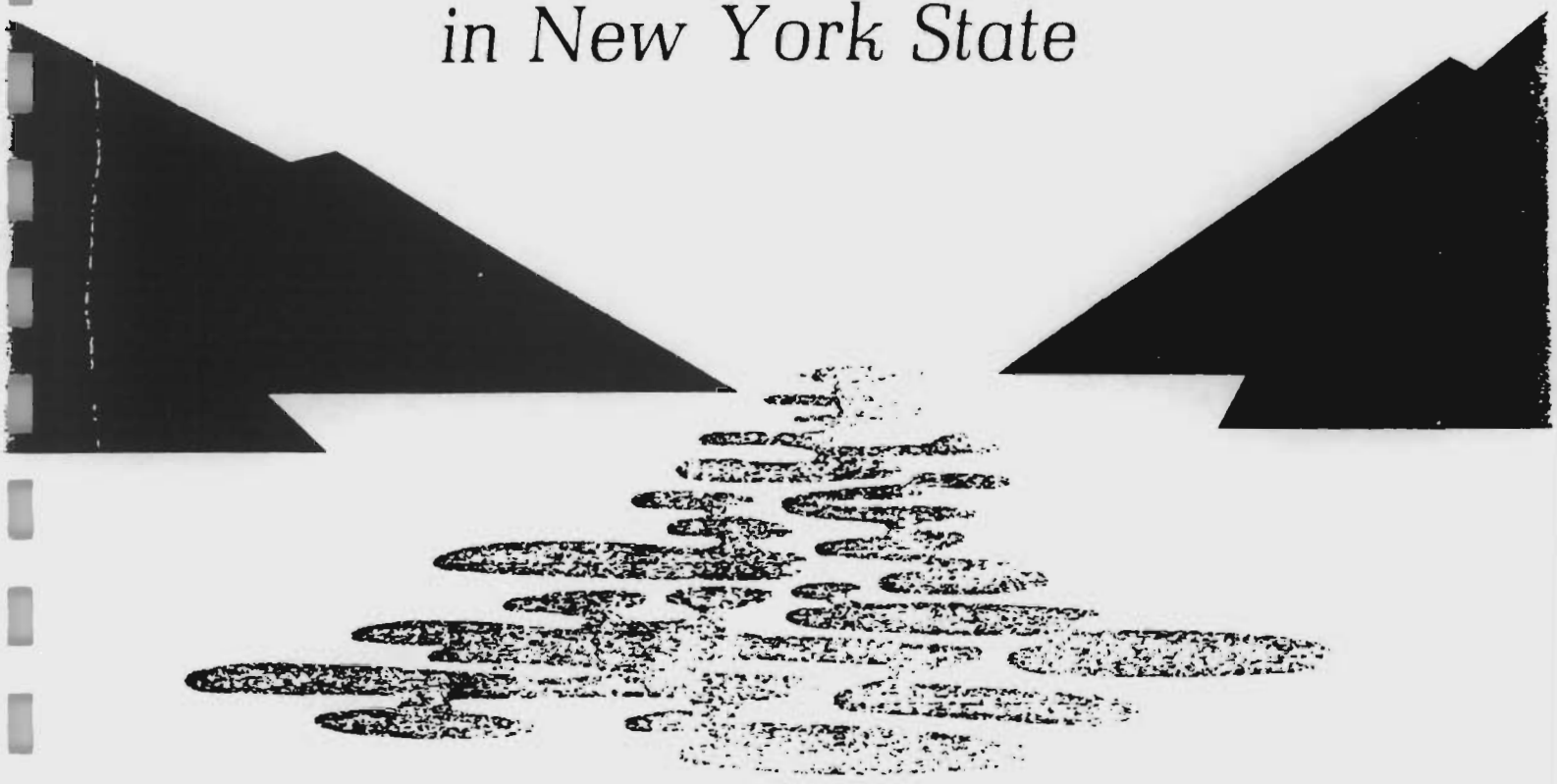
Typically, the surface layer is very dark grayish brown loamy sand about 8 inches thick. The subsoil is mottled, olive brown loamy fine sand about 10 inches thick. The substratum is mottled, gray loamy sand to a depth of 32 inches and olive sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Elnora soils on knolls. Also included, in the mountainous regions, are many large areas of soils that have a surface layer and a subsoil of fine sandy loam or sandy loam. Also included are areas of Raynham soils, which have a high silt content, and areas of similar soils, which are very poorly drained. Also included are a few small areas of loamy Massena soils and a few areas of soils that have a mucky surface layer. Areas of included soils

REFERENCE NO. 27

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WATER RESOURCES *of the* CHAMPLAIN-UPPER HUDSON BASINS *in New York State*



State of New York / Nelson A. Rockefeller, Governor / Office of Planning Coordination D. David Brandon, Director

WATER RESOURCES OF THE CHAMPLAIN-UPPER HUDSON BASINS IN NEW YORK STATE

by

G.L. Giese and W.A. Hobba, Jr.

ABSTRACT

This report describes the surface- and ground-water resources of the Lake Champlain-Upper Hudson region -- a 6,108-square mile area in northeastern New York State. The eastern border of the area, where most of the region's 240,000 people live, is formed by the 135-mile length of the Lake Champlain-Upper Hudson valley. The area west of the valley lies in rugged Adirondack Mountains, and a small section east of the valley lies in the less rugged Taconic Mountains. The region is underlain by crystalline rocks throughout, but they are at or near the surface only in the Adirondack highlands. In other places sedimentary rocks or unconsolidated deposits overlie the crystalline rocks.

The region is water rich, having an average yearly precipitation of 38 inches. Major rivers include the Saranac, Ausable, Bouquet, Schroon, Sacandaga, and Hudson Rivers. Runoff in streams averages about 1.8 cfsm (cubic feet per second per square mile) but ranges from less than 1.0 to more than 2.0 cfsm depending on location.

The valley-fill deposit of the Glens Falls area is the largest ground water aquifer in the study area. Yields from individual wells in this area average 67 gpm (gallons per minute) but are as much as 400 gpm from properly constructed wells. The bedrock is most productive where it constitutes an artesian system in the Plattsburgh area. Wells in this system yield an average of 35 gpm and may yield as much as 200 gpm.

The chemical quality of the waters of the Lake Champlain-Upper Hudson region generally is good or excellent. Dissolved solids content, even of the ground waters, rarely exceeds 500 ppm (parts per million). In large sections of the Adirondack Mountains underlain by crystalline rocks, dissolved solids content of the ground waters is less than 100 ppm. The amount of dissolved material in surface waters is even less. In spite of the overall good quality of the waters of the region, high hardness and alkalinity are problems sometimes found in the eastern and northern parts of the study area.

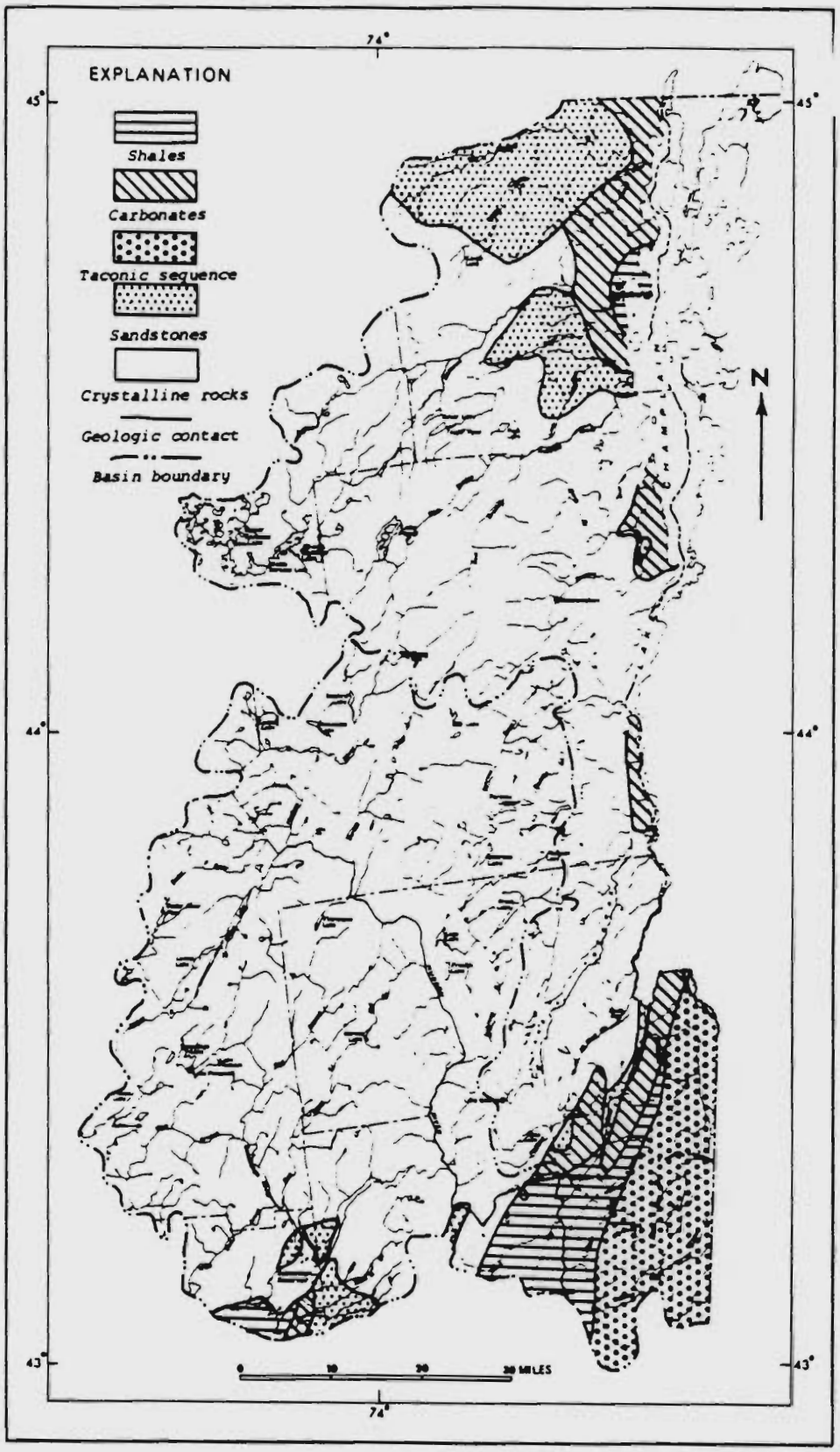


Figure 2.--Generalized bedrock geologic map.
(Adapted from Fisher and others 1962)

Table 2

Geologic units in the Lake Champlain-Upper Hudson region and their water-bearing properties

	Age	Unit	Maximum thickness (feet)	Character of material	Yield of wells, range and average (gallons per minute)	Water-bearing properties
Unconsolidated deposits	Recent	Alluvium	40	Mixture of clay, silt, sand, and gravel.	--	Yield may be comparable to that of till
	Pleistocene	Glacial deposits	215+	Sand and gravel Fine- to coarse-grained sand interbedded with layers of gravel.	0-400 38	Eskers are often the more permeable of the sand and gravel deposits. Water from some deposits contains troublesome amounts of iron.
			142+	Sands Very fine- to coarse-grained sand with occasional beds of sand and gravel. Valley-fill deposits often grade to silt and clay at depth.	5-325 28	Deep wells generally yield more highly mineralized water than shallow wells. Springs in the delta deposits may yield 100 gpm or more.
			250	Lake clay and silt Stratified clay and silt with occasional thin layers of sand or sand and gravel	--	Insignificant as an aquifer. However, layers or lenses of sand or sand and gravel may yield up to 10 gpm to individual wells.
			100+	Till Poorly sorted mass of rock material ranging from clay to boulder in size.	1-20	Large diameter wells in clayey till usually yield enough water for domestic needs. Drilled wells in sandy till yield from 1 to 20 gpm. Water is generally soft.
Consolidated rocks	Middle Ordovician	Shale	1,200+	Beds of shale with some thin layers of interbedded sandstone. Joints and other openings are more numerous in the upper part of the unit.	1-80 9	Wells completed in shale beneath thick permeable saturated deposits sometimes have high yields.
	Upper Cambrian and Lower and Middle Ordovician	Carbonate rocks: limestone	900	Generally dense, thin- to thick-bedded limestones and dolomites, layers of sandstone and shale are found through out the unit. Horizontal bedding-plane openings and solution cavities are more numerous than vertical joints and fractures.	2-300	Artesian conditions are frequently encountered. Water is moderately hard and hydrogen sulfide (H2S) is sometimes present.
		Carbonate rocks: dolomite	650			
	Ordovician and Cambrian	Taconic sequence	3,000(?)	Beds of graywacke ("dirty") sandstone, shale, slate and shale with interbedded limestones. Some fractures and joints occur throughout the unit.	0-60 8	The average yield for 6 wells tapping slate is 3 gpm.
	Upper Cambrian	Sandstone	2+	Fine- to coarse-grained sandstone, generally, highly cemented with silica, carbonate or hematite. Horizontal bedding-plane openings are more numerous than vertical joints and fractures. Upper part contains interbedded layers of dolomite.	2-100 15	Artesian conditions are often encountered. Water may be hard and contain excessive iron. Unimportant as aquifer in Washington County.
	Precambrian	Crystalline rocks	Unknown	Fine- to coarse-grained igneous and metamorphic rocks. Joints and fractures are more numerous in the upper part.	1-35 12	Wells completed in the crystalline rocks beneath thick permeable saturated deposits often have high yields. Water quality is usually very good.

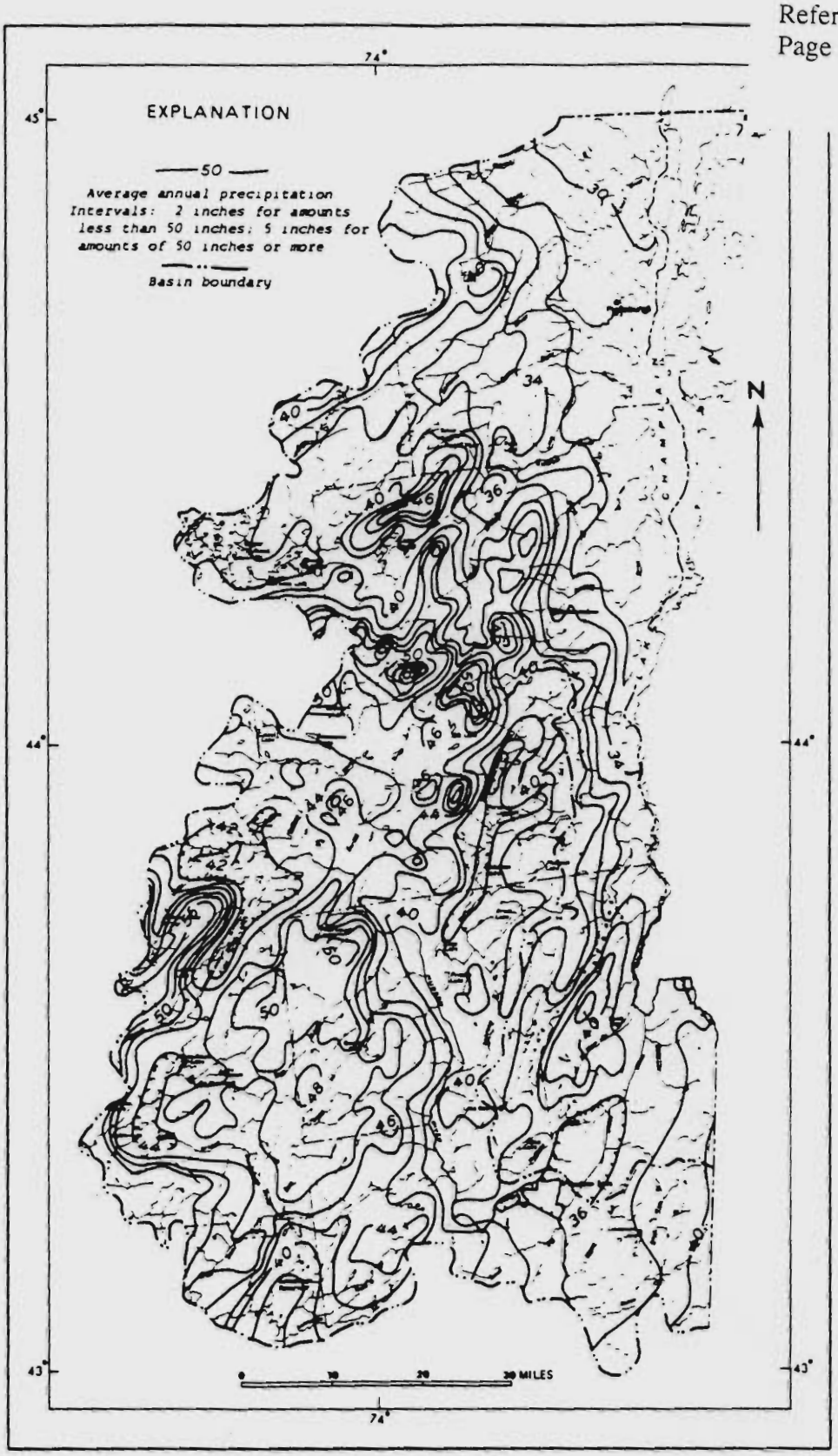


Figure 5.--Average annual precipitation.

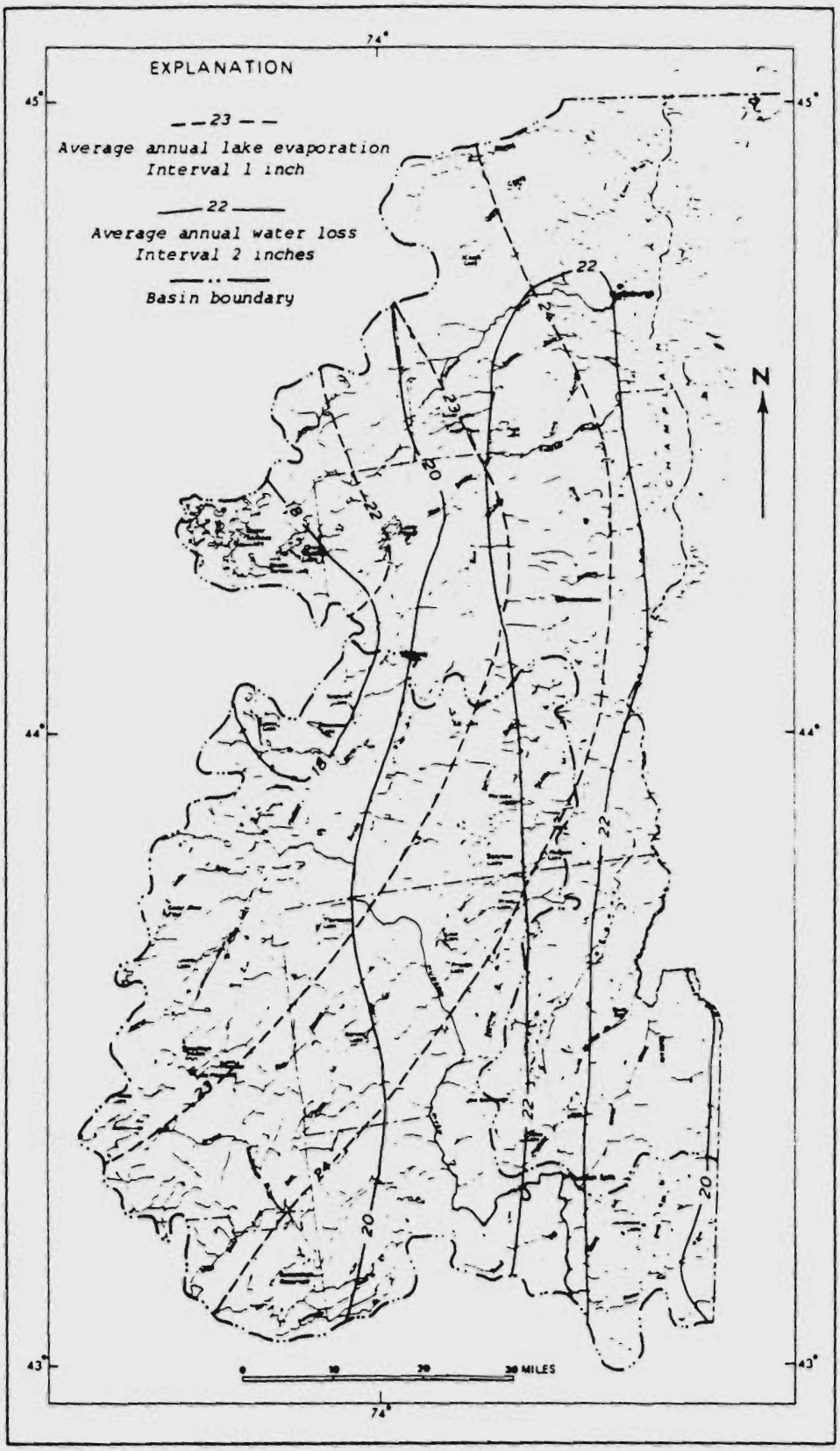


Figure 6.--Average annual lake evaporation and water loss.

GLENS FALLS AREA

The deposits (both sand and sand and gravel) of the Hudson valley in the vicinity of Glens Falls is the largest and thickest unconsolidated aquifer in the Lake Champlain-Upper Hudson region (pl. 1). The deposit is over 15 miles long in a north-south direction, 9 miles wide at its widest point, and 1 mile wide at its narrowest. It is bordered by highlands on the north and west, and by the Hudson River on the east. The surface is one of generally low relief with rolling hills, some deep gullies, and numerous terraces as seen in figure 21.



Figure 21.--Area west of vertical section through wells 46-34, 12-52, and 56-04 near Glens Falls showing the placement of four wells for the removal of 500,000 gpd of water from an area 1 mile square.

The bulk of the deposit varies in size from fine- to coarse-grained sand, but some layers of silt occur at depth. Gravel deposits occur in an esker ridge (a deposit formed by a subglacial stream) at the north end of the area. Particle-size analyses (Heath and others, 1963, p. 98) of samples from bore holes in the sand at Saratoga National Historic Park (7 miles south of Schuylerville near the west side of the Hudson River) showed that the deposit consists mainly of medium- and fine-grained sand as seen in figure 22. The sand deposit south of Fortsville is probably of similar composition; drillers' logs for wells and visual inspection indicate that the size of the surficial material north of Fortsville is generally larger, especially near Glen Lake and where the Hudson River emerges from the mountains.

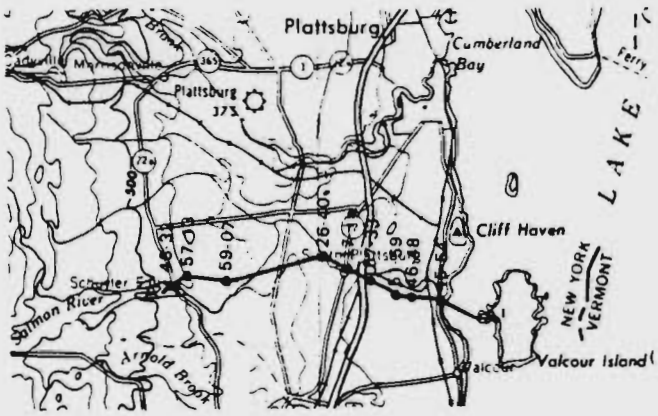
PLATE 1

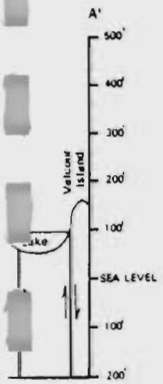
HYDROGEOLOGY

Lake Champlain and Upper Hudson River Basins

showing the location of wells, test borings, and springs

prepared for
The New York State
Water Resources Commission
and the
Office of Planning Coordination
by
The United States Department of the Interior
Geological Survey





EXPLANATION

Unconsolidated Deposits
(Yield to wells, in gallons per minute)

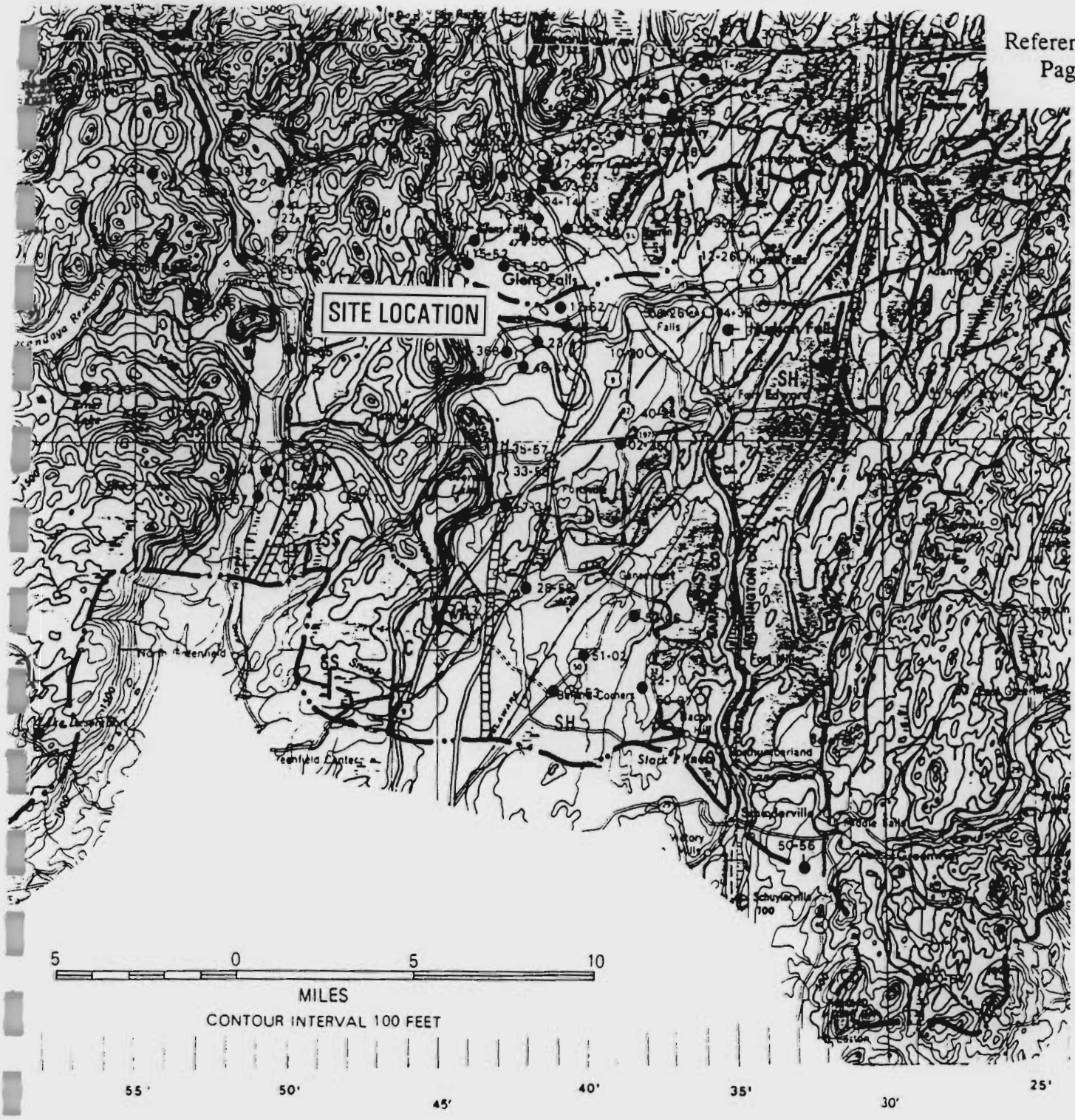
- Till <1-20
- Sand and gravel 0-400
- Buried sand and gravel 50-400
- Sand 5-325
- Buried sand 10-200
- Silt and clay — Not an aquifer

Exposed and Buried Bedrock
(Yield to wells, in gallons per minute)

- SS — Sandstone 2-100
- C — Carbonate 2-300
- SH — Shale 1-80
- T — Taconic sequence 0-60
- CR — Crystalline rocks 1-35

- Geologic contact
- Basin boundary
- Geologic contact approximately located on cross sections
- Approximate location of buried stream channel containing sand and gravel
- Bedrock contact
- Fault, arrows indicate relative movement
- ○ 47-50 — Well tapping bedrock
- Chemical analyses available, well or spring
- ● 07-53 — Well tapping unconsolidated material
- Spring tapping unconsolidated material
- Well log available
- 17-15 — Well on cross section




SITE LOCATION
Glens Falls
Hudson Falls
Fort Edward
Schuylerville
Stillwater
Saratoga Lake
Saratoga Reservoir
North Greenfield
Greenfield Center
Stark
Cohoes
Waterford
Mechanicville
Middle Falls
Easton
5 0 5 10
MILES
CONTOUR INTERVAL 100 FEET
55'
50'
45'
40'
35'
30'
25'

30′ 15′

PLATE 2

STREAMFLOW

Lake Champlain and Upper Hudson River Basins

90 percent duration point for selected streams

prepared for
The New York State
Water Resources Commission
and the
Office of Planning Coordination
by
The United States Department of the Interior
Geological Survey

30'

EXPLANATION

CLASS OF STREAMFLOW

Cubic feet per second		Million gallons per day
<0.1	○ ○ ○	<0.0646
0.1-1.0	∠	0.0646-0.646
1.0-5.0	● ● ●	0.646-3.26
5.0-10.0	▲ ▲ ▲	3.26-6.46
10.0-25.0	——	6.46-16.15
25.0-50.0	▬▬	16.15-32.3
50-100	○ ○ ○	32.3-64.6
100-500	∠ △ ∠	64.6-323
500-1000	● ● ●	323-646
> 1000	▲ ▲ ▲	> 646



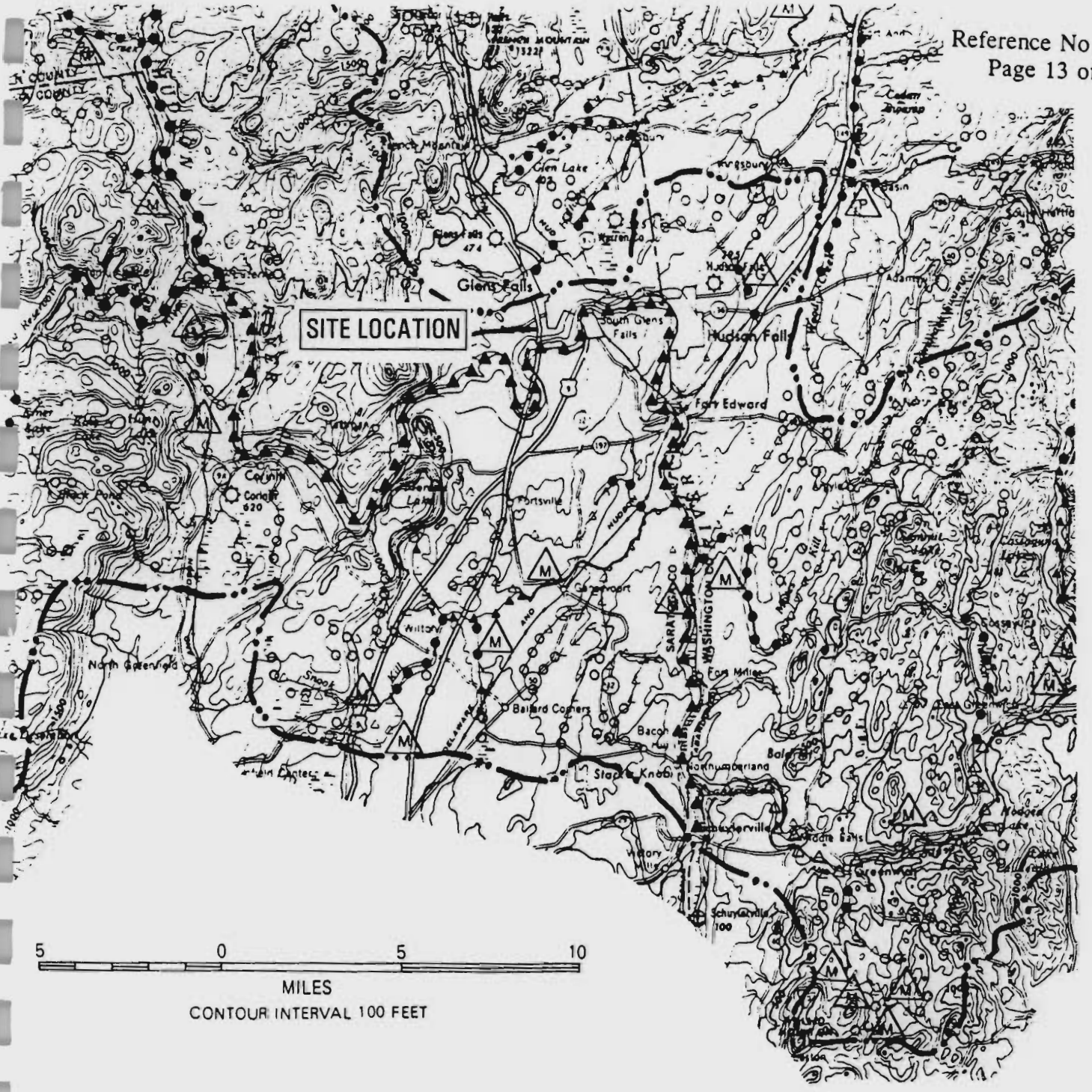
15'

G
Gaging station

P
Partial record site with five or more base-flow measurements

M
Miscellaneous site with less than five base-flow measurements

44°00'


SITE LOCATION
Glens Falls
South Glens Falls
Hudson Falls
Fort Edward
Queensbury
Glen Lake
Corinth
Fortsville
Gansevoort
Wilton
North Greenfield
Ballard Corners
Fort Miller
Bacon Hill
Northumberland
Stacks Knob
Schuylerville
Victory Mills
Saratoga Lake
Kayaderosseras
Adams
5 0 5 10
MILES
CONTOUR INTERVAL 100 FEET

Preparec

REFERENCE NO. 28

STATE OF NEW YORK

OFFICIAL COMPILATION

OF

CODES, RULES AND REGULATIONS

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Governor

GAIL S. SHAFFER
Secretary of State

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DEPARTMENT OF STATE
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Albany, New York 12231

1/83

ARTICLE 7

Lake Champlain Drainage Basin

PART

830 Lake Champlain Drainage Basin

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
462	C-134 portion as described	Mettawee River	Enters Lake Champlain from southeast at south shore of East Bay and 0.8 mile north of Village of Whitehall. Mouth to a point 2.1 miles upstream from mouth and at confluence of Barge Canal with Mettawee River and 0.8 mile south of south line of Village of Whitehall.	F-26	C	C
463	C-134 portion as described	Mettawee River	From confluence with Barge Canal upstream to trib. 15. Trib. 15 enters from southeast 0.2 mile east of intersection of Fort Ann-Granville-Whitehall township lines and 2.2 miles north of hamlet of West Granville.	F-26 G-26	C	C
464	C-134 portion as described	Mettawee River	From trib. 15 to New York-Vermont boundary line at east boundary of Village of Granville.	G-26	C	C(T)
465	C-134-1	Tributary of Mettawee River and Barge Canal	Enters Mettawee River from west 0.2 mile downstream from Delaware and Hudson Railroad bridge crossing at Village of Whitehall.	F-26	D	D

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
466	C-134-1-1 including P 415	Tributary of tributary of Mettawee River and Barge Canal	Enters trib. 1 of Mettawee River from north 0.8 mile upstream from mouth and 0.5 mile east of Village of Whitehall. P 415 is at source of trib. 1 and 0.5 mile east of Village of Whitehall.	F-26	AA	AA
467	C-134-2 and tribs.	Tributary of Mettawee River and Barge Canal	Enters Mettawee River from east 0.1 mile upstream from Delaware and Hudson Railroad bridge at Village of Whitehall.	F-26	D	D
468	C-134-3	Tributary of Mettawee River and Barge Canal	Enters Mettawee River from northwest 0.8 mile upstream from trib. 2 and 0.3 mile southeast of roundhouse of Delaware and Hudson Railroad.	F-26	D	D
469	C-134-4 portion as described	Wood Creek and Barge Canal	Enters Mettawee River from south 0.3 mile upstream from trib. 3 and approximately 0.9 mile south of Village of Whitehall. Mouth to Lock 9 of Barge Canal located 0.3 mile upstream from brdige crossing at hamlet of Smiths Basin.	F-26 G-26	C	C
470	C-134-4 portion as described	Wood Creek	From Lock 9 of Barge Canal to source.	G-26 G-25	C	C

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
471	C-134-4-Barge Canal, portion as described	Barge Canal	From Lock 9 of Barge Canal to Lake Champlain drainage basin limit which is 1.7 miles northeast of hamlet of Dunham Basin.	G-26 G-25	C	C
472	C-134-4-1 and tribs.,2,3	Tributaries of Wood Creek and Barge Canal	Enter Wood Creek from west 0.1, 0.6, and 1.3 miles upstream from mouth, respectively, and 0.9, 1.3 and 1.9 miles south of Village of Whitehall.	F-26	D	D
473	C-134-4-4 portion as described	Sawmill Creek	Enters Wood Creek from northwest 0.4 mile upstream from trib. 3 and 2.5 miles south of Village of Whitehall. Mouth to trib. 1 which enters from north 0.5 mile upstream from mouth and 2.2 miles south of Village of Whitehall.	F-26	D	D
474	C-134-4-4 portion as described	Sawmill Creek	From trib. 1 to source.	F-26	C	C
475	C-134-4-4-1	Tributary of Sawmill Creek	Enters Sawmill Creek from north 0.5 mile upstream from mouth and 2.2 miles south of Village of Whitehall.	F-26	D	D

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
476	C-134-4-4-2 including P 418	Tributary of Sawmill Creek	Enters Sawmill Creek from northwest 0.5 mile upstream from trib. 1 and 2.7 miles south of Village of Whitehall.	F-26	C	C
477	C-134-4-4-P 419, P 420	Ponds on Sawmill Creek	Located on Sawmill Creek 0.5 and 1.4 miles upstream from trib. 2 and 3.1 and 3.7 miles southwest of Village of Whitehall.	F-26	C	C
478	C-134-4-5,6,7 and trib.,8,9 and tribs.,10, 11 and tribs., 12,13	Tributaries of Wood Creek and Barge Canal	Enter Wood Creek in a section beginning 0.4 mile upstream from trib. 4 (Sawmill Creek) and 3.0 miles south of Village of Whitehall and extending upstream to a point 0.4 mile north of hamlet of Comstock.	F-26 G-26	D	D
479	C-134-4-14 portion as described	Tributary of Wood Creek and Barge Canal	Enter Wood Creek from northwest 0.8 mile upstream from trib. 13 and 0.5 mile southwest of hamlet of Comstock. Mouth to P 424 (Dolph Pond) which is 2.2 miles upstream from mouth and 1.7 miles northwest of hamlet of Comstock.	G-26	C	C(T)
480	C-134-4-14 portion as described	Tributary of Wood Creek and Barge Canal	From P 424 (Dolph Pond) to source.	G-26 F-26	AA	AA

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
486	C-134-4-19 portion as described	Halfway Creek	Enters Wood Creek from west at northeast corner of Village of Fort Ann and 1.0 mile southeast of Kane Falls. Mouth to Fort Ann water supply intake 0.3 mile upstream from mouth and 0.7 mile southeast of Kane Falls.	G-26	D	D
487	C-134-4-19 portion as described	Halfway Creek	From Fort Ann water supply intake upstream to trib. 8 which enters from northwest 2.5 miles east of Griswolds Mills and 2.4 miles north of Kingsbury.	G-26 G-25	A	A
488	C-134-4-19 portion as described	Halfway Creek	From trib. 8 upstream to dam at Griswolds Mills which is located 1.2 miles southeast of West Fort Ann and 1.6 miles northwest of Vaughns.	G-25	A	A(T)
489	C-134-4-19 portion as described	Halfway Creek	From dam at Griswolds Mills upstream to source at P 455a (Wilkie Reservoir).	G-25 G-24	AA	AA(T)
490	C-134-4-19-1 and tribs.	Tributary of Halfway Creek	Enters Halfway Creek from southwest at northwesterly line of Village of Fort Ann and 0.2 mile upstream from mouth.	G-26 G-25	D	D

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
512	C-134-4-19-19-14	Tributary of Glen Lake Brook	Enters Glen Lake Brook from east at P 452 (Butler Pond) and 1.8 miles west of hamlet of French Mountain.	G-25	AA	AA
513	C-134-4-19-20, 21 and tribs., 22 and tribs., 23 including P 453 and P 453a, 24 and trib., P 454,25	Tributaries of Halfway Creek	Enter Halfway Creek in section beginning 1.4 miles upstream from Glen Lake Brook and 2.0 miles southwest of Pattens Mills and extending upstream to a point 3.3 miles southeast of hamlet of French Mountain and 1.6 miles northeast of center of City of Glens Falls.	G-25	AA	AA(T)
514	C-134-4-19-26, 27,28 and tribs., P 455,29 and trib.,30	Tributaries of Halfway Creek	Enter Halfway Creek in section beginning 1.4 miles upstream from trib. 25 and 1.8 miles west of center of City of Glens Falls and extending upstream to a point 2.7 miles southwest of hamlet of French Mountain and 5.6 miles northwest of center of City of Glens Falls.	G-25	AA	AA
515	C-134-4-19-P 455a	Wilkie Reservoir	Located at source of Halfway Creek 1.7 miles east of peak of Bucktail Mountain and 4.0 miles southeast of peak of Potash Mountain.	G-24	AA	AA(T)

GLENS FALLS
QUADRANGLE



ARTICLE 19

Upper Hudson River Drainage Basin Series

PART

940 Hoosic River Drainage Basin

941 Upper Hudson River Drainage Basin

TABLE I

CLASSIFICATIONS AND STANDARDS OF QUALITY AND PURITY ASSIGNED TO FRESH SURFACE WATERS WITHIN THE UPPER HUDSON RIVER DRAINAGE BASIN IN ESSEX, HAMILTON, WARREN, WASHINGTON, FULTON, SARATOGA AND RENSSELAER COUNTIES, NEW YORK, EXCEPT WATERS CONTAINED WITHIN BOUNDARIES OF STATE-OWNED FOREST PRESERVE LANDS, THE HOOSIC RIVER DRAINAGE BASIN, AND THE WATERS OF LOON LAKE, BRANT LAKE, FRIENDS LAKE, AND THEIR TRIBUTARIES

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
1	H portion	Hudson River and Champlain Canal	From trib. 240 (Mohawk River) to dam at Lock 2. Water source for the Town of Waterford.	J-25sw J-25nw	A	A
2	H portion as described	Hudson River and Champlain Canal	From dam at Lock 2 to dam at Lock 3.	J-25nw	C	C
3	H portion	Hudson River and Champlain Canal	From dam at Lock 3 to trib. 301 (Batten Kill).	H-25 J-25nw	B	B
4	H portion as described	Hudson River and Champlain Canal	From trib. 301 (Batten Kill) to dam at Fort Miller.	H-25	C	C
5	H portion	Hudson River and Champlain Canal	From dam at Fort Miller to trib. 318 (Snook Kill).	H-25	C	C
6	H portion	Hudson River and Champlain Canal	From trib. 318 (Snook Kill) to 0.25 mile above falls at Glens Falls.	H-25 G-25	C	C
7	H portion	Hudson River	From 0.25 mile above falls at Glens Falls to Sherman Island Dam.	H-24	B	B
7.1	H portion	Hudson River	From Sherman Island Dam to dam at Spier Falls.	H-24 G-25	A	A
7.2	H portion	Hudson River	From dam at Spier Falls to dam at Corinth.	H-24	C	C
8	H portion	Hudson River	From dam at Corinth to trib. 369 (Sacandaga River).	H-24 G-24	B	B

4857 CN 4-30-92

TABLE I (cont'd)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
9	H portion	Hudson River	From trib. 369 to North Creek.	G-24 F-24 F-23 E-23	C	C
10	H portion	Hudson River	From North Creek to trib. 438 (Boreas River).	E-23	C	C(T)
11	H portion as described	Hudson River	From trib. 438 to P 710 (Sanford Lake).	E-23 D-23	C	C(T)
12	H portion	Hudson River	From P 710 to P 715 (Henderson Lake). Excluding P 710.	E-23	AA	AA(T)
13	H-241 and trib. 1 including P 1070	Trib. of Hudson River		J-25sw J-25se	C	C
14	H-241-1-P 1071	Subtrib. of Hudson River		J-25sw	B	B
15	H-241-1-P 1072	Lansingburgh Reservoir		J-25sw	C	C
16	H-241-1-P 1072-a, b and tribs. b-P 1072a, b-P 1072b, b-P 1072c	Tribs. of Lansingburgh Reservoir		J-25sw	C	C
17	H-241-P 1072d, 2, P 1072e	Subtribs. of Hudson River		J-25sw J-25se	C	C
17.1	H-P 1072f, 241a and trib., 241b	Tribs. of Hudson River		J-25sw	C	C
18	H-242 portion	Trib. of Hudson River	From mouth to Boston and Maine railroad crossing.	J-25sw	C	C(T)

TABLE I (cont'd)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
382	H-318-19-1a, P 107b, 3	Subtribs. of Snook Kill		H-25 H-24	C	C
383	H-318-19a, 19c, P 107c, P 107d, 19d including P 107e, 20 including P 107f, 22, 22a, and all tribs.	Tribs. of Snook Kill		H-24	C	C
384	H-318a	Trib. of Hudson River		H-25	C	C
384.1	H-381b, 318c	Tribs. of Hudson River		H-25	D	D
385	H-319 including P 109, P 110, and all tribs.	Bond Creek		G-25	C	C
386	H-319a portion as described	Champlain Canal	From Lock 7 at Ft. Edward to Upper Hudson River Drainage Basin limit, 1.7 miles northeast of hamlet of Dunham Basin.	G-25	C	C
387	H-320	Trib. of Hudson River		G-25	C	C(T)
388	H-321	Canal Feeder		G-25	C	C
389	H-321a	Old Champlain Canal	From source to Upper Hudson River Drainage Basin limit.	G-25	C	C
390	H-324, 335, 336, 340, 365, 366, 368 and trib. 368-1	Tribs. of Hudson River and subtrib.		G-25 G-24	C	C(T)

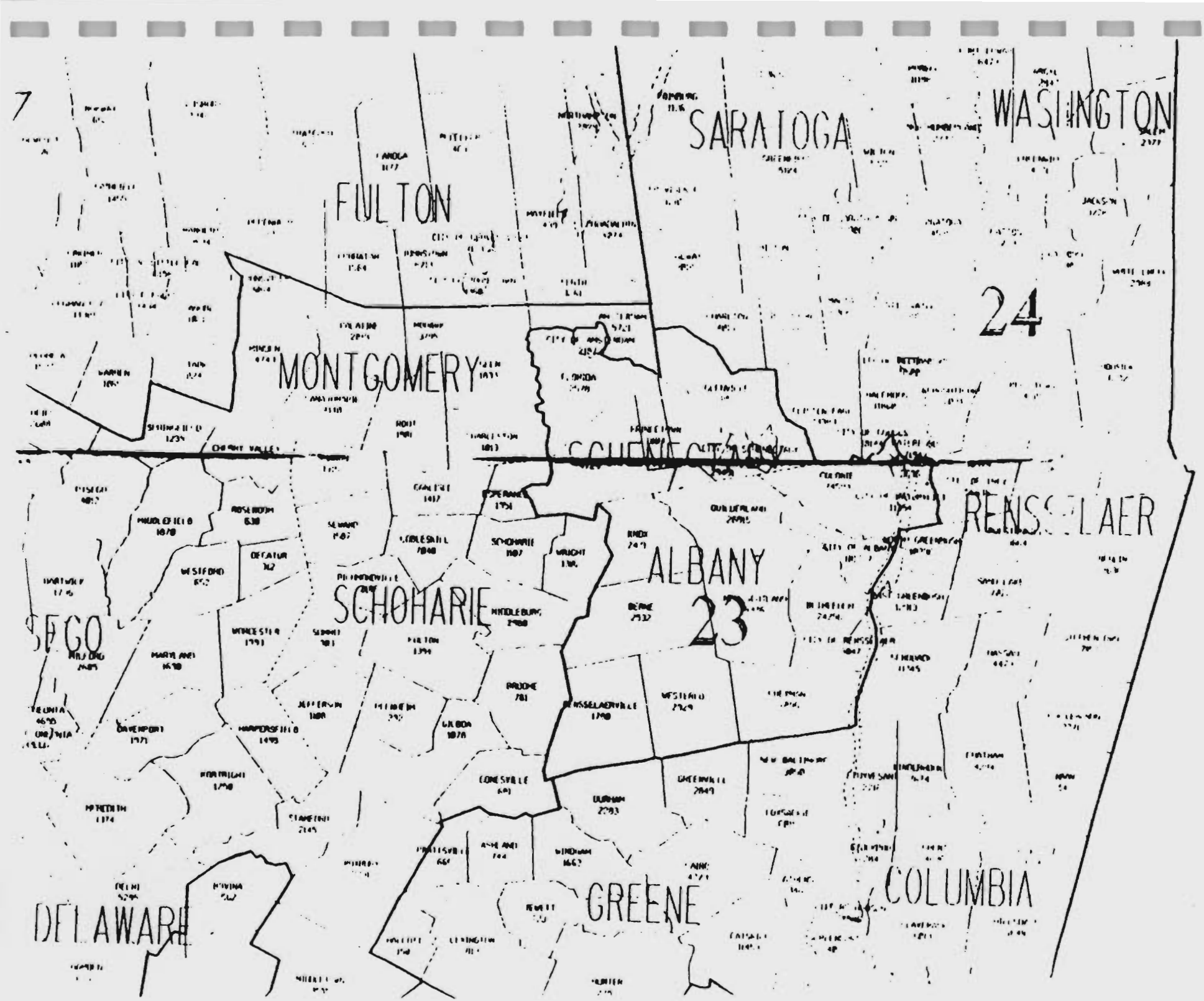

GLENS FALLS
25
G-26
G-24
GLENS FALLS
HUDSON FALLS
SCALE IN MILES
MAP G-25

NEW YORK STATE CONGRESSIONAL DISTRICTS 1974

COMPUTER GRAPHICS PRODUCED BY
THE NEW YORK STATE LEGISLATIVE TASK FORCE ON
DEMOGRAPHIC RESEARCH AND REAPPORTIONMENT
250 BROADWAY - 20TH FLOOR
NEW YORK, NEW YORK 10007



Reference No. 29
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SARATOGA
WASHINGTON
FULTON
24
MONTGOMERY
RENSSELAER
ALBANY
23
SCHOHARIE
SEGO
GREENE
COLUMBIA
DELAWARE

REFERENCE NO. 30

EBASCO SERVICES INCORPORATED **TELECON REPORT**

TO:	GLEN BRUSO - STATE OF NEW YORK DEPARTMENT OF HEALTH
PHONE:	(518) 793-3893
LOCATION:	GLENS FALLS, NY
FROM:	D. PLACE
PHONE:	(201) 535-2512
LOCATION:	LIVINGSTON, NEW JERSEY
PROJECT:	ARCS II - GLENS FALLS LANDFILL
DATE:	1-25-96
TIME:	14:05

SUBJECT: AQUIFER OF COMPLETION FOR COMMUNITY WELLS WITHIN FOUR MILES OF GLENS FALLS LANDFILL SITE

D. PLACE: WHAT IF ANY COMMUNITY WATER SUPPLY WELLS WITHIN FOUR MILES OF THE GLEN FALLS LANDFILL ARE COMPLETED IN THE BEDROCK AQUIFER.

G. BRUSO: THE WELLS WHICH SUPPLY WATER FOR SOUTH GLENS FALLS AND FORT EDWARDS ARE COMPLETED IN THE BEDROCK AQUIFER. THE WELLS WHICH SUPPLY WATER FOR MOREAU WATER DISTRICT #2 ARE COMPLETED IN THE UPPER GLACIAL AQUIFER. NON-MUNICIPAL COMMUNITY WATER SUPPLY WELLS ARE COMPLETED IN THE UPPER GLACIAL AQUIFER.