

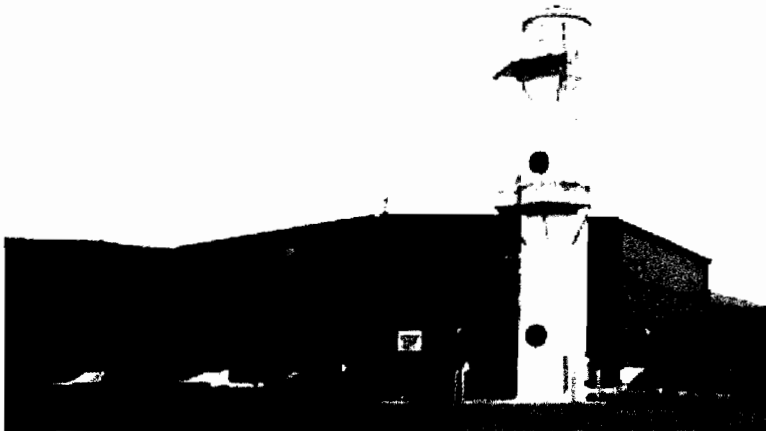
# 2001 ANNUAL SUMMARY REPORT

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Old Bethpage  
Solid Waste Disposal Complex  
Groundwater Treatment Facility

## TOWN OF OYSTER BAY DEPARTMENT OF PUBLIC WORKS SYOSSET, NEW YORK 11791

January 2002



LOCKWOOD  
KESSLER &  
BARTLETT, INC.  
SYOSSET, NEW YORK 11791



TOWN OF OYSTER BAY  
DEPARTMENT OF PUBLIC WORKS  
Syosset, New York 11791-5699

KARL J. LEUPOLD, P.E.  
COMMISSIONER

(516) 677-5935

January 31, 2002

Mr. Gerald Rider, P.E., Chief  
Operation, Maintenance & Support Section  
NYS Department of Environmental Conservation  
Division of Environmental Remediation  
625 Broadway, 11<sup>th</sup> Floor  
Albany, NY 12233-7014

1002

Re: 2001 Annual Report  
Old Bethpage Landfill Groundwater Remediation  
Consent Decree 83 CIV 5357  
Contract No. PWC 04-00  
-----

Dear Mr. Rider:

Enclosed is one copy of the 2001 Annual Report for the Old Bethpage Landfill Groundwater Remediation. This report is submitted in satisfaction of the Town's Consent Decree requirements and summarizes the results from the groundwater treatment facility operations and monitoring activities performed during the 2001 calendar year.

In summary, the 2001 results indicate that the facility is operating according to design, and that groundwater quality is continuing to improve in response to the ongoing remediation. During 2001, a total of 409 million gallons of groundwater with an average volatile organic compound (VOC) concentration of 87.5 micrograms per liter (ug/L) was remediated at an average daily flow rate of 1.11 million gallons per day. The facility maintained an on-line performance of 69 percent during 2001 and achieved an overall treatment efficiency of 99.54 percent. The average total VOC concentration in the facility effluent was 0.30 ug/L.

Should you have any further questions, please do not hesitate to call Matthew Russo, Division of Engineering, at (516) 677-5886.

Very truly yours,

KARL J. LEUPOLD, P.E.  
COMMISSIONER  
DEPARTMENT OF PUBLIC WORKS

RICHARD W. LENZ, P.E.  
FIRST DEPUTY COMMISSIONER  
DEPARTMENT OF PUBLIC WORKS

<sup>ML</sup>  
KJL:RWL:MR:dk  
Attachment

pwc04-00 2001 annual rap report

**2001  
ANNUAL SUMMARY REPORT**

FILED - 1 - 2002

**OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
GROUNDWATER TREATMENT FACILITY**

**TOWN OF OYSTER BAY  
DEPARTMENT OF PUBLIC WORKS**



**Prepared By**

**Lockwood, Kessler & Bartlett, Inc.  
Consulting Engineers  
One Aerial Way  
Syosset, New York 11791**

**JANUARY 2002**

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- C. "ANNUAL SUMMARY, OLD BETHPAGE QUARTERLY GROUNDWATER MONITORING PROGRAM, JANUARY THROUGH DECEMBER 2001", Gannett Fleming Engineers and Architects, P.C., January 2002.

# **SECTION 1.0 INTRODUCTION**

## **1.1 Purpose of this Document**

Operation of the Groundwater Treatment Facility (GTF) located at the Old Bethpage Solid Waste Disposal Complex (OBSWDC) in Old Bethpage, Long Island, New York, commenced on April 1, 1992. Pursuant to the terms of Consent Decree 83 CIV 5357 with the State of New York, the Town of Oyster Bay (Town) is required to submit quarterly operating and annual summary reports for the GTF. The reports shall contain appropriate operational and summary data, respectively, to demonstrate compliance with the Consent Decree. This document is the annual summary report for calendar year 2001, and is submitted in satisfaction of Consent Decree requirements.

## **1.2 Scope of this Document**

This report is divided into six sections and three appendices. Section 2.0 (Background Information) presents background information on site history and a summary of the Town's responsibilities with respect to the Consent Decree. Section 3.0 (Groundwater Treatment Facility Operations) provides an overview of GTF operations and the scope of the various monitoring programs. Section 4.0 (Groundwater Monitoring Program) summarizes the results from the hydraulic monitoring and groundwater sampling activities performed during this reporting period. Section 5.0 (Air Stripper Stack Emissions Monitoring) summarizes the results of the mass-balance calculations and dispersion modeling performed by LKB for the air stripper exhaust. Section 6.0 (Discussion and Recommendations) discusses the results achieved by the GTF operation and monitoring programs during 2001, and provides recommendations based on the current findings. The appendices contain a well location map, and other consultants' annual summary reports for the groundwater and ambient air/soil gas monitoring programs, respectively.



## **SECTION 2.0 BACKGROUND INFORMATION**

### **2.1 Site History**

The OBSWDC has been in operation since 1958, and was used for the processing and disposal of all non-hazardous waste generated in the Town. The wastes were burned in two on-site incinerators, and excess materials were compacted and baled for disposal in the on-site Old Bethpage Landfill (Landfill). The Landfill also accepted incinerator ash and residue, as well as raw municipal solid waste bypassed around the incinerators during periods of maintenance downtime.

In April 1986, all landfilling and incineration activities ceased, and the Town began to ship, offsite, all solid waste collected that was not recycled. Presently, the site operations largely consist of operating the Town's scalehouse, solid waste transfer station, recycling program, clean fill disposal site, gas control system, power generating facility, leachate and groundwater treatment facilities, and vehicle maintenance garage.

In June 1988, the Town entered into Consent Decree 83 CIV 5357 with the State of New York. That document required the Town to perform the following actions:

- design, construct and operate the GTF, to contain, recover and remediate the off-site contaminated groundwater plume associated with the Landfill;
- design and construct an acceptable cap for the Landfill;
- continue to operate the leachate treatment facility;
- continue to operate the landfill gas migration control system; and
- perform various monitoring functions designed to assess the adequacy of the remediation efforts.

The GTF, which is located in the northeast corner of the OBSWDC (see Appendix A), began normal operations on April 1, 1992. The final capping activities at the top of the closed Landfill, initiated in early 1992, were completed in early 1993. As noted above,

the Town continues to operate the leachate treatment facility and the landfill gas migration collection system. As a result of these actions, the Landfill is now classified as a Class 4 site (Site is properly closed – requires continued management) by the New York State Department of Environmental Conservation (NYSDEC).

## **2.2 Consent Decree Requirements Pertaining to Groundwater Plume Remediation**

### **2.2.1 Requirements for Groundwater Monitoring**

The nature and extent of the area to be remediated (a.k.a., the “plume”), under the terms and conditions of the Consent Decree were defined in the report titled "OBSWDC Offsite Groundwater Monitoring Program, Old Bethpage, Long Island, New York", by Geraghty & Miller, Inc., and dated September 1986.

To verify hydraulic containment of the plume by the recovery well system, and assess the progress of the remediation, the Town implemented a groundwater monitoring program. In accordance with the requirements set forth in the Consent Decree, the groundwater monitoring program is comprised of the following elements:

Hydraulic Monitoring - Monthly rounds of water-level measurements in the required monitoring wells until equilibrium and appropriate drawdown has been established; followed by quarterly water-level monitoring in a reduced number of wells thereafter so long as hydraulic control of the plume is maintained.

Groundwater Quality Monitoring - A baseline comprehensive first round of monitoring in the required wells prior to start-up of the GTF; followed by quarterly monitoring of groundwater quality until the termination criteria, as defined in the Consent Decree, have been demonstrated; and termination/post-termination monitoring thereafter for a minimum of five full years (20 quarters).

A total of 16 rounds of monthly hydraulic monitoring were performed during the period from April 1992 through September 1993. Beginning with the October 1993 round, which was performed concurrently with the fourth quarter 1993 groundwater quality monitoring round, the frequency of hydraulic monitoring was reduced to quarterly.

Thirty-three quarterly hydraulic monitoring rounds have been completed since October 1993.

The baseline first round of groundwater quality monitoring was performed during the period from July 30 through August 2, 1991. Quarterly monitoring of groundwater quality began in July 1992, approximately three months after start-up of the GTF and a total of thirty-eight quarterly rounds have been completed to date.

The following hydraulic and groundwater quality monitoring activities were completed during 2001 in fulfillment of Consent Decree requirements:

- four rounds of quarterly water-level measurements, collected on February 12, April 30, July 2, and October 1, 2001, respectively; and
- four rounds of quarterly groundwater quality samples, collected on February 13-16, May 1-3, July 2-6, and October 2-4, 2001, respectively.

Water-level measurements were collected from all of the wells originally specified in the Consent Decree, rather than in a reduced number of wells, as this information is required by the groundwater sampling protocol. Water-level measurements were also collected from Claremont Site Well Clusters EW-1, EW-2 and EW-3.

The groundwater samples from all four quarterly sampling rounds were analyzed for the volatile organic compound (VOCs), total (unfiltered) metals, dissolved (filtered) metals and leachate indicator parameters required by the Consent Decree. All 16 of the monitoring wells specified in the Consent Decree were sampled during each round, including Landfill Well LF-1, which was sampled for leachate indicator parameters only as per Consent Decree requirements. In addition, in keeping with a prior recommendation, Well MW-9D was sampled during the third quarter 2001 monitoring round to provide current data for the deep potentiometric zone of the aquifer at this location downgradient of the Landfill and upgradient of the Town's recovery wellfield.

### 2.2.2 Treatment Facility Discharge Limitations and Monitoring Requirements

The Consent Decree placed certain limitations on the effluent quality of the GTF. The limits are listed in Table 2 of that document, which is titled "Groundwater Aquifer and Treated Groundwater Discharge Requirements". Some effluent limitations were later modified in a letter to the Town from the New York State Department of Law, and in subsequent revisions to the New York State Part 703 Ambient Water Quality Standards, which were last updated in March of 1998. The current limits, for both VOCs and inorganic parameters, are listed in Tables 1 and 2 of this report, respectively. The Town began monthly SPDES monitoring of the GTF effluent in April of 1992 for the parameters listed in Tables 1 and 2, and continued during 2001. The town also performs monthly SPDES monitoring of the GTF influent for the VOCs listed in Table 1. A New York State-certified outside laboratory performed the SPDES influent and effluent analyses.

The Consent Decree also placed limitations on the air stripper stack emissions. These limits appear in the Consent Decree as Table 1, which is titled "Applicable Air Discharge Requirements for Air Stripper Treatment System", and is reproduced in this report as Table 3. The Town began quarterly monitoring of the air stripper stack emissions on May 28, 1992, and performed quarterly monitoring through the second quarter of 1998. Beginning with the third quarter of 1998, the Town suspended the air stripper stack emissions monitoring program indefinitely as this program is not specifically mandated by the Consent Decree, and review of the body of data generated to date indicated that it was no longer warranted. In lieu of stack testing, the Town now uses the water-quality data generated by its an on-site laboratory and the operating data recorded by Town personnel to calculate air emissions from the stack and, if required, model air-quality impacts at the downwind property line.

In addition to the above requirements, the Town is required to perform certain self-monitoring functions related to recording comprehensive flow measurements for the GTF and maintaining a record of downtime. The Town has enhanced these abilities with the installation of the on-site laboratory. The laboratory is used to monitor the GTF influent and effluent three times per week, and groundwater at each recovery well on a weekly basis. This regular monitoring allows Town personnel to make process adjustments when necessary, and may also warn the operator of equipment malfunction, or the need for maintenance. Weekly monitoring of each recovery well will

**TABLE 1****VOLATILE ORGANIC COMPOUNDS (VOCs)  
EFFLUENT LIMITATIONS**

<b>CHEMICAL CONSTITUENT</b>	<b>ALLOWABLE CONCENTRATION (in parts per billion)</b>
TOTAL VOCs (for discharge)	100
TOTAL VOCs (for groundwater)	50
BENZENE	1*
BROMODICHLOROMETHANE	50
BROMOFORM	50
CARBON TETRACHLORIDE	5
CHLOROBENZENE	5*
CHLORODIBROMOMETHANE	50
CHLOROETHANE	5*
CHLOROFORM	7*
DICHLOROBENZENE (each isomer)	3*
1,1 DICHLOROETHANE	5*
1,2 DICHLOROETHANE	0.6*
1,1 DICHLOROETHENE	5*
1,2 DICHLOROETHENE cis	5
1,2 DICHLOROETHENE trans	5*
1,2 DICHLOROPROPANE	1*
ETHYLBENZENE	5*
METHYLENE CHLORIDE	5*
TETRACHLOROETHENE	5*
TOLUENE	5*
1,1,1 TRICHLOROETHANE	5*
TRICHLOROETHENE	5
VINYL CHLORIDE	2
XYLENE (each isomer)	5*

Limits taken from Table 2, "Groundwater Aquifer And Treated Groundwater Discharge Requirements", of Consent Decree 83 CIV 5357, Appendix A.

\* indicates value modified by 11/10/88 letter to the Town, and/or in subsequent revisions to the NYCRR Part 703 Groundwater Standards.

## TABLE 2

### INORGANIC EFFLUENT LIMITATIONS

LEACHATE INDICATOR	ALLOWABLE CONCENTRATION (in parts per million)
BARIUM	1
CADMIUM	0.005*
CHLORIDE	250
CHROMIUM (total or hexavalent)	0.05
COPPER	0.2*
CYANIDE	0.2
IRON	0.3
IRON AND MANGANESE	0.5*
LEAD	0.025
MAGNESIUM (no Class GA limit)	35
MANGANESE	0.3
MERCURY	0.0007*
SILVER	0.05
ZINC (no Class GA limit)	5
TOTAL DISSOLVED SOLIDS	500
NITRATE	10
SULFATE	250
PHENOLS (total)	0.001

Limits taken from Table 2, "Groundwater Aquifer And Treated Groundwater Discharge Requirements", of Consent Decree 83 CIV 5357, Appendix A.

\* indicates value modified by 11/10/88 letter to the Town, and/or in subsequent revisions to the NYCRR Part 703 Groundwater Standards.

**TABLE 3**  
**APPLICABLE AIR DISCHARGE**  
**REQUIREMENTS FOR AIR STRIPPING**  
**TREATMENT SYSTEM\***

Constituent	-Ambient Air Concentrations- NYSDEC Annual Guideline (ug/m3)
-----	
Vinyl Chloride	4.00E-01
Freon 13	3.00E-02
Methylene Chloride	1.17E+03
1,1-Dichloroethane	2.70E+03
1,2-Dichloroethane	2.63E+03
Chloroform	1.67E+02
1,1,1,-Trichloroethane	3.80E+04
Carbon Tetrachloride	1.00E+02
1,2-Dichloroethane	2.00E+01
Trichloroethylene	9.00E+02
1,2,-Dichloropropane	1.17E+03
Bromodichloromethane	3.00E-02
Tetrachloroethene	1.12E+03
Chlorodibromomethane	3.00E-02
Bromoform	1.67E+01
Benzene	1.00E+02
Toluene	7.50E+03
Ethyl Benzene	1.45E+03
(m) Xylene	1.45E+03
(o&p) Xylene	1.45E+03
(m) Dichlorobenzene	3.00E-02
(o) Dichlorobenzene	1.00E+03
(p) Dichlorobenzene	1.50E+03
Chloroethane	5.20E+04
1,1,-Dichloroethylene	6.67E+01
Chlorobenzene	1.17E+03
Ammonia	3.60E+02
-----	

\* Established per New York State Department of Environmental Conservation Air Guide No. 1 for Toxic Air Contaminants. If any federal National Ambient Air Quality Standards or National Emission Standards for Hazardous Air Pollutants are promulgated which are more stringent than these State guidelines, the more stringent standard shall apply.

also assist the Town in establishing the initiation of termination monitoring, as proscribed in the Consent Decree. During 2001, the Town received certification of its on-site laboratory to perform Method 601/602 VOC analyses under the New York State Department of Health's Environmental Laboratory Approval Program (ELAP).

## **2.3 Other Consent Decree Requirements**

### **2.3.1 Requirements for Ambient Air and Soil-Gas Quality Monitoring**

"RAP Attachment 2" in the Consent Decree requires the Town to monitor ambient air and soil gas quality in the vicinity of the Landfill on a quarterly basis. These monitoring efforts took place on March 20-23, May 20-21, August 2-3, and September 26-27, 2001, respectively. A New York State-certified outside laboratory performed the analyses. The results were compared to NYSDEC ambient air quality limits. These results were used to evaluate the impacts that the Landfill, together with all other OBSWDC operations, have on the local air quality.

In early 1998, it was recommended that the Town request approval from the NYSDEC to reduce the frequency of ambient air monitoring from quarterly to annual. This monitoring program is specifically mandated by the Consent Decree; however, review of the body of data generated to date indicates that a reduction in the frequency of this monitoring is warranted. Pending receipt of this approval, however, the Town is required to continue this monitoring program on a quarterly schedule.

### **2.3.2 Requirements for Thermal Oxidizer Stack Emissions Monitoring**

"RAP Attachment 2" in the Consent Decree also requires the Town to perform annual monitoring of the stack emissions from the thermal oxidizer. The purpose of this monitoring is to ensure that the landfill gas collected by the Town's migration prevention system, which contain trace amounts of organic compounds, undergoes complete high temperature destruction. Thermal oxidizer stack emissions monitoring for 2001 took place on October 18<sup>th</sup>. The results of this test were reported in the 2001 fourth quarter report, and the consultant's report of the findings was submitted in its entirety as Appendix H of that report.



## **SECTION 3.0**

### **GROUNDWATER TREATMENT FACILITY OPERATIONS**

#### **3.1 Theory of Operation**

A system of five (5) groundwater recovery wells, designated RW-1 through RW-5, was installed at the leading edge of the off-site VOC plume associated with the Landfill, in Bethpage State Park. The locations of the recovery wells, in relation to the Landfill and other site features, are shown on the Well Location Map in Appendix A.

The combined flow from all wells is directed through common transmission piping to the air stripper wet well. A triplex pump arrangement delivers the collected groundwater to the top of the air stripper, which contains proprietary packing media. As the groundwater passes through and wets the packing, it is contacted with air directed into the bottom of the air stripper via a blower. Dissolved VOCs pass from the liquid phase (groundwater) into the gas phase (air), and exit the stripper through a stack.

The treated groundwater is directed into a receiving wet well, where another triplex pump arrangement delivers it to a series of Town-owned recharge basins. The primary recharge basin, Recharge Basin No. 1, contains a system of eight diffusion wells and is located upgradient of the Landfill on the west perimeter of the OBSWDC. The secondary recharge basin is Town Recharge Basin No. 33, which is located on Winding Road across from the east face of the Landfill. The Town also uses an unnamed temporary recharge basin located north-northeast of the GTF building on an as-needed basis. The locations of these recharge basins are shown in Appendix A.

#### **3.2 Physical Plant**

The GTF consists of the following major components:

- five recovery wells, which deliver a combined maximum design flow of 1.5 million gallons per day (MGD);
- the treatment plant building, which houses the control room, laboratory, wet wells, pumps, acid-rinse system, and chemical holding tanks;

- the air stripper, which contains proprietary media;
- Recharge Basin No. 1, which contains eight diffusion wells; and
- transmission piping.

### **3.3 Initial Operating Conditions**

On April 1, 1992, the GTF began pumping approximately 1.5 MGD of groundwater from the five recovery wells located in Bethpage State Park. Flow was processed through the air stripper operating at a nominal 1,050 gallons per minute (GPM) forward hydraulic flow and approximately 10,400 standard cubic feet per minute (SCFM) of atmospheric air. The treatment plant design and the initial operating conditions are based on continuous 24 hours per day, seven days per week operation.

### **3.4 Monitoring Functions Related to Groundwater Treatment**

#### **3.4.1 Daily Operations Reports**

The control console located at the GTF provides continuous readouts to the operating personnel of pumpage rates from each recovery well, as well as various locations throughout the plant. Hourly, the operating personnel transfer these readings onto a "Daily Operations Report". One report is completed for each 8-hour shift. The report also provides a space for any written observations made by those personnel concerning plant operations. Copies of these reports were provided in Appendix B of the quarterly reports. The originals will be archived by the Town for at least five years following termination of the GTF, as per Consent Decree requirements.

The Town has developed computer software to assist in assembling these data into meaningful form for reporting purposes. On an ongoing basis, the Town enters the data into an Excel-based program, which sorts it into separate databases for further review and interpretation.

### 3.4.2 Organic Analyses Reports

The Town installed a gas chromatograph at the on-site laboratory to self-monitor the day to day treatment efficiency of the GTF. During 2001, influent and effluent samples were collected three times per week and analyzed for VOCs. In addition, weekly samples from each of the off-site recovery wells were collected and analyzed for VOCs.

The Town has also developed computer software to assist in assembling the VOC data into meaningful form for reporting purposes. At the conclusion of each analysis, the software enters all data into an Excel-based program, which sorts it into separate databases for further review and interpretation, and prints out a computer-generated "Organic Analyses Report" for inclusion in the quarterly reports. The Organic Analyses Reports for 2001 have been previously submitted as Appendix C of the respective quarterly reports.

### 3.4.3 Inorganic Analyses Reports

The Town also installed at the on-site laboratory, equipment to self-monitor selected inorganic water-quality parameters. These tests are performed to forewarn the operating personnel of changes in the influent or effluent, which may signal potential equipment problems requiring maintenance, or the need for other corrective action. Therefore, soluble iron is occasionally monitored through the air stripper to quantify the potential for iron fouling of the packing media. Dissolved oxygen is measured in the effluent to assure proper blower operation and to verify thorough aeration of the influent. Results from this testing are entered onto an "Inorganic Analyses Report" for inclusion in the quarterly reports. The Inorganic Analyses Reports for 2001 have been previously submitted as Appendix D of the respective quarterly reports.

### 3.4.4 State Pollution Discharge Elimination System (SPDES) Reports

In addition to self-monitoring, the Town sends monthly facility influent and effluent samples to a New York State-certified laboratory for organic and inorganic (effluent only) analyses. The analyses performed are those listed in Table 6 of the Consent Decree, titled "Analytical Methods", which is reproduced here in Table 4 as it appears in that document. The 2001 SPDES reports were submitted as Appendix E of the respective quarterly reports.

**TABLE 4**

<u>Parameter</u>	<u>Analytical Methods</u>		
	<u>Analytical Method</u>	<u>Sample Preservation</u>	<u>Holding Time</u>
Chloride	SM 407 A	None	28 Days
Ammonia	SM 417B, EPA 350.2	Cool to 4°C pH 2 w/H <sub>2</sub> SO <sub>4</sub>	28 Days
Iron SM 303B,	EPA 236.1	Field filter, Cool to 4°C, pH 2 w/HNO <sub>3</sub>	6 Months
Hardness	SM 314B, EPA 130.2	Cool to 4°C	6 Months
Alkalinity	SM 403, EPA 310.1	Cool to 4°C	14 Days
pH (measured in field)	SM 423	None	Analyze Immediately
Specific Conductance (measured in field)	SM 205	Cool to 4°C	28 Days
VOCs	EPA 601 and 602	Cool to 4°C	14 Days
Metals and others*	EPA 40 CFR 136.3 (Individual Analyses)	As per Individual method	As per Individual method

---

\*Aluminum, Copper, Lead, Manganese, Nickel, Sodium, Zinc, Chromium (VI), Chromium, Mercury, Potassium, Magnesium, Calcium, Total Dissolved Solids, Nitrate, Sulfate, Carbonate, Total Kjeldahl Nitrogen, Bicarbonate Alkalinity, Cyanide, Phenols, and Barium.

### **3.4.5 Air Stripper Stack Emissions Monitoring**

Air stripper stack emissions monitoring for 2001 was performed by LKB using the water-quality data generated by the Town's on-site laboratory and the GTF operational data recorded by Town personnel. A mass-balance approach was used to calculate VOC emissions from the air stripper stack. The results were compared to the stack discharge limits listed in the Consent Decree. One or more VOCs exceeded these limits each quarter. Therefore, dispersion modeling was performed to determine air-quality impacts at the downwind property boundary. The results from the air stripper stack emissions monitoring were submitted as Section 5.0 of the respective quarterly reports and are summarized Section 5.0 of this report.

## **3.5 Other Monitoring Functions**

### **3.5.1 Ambient Air and Soil-Gas Quality Monitoring**

The 2001 quarterly ambient air and soil-gas quality monitoring rounds were performed on March 20-23, May 20-21, August 2-3, and September 26-27, respectively. The ambient air testing procedure involves the taking of simultaneous, measured samples for VOC analyses, upwind and downwind of the Landfill. These results are used to evaluate the impacts that the Landfill, together with other OBSWDC operations, have on the local air quality. The soil gas quality testing provides useful information regarding the effectiveness of the landfill gas collection system. The 2001 quarterly ambient air and soil gas quality reports have been submitted previously as Appendix F of the respective quarterly monitoring reports. The consultant's annual summary report for this program is reproduced in its entirety as Appendix B of this report.

### **3.5.2 Thermal Oxidizer Stack Emissions Monitoring**

The annual thermal oxidizer stack emissions test was performed on October 18, 2001. The testing procedure involves the taking of simultaneous, measured samples for VOC analyses from the thermal oxidizer stack. Simultaneously, the burner operating conditions during the test are also monitored. The analytical results, after adjustment to standard conditions, demonstrate the degree of trace organics destruction achieved by the equipment. The consultant's report of his findings for this test was submitted previously as Appendix H of the 2001 fourth quarter report.

## **SECTION 4.0**

### **GROUNDWATER MONITORING PROGRAM**

#### **4.1 General**

In compliance with the Consent Decree for the Landfill, the following groundwater monitoring activities were performed during calendar year 2001:

- four rounds of quarterly water-level measurements collected on February 12, April 30, July 2, and October 1, 2001, respectively; and
- four rounds of quarterly groundwater quality sampling performed on February 13-16, May 1-3, July 2-6, and October 2-4, 2001, respectively.

In addition, during the fourth quarter of 2001, the groundwater sampling consultant conducted a detailed assessment of well conditions to identify maintenance and repair items. During this assessment, it was discovered that the well designations for Wells M-29A-R and M-30B-R had been transposed when the wells were installed. As these wells are located near each other and are screened in the same aquifer zone, the fact that their designations were transposed does not change the conclusions of previous monitoring reports.

The results from each monitoring round were submitted as Appendix G of each quarterly report. The consultant's annual summary report for 2001 is reproduced in Appendix C of this report. The results from each monitoring round are presented in Sections A through D of Appendix C, respectively.

#### **4.1.1 Field Sampling Protocols**

Except as noted in the quarterly monitoring reports, the field sampling protocols used during each 2001 monitoring round were those previously submitted to the NYSDEC by the Town in July of 1991. Quality Assurance/Quality Control (QA/QC) procedures utilized during each 2001 monitoring round consisted of one field blank analyzed for all parameters, and daily trip blanks analyzed for VOCs only. The blank samples were used to gauge the level of background contamination, if any, from sources other than the wells. In addition, one anonymous replicate sample was collected during each

sampling round and analyzed for all parameters to determine the laboratory precision of the analytical results. All field procedures were in conformance with Sections IV.A, B and C in Appendix A of the Consent Decree.

#### 4.1.2 Elevation of Well Screen Intervals

Elevations of the well screen intervals (in feet, relative to Mean Sea Level (MSL)) were assigned to the following zones for data correlation and water-level mapping purposes:

- Water Table Zone: 76 to 43 feet above MSL;
- Shallow Potentiometric Zone: 30 feet above to 30 feet below MSL; and
- Deep Potentiometric Zone: 65 to 157 feet below MSL.

The recovery well screen intervals range in elevation from 4 feet above MSL to 128 feet below MSL, and therefore intersect both the shallow and deep potentiometric zones.

#### 4.2 Hydraulic Monitoring

The purposes of the hydraulic monitoring are: 1) to delineate the effective capture zone of the groundwater recovery wells so that hydraulic containment of the VOC plume can be demonstrated; and 2) to determine the extent of mounding around the recharge basin(s), and the effect of that mounding, if any, on local groundwater flow patterns.

The following wells were incorporated into the 2001 hydraulic monitoring rounds:

- The 23 off-site monitoring wells (e.g., MW-5A, MW-5B, etc.);
- Existing Phase II and III wells (LF-1 through LF-4 and TW-1 through TW-3);
- Nassau County Monitoring Well N-9980 (N-9936), at Melville Road;
- Observation Wells OBS-1 and OBS-2;
- Recovery Wells RW-1 through RW-5;
- Upgradient/Recharge Basin Wells M-29A&B and M-30A&B;
- Replacement Wells M-29A-R, M-30B-R and TW-3-R; and
- Claremont Site Well Clusters EW-1, EW-2 and EW-3.

With the exception of Well MW-9A, which was dry during all four quarterly monitoring rounds, all of the monitoring wells specified in the Consent Decree were measured

during each of the hydraulic monitoring rounds performed during 2001. Static water levels were measured to the nearest 0.01-foot with an electronic water-level meter as the in-situ sampling pumps prevented the use of the steel tape and chalk method specified in the Consent Decree. The water-level data collected during 2001 are provided in Appendix C, and are summarized in Table 5 of this report.

The water-level data were converted to elevations relative to MSL and plotted according to well depth on a Location Plan. The water-level elevations were then contoured to produce the water table, shallow potentiometric and deep potentiometric surface maps shown in Figures 1 through 3 in each section of Appendix C. The approximate areal extent of the total VOC plume (based on the 2001 data) and the limiting flow lines of the effective capture zone were also drawn on these figures. Contour lines are dashed where the data points are less than optimum, and the limiting flow lines drawn through these areas are approximate.

#### 4.2.1 Overview of 2001 Water-Level Data

As shown in Table 5, water-level elevations in the various monitoring and observation wells showed a similar pattern during 2001. Specifically, water level elevations increased during the second quarter, relative to the first quarter, and decreased during the third and fourth quarters. Overall, groundwater elevations across the site exhibited downward trends during 2001. This pattern is attributed to a combination of a lack of natural seasonal recharge to the aquifer during the period from April through November and the fact that pumpage from the Town's recovery wellfield increased mid-year when Recovery Wells RW-2, RW-4 and RW-5 were returned to service. The rate at which water-level elevations decreased was highest during the fourth quarter of 2001.

Comparison of the fourth quarter water-level data to the first quarter water-level data in Table 5 indicates that during 2001, water-level elevations decreased in 44 of the 45 monitoring and observation wells measured by an average of 1.16 feet. The largest magnitude decreases were observed in Wells MW-6A (2.17 feet) and MW-9C (2.20 feet). The smallest magnitude decreases were observed in Wells TW-1 (0.26 feet) and LF-3 (0.37 feet). The magnitudes of the average water-level decrease for each of the three aquifer zones increased with depth, and ranged from 1.10 feet for the water table zone to 1.37 feet for the deep potentiometric zone.



**TABLE 5  
SUMMARY OF 2001 WATER-LEVEL DATA**

Well Number	Screened Interval	2001 Water-Level Data*				Net Change** During 2001
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
MW-5A	1	61.57	62.42	61.93	60.09	-1.48
MW-5B	2	62.81	62.45	61.95	62.10	-0.71
MW-6A	1	61.32	62.58	61.91	59.15	-2.17
MW-6B	2	61.07	62.29	61.71	59.94	-1.13
MW-6C	2	61.15	62.42	59.98	59.98	-1.17
MW-6D	2	61.30	62.57	61.87	60.16	-1.14
MW-6E	3	61.29	62.51	61.73	60.01	-1.28
MW-6F	>3	60.78	62.24	61.40	59.96	-0.82
MW-7A	1	58.39	60.24	59.12	56.96	-1.43
MW-7B	3	57.15	58.89	57.24	55.51	-1.64
MW-8A	1	61.50	62.52	62.96	60.42	-1.08
MW-8B	2	61.82	62.92	63.09	59.89	-1.93
MW-8C	3	62.64	63.61	63.02	61.63	-1.01
MW-9A	1	DRY	DRY	DRY	DRY	N/A
MW-9B	2	58.43	60.03	58.48	56.80	-1.63
MW-9C	3	57.91	59.46	57.48	55.71	-2.20
MW-9D	>3	57.87	58.60	58.20	56.70	-1.17
MW-10A	1	61.70	62.83	62.32	60.53	-1.17
MW-10B	2	61.38	62.58	61.82	60.12	-1.26
MW-10C	3	61.42	62.65	61.77	60.22	-1.20
MW-10D	3	61.37	61.54	61.55	60.12	-1.25
MW-11A	>2 & <3	53.83	56.21	55.03	52.58	-1.25
MW-11B	3	51.95	56.05	54.89	52.48	0.53
M-29A-R	1	65.02	65.53	64.96	63.86	-1.16
M-29B	1	66.78	67.33	66.79	65.60	-1.18
M-30A	1	66.35	67.30	66.95	65.48	-0.87
M-30B-R	1	66.05	66.71	66.26	65.02	-1.03
N-9980	1 & 2	47.45	48.91	48.01	46.44	-1.01
LF-1	2	62.66	63.85	63.26	61.75	-0.91
LF-2	2	63.03	63.84	63.72	62.08	-0.95
LF-3	2	66.61	66.50	66.10	66.24	-0.37
LF-4	2	66.48	67.01	66.67	65.53	-0.95
OBS-1	3	57.63	58.49	57.76	56.68	-0.95
OBS-2	3	56.61	58.37	57.11	55.21	-1.40
RW-1	2 & 3	48.44	49.61	50.62	48.00	-0.44
RW-2	2 & 3	58.05	59.96	48.66	46.59	-11.46
RW-3	2 & 3	42.72	43.89	46.64	44.29	1.57
RW-4	2 & 3	58.68	60.33	51.52	49.55	-9.13
RW-5	2 & 3	60.32	61.78	51.91	50.04	-10.28
TW-1	1	66.40	68.28	67.72	66.14	-0.26
TW-2	1	63.08	64.11	63.53	62.14	-0.94
TW-3-R	1	62.55	63.62	63.05	61.55	-1.00
EW-1A	1	62.71	NM	NM	61.77	-0.94
EW-1B	>1&<2	62.73	NM	NM	61.81	-0.92
EW-1C	2	62.90	NM	NM	62.10	-0.80
EW-2A	1	61.66	NM	63.11	61.00	-0.66
EW-2B	>1&<2	62.49	NM	63.26	61.20	-1.29
EW-2C	2	62.36	NM	63.19	61.02	-1.34
EW-3A	1	60.67	NM	61.35	59.33	-1.34
EW-3B	>1&<2	60.68	NM	61.16	59.38	-1.30
EW-3C	2	60.85	NM	61.20	59.40	-1.45

- 1 - Water-Table Zone (76 to 43 feet above Mean Sea Level (MSL)).  
2 - Shallow Potentiometric Zone (30 feet above to 30 feet below MSL).  
3 - Deep Potentiometric Zone (65 to 157 feet below MSL).  
\* - All water-level data are in feet relative to MSL.  
\*\* - Net Change is in feet.  
NM - not measured, N/A - not applicable.

The relative increase in water-level elevation noted for Well MW-11B appears to be an artifact of the data associated with an anomalous low water level reading during the first quarter 2001 hydraulic monitoring round. Water-level elevations in the recovery wells varied according to their on-line performance, and did not exhibit a discernable trend related to recharge.

Water-level elevations in all three aquifer zones were consistently highest in wells located north and west of the Landfill, and lowest in wells located south and east of the Landfill, confirming that the horizontal groundwater flow direction was from northwest to southeast across the site during 2001 with the exception of the radially inward flow within the effective capture zone of the recovery wellfield. This groundwater flow direction is consistent with previous data for the site, as well as the regional data reported by the United States Geological Survey. Although localized mounding occurs in the shallower zones of the aquifer in the vicinity of actively used recharge basins, the discharge of treated groundwater to the basins does not appear to have a significant effect on groundwater flow patterns in the deeper zones of the aquifer.

Based on the average decrease in water-level elevation between upgradient Well LF-4 and downgradient Well MW-11A (12.01 feet) and the distance between the wells (8,100 feet), the horizontal hydraulic gradient in the shallow potentiometric zone is approximately 0.0015. This hydraulic gradient is consistent with that observed for other areas of Long Island. Previous aquifer tests by Geraghty & Miller, Inc. determined that the groundwater flow velocity in the vicinity of the site is approximately 0.5 feet per day.

Review of the water-level data in Table 5 further indicates that the natural vertical hydraulic gradient in this area, which is downward, has been altered by pumpage from the Town's recovery wellfield, and to a lesser extent by unusual recharge conditions. Specially, at well clusters located outside the radius of influence of the Town's recovery wellfield, water-level elevations generally decrease with increasing well depth, indicating a downward vertical hydraulic gradient. In contrast, at well clusters located within the radius of influence of the recovery wellfields (e.g., Well Cluster MW-6), water-level elevations remain constant or increase with increasing well depth, indicating flat or upward vertical hydraulic gradients, respectively. These influences can be attributed to long-term pumping at the Town's recovery wellfield, which has lowered hydraulic head pressures in the shallow and deep potentiometric zones, where the recovery wells are screened.

The presence of flat or upward vertical hydraulic gradients at certain locations indicates that groundwater is no longer moving downward in the aquifer as it migrates downgradient at these locations. Note that a flat vertical hydraulic gradient exists at Well Cluster MW-10 and between the “B” and “C” wells at the Claremont Site’s Well Cluster EW-3, indicating that the Town’s recovery wellfield may also be influencing groundwater flow patterns at these locations.

In addition, since mid 2000, relatively strong upward hydraulic gradients have been observed at Well Cluster MW-8. Previously, downward gradients were observed at this well cluster, which is located outside the radius of the Town’ recovery wellfield. The upward gradients observed at this well cluster during 2001 may reflect localized hydraulic influences from the Claremont Site’s recovery wells, which are located a short distance to the south of Well Cluster MW-8.

Review of the various water-level maps in Appendix C indicates that the overall size and position of the capture zone remained consistent during 2001, although some variation was noted from quarter to quarter. The GTF maintained an average on-line performance of 69 percent during 2001, and remediated approximately 409 million gallons of groundwater at an average influent flow rate of 1.11 MGD. Moreover, the water level maps shown in Appendix C indicate that the full extent of the Landfill’s VOC plume was being captured during 2001.

#### **4.3 Groundwater Quality and Quarterly Monitoring**

In fulfillment of Consent Decree requirements, four rounds of quarterly groundwater sampling were conducted on February 13-16, May 1-3, July 2-6, and October 2-4, 2001, respectively.

As per Consent Decree requirements, the following 16 wells were sampled during each round:

Off-Site Wells:	MW-5B MW-6A, MW-6B, MW-6C, MW-6E and MW-6F MW-7B MW-8A and MW-8B MW-9B and MW-9C MW-11A and MW-11B
Observation Well:	OBS-1
Upgradient Well:	M-30B-R
Landfill Well:	LF-1

In keeping with a previous recommendation, Well MW-9D was also sampled during the third quarter round to provide current data for the deep potentiometric zone of the aquifer at this location, which is downgradient of the Landfill and upgradient of the Town's recovery wellfield.

The groundwater samples from all four quarterly monitoring rounds were analyzed for the VOCs, total (unfiltered) metals, dissolved (filtered) metals and leachate indicator parameters listed in Table 4. The only exceptions were the samples from Well LF-1, which were analyzed for leachate indicator parameters only, as per Consent Decree requirements.

The analytical results from each quarterly monitoring round are summarized in Sections A through D of Appendix C, respectively. The certified laboratory data reports were included in Appendix G of the respective quarterly reports. No artifact compounds or blank contaminants were reported during any of the 2001 quarterly monitoring rounds, and duplicate sample results were reported to be within acceptable limits for all analyses.

The groundwater recovery system was designed to capture and treat the VOC portion of the Landfill plume. Therefore, the data analysis focuses on VOC contamination. Analysis of the metal and leachate indicator results was limited to a comparison of those data to VOC plume dimensions, and a compilation of exceedances of the groundwater aquifer requirements for these parameters based on the limitations provided in Table 2.

The VOC data collected during the four 2001 quarterly monitoring rounds were evaluated on the basis of their observed 2001 ranges, and comparison to pre-2001 quarterly monitoring results and the 1991 baseline sampling data. To facilitate this evaluation, summary tables have been incorporated into the text of this report. These tables are intended to demonstrate annual and long-term trends in the data, and therefore differ from those used in the quarterly reports. Specifically, the 2001 VOC data are presented as the minimum, maximum and average concentrations detected, rather than as specific results for each quarter. The pre-2001 VOC data are presented as average concentrations for both 2000 and the combined period from 1992-2000, rather than as historical minimum, maximum and average values. The baseline 1991 data are presented as the actual concentrations detected.

Also, it should be noted that the ranges and averages given for Well OBS-1 reflect only those quarters for which data are available. During 2001, Well OBS-1 was sampled during all four quarterly monitoring rounds. Well OBS-1 has been sampled during 27 of the 38 monitoring rounds performed since start-up of the GTF. Well OBS-2 was sampled as a substitute well during the 11 quarterly monitoring rounds when Well OBS-1 was damaged and could not be sampled. However, since Well OBS-2 was not sampled as a substitute well during 2001, the previous results for this well are not discussed in this report. Moreover, Well MW-9D has only been sampled four times since start-up of the GTF, specifically during the third quarter rounds of 1998, 1999, 2000 and 2001. The ranges and averages given for Well MW-9D are based on the results from these four sampling events.

Consistent with the quarterly reports, the following subsections discuss the distribution of total VOC concentrations, as well as the nature and extent of the three distinct VOC groupings which have historically been detected in groundwater: volatile halogenated organics, excluding tetrachloroethene (VHOs); aromatic hydrocarbons; and tetrachloroethene. Plume maps depicting the approximate areal extent of these VOC groupings, based on the results from each 2001 quarterly monitoring round, are provided in Figures 4 through 6 in each section of Appendix C, respectively.

#### 4.3.1 Analysis of 2001 Total VOC Data

VOCs were detected in seven of the 16 wells sampled for VOCs during 2001, including six of the 15 wells sampled quarterly (MW-6B, MW-6C, MW-7B, MW-8A, MW-8B and OBS-1), and Well MW-9D, which was sampled during the third quarter monitoring

round. Except for Wells MW-6E and MW-11A, which were non-detectable for VOCs during 2001 but contained sporadic low concentrations of VOCs during 2000, and Well MW-8B, which was non-detectable for VOCs last year, these are the same wells in which VOCs were detected last year.

Moreover, in addition to Wells MW-5B, MW-6A, MW-9C, in which VOCs were previously detected but are currently at non-detectable levels; Well OBS-2, which was non-detectable for VOCs when it was last sampled during the third quarter of 2000 but has previously contained VOCs; and Well Clusters MW-10 and EW-3; which contained VOCs during the expanded third quarter 1998 monitoring round, these are the wells in which VOCs have historically been detected.

The distribution of total VOCs detected in the wells sampled during 2001, contrasted against previous data, is summarized in the following table:

<b>TOTAL VOC CONCENTRATIONS IN 2001 GROUNDWATER SAMPLES*</b>						
Well Number	Observed (Min.)	2001 (Max.)	Range (Avg.)	2000 Average	1992-2000 Average	Baseline 1991 Data
MW-6B	12	23	17	21	16	105
MW-6C	8	11	10	14	7	31
MW-7B	144	276	195	74	117	157
MW-8A	12	21	16	128	390	507
MW-8B	ND	0.5	0.1	ND	4	43
MW-9D	79	79	79	95	90	ND
OBS-1	6	42	20	64	159	8

\* all concentrations in parts per billion (ppb), ND = not detectable.

Note that, relative to the 2000 averages, the 2001 average concentrations were lower for Wells MW-6B, MW-6C, MW-8A, MW-9D and OBS-1, comparable for Well MW-8B, and higher for Well MW-7B. The decreases in average total VOC concentration in five of the seven wells are consistent with the downward trends in total VOC concentrations observed in these wells last year. The comparable findings for Well MW-8B reflect the sporadic, low concentrations of total VOCs detected in this well since 1995. The increase in average total VOC concentration in Well MW-7B during 2001, relative to

2000, is believed to be attributable to a temporary westward shift in the position of the total VOC plume caused by Recovery Well RW-5 being off-line for repairs until early June.

Comparison of the 2001 average total VOC concentrations to the 1992-2000 averages indicates temporal decreases in total VOC concentration for Wells MW-8A, MW-8B, MW-9D and OBS-1, slight temporal increases for Wells MW-6B and MW-6C, and a relatively large magnitude temporal increase for Well MW-7B. The temporal decreases in average total VOC concentration observed for four of the seven wells are consistent with the overall temporal decrease in groundwater VOC concentrations observed since start-up of the GTF. Previously, decreasing trends were also observed for Wells MW-5B, MW-6A, MW-6E, MW-9C and OBS-2, which are now non-detectable for VOCs. The slight temporal increases observed for Wells MW-6B and MW-6C are artifacts of the data caused by plume dilution associated with the full-time discharge of treated groundwater to Town Recharge Basin No. 33 during the period from October 1994 through October 1996. As a result of this dilution, the 1992-2000 averages for these two wells are biased low. Overall, total VOC concentrations in these two wells have also shown fluctuating but gradually decreasing trends since start-up of the GTF. The relatively large magnitude temporal increase observed for Well MW-7B reflects the increase in total VOC concentrations detected in this well during 2001. As noted previously, this increase is believed to reflect a temporary westward shift in the position of the VOC plume. Prior to 2001, total VOC concentrations in Well MW-7B showed a fluctuating but generally decreasing trend.

Compared to the baseline 1991 data, the 2001 average total VOC concentrations were lower for all wells except Wells MW-7B, MW-9D and OBS-1. The relative increases noted for Wells MW-9D and OBS-1 can be attributed to downgradient migration of the Landfill VOC plume toward the Town's recovery wellfield subsequent to start-up of the GTF. The relative increase noted for Well MW-7B is believed to reflect a shift in the position of the plume, as noted above.

During 2001, the general pattern of total VOC concentrations in the six wells monitored quarterly was similar to the water-level elevation data in that the highest and lowest concentrations occurred primarily during the second and fourth quarters, respectively. Overall, total VOC concentrations in the wells sampled quarterly showed decreasing trends during 2001. This finding is consistent with the overall temporal increase in groundwater VOC concentrations observed since start-up of the GTF, and indicates

that groundwater quality is continuing to improve in response to the ongoing groundwater remediation.

Figures 1, 2 and 3 in Sections A through D of Appendix C show the approximate areal extent of the total VOC plume in each aquifer zone, based on the results from each quarterly monitoring round, respectively. The current dimensions of the plume include the data from the additional wells sampled during the third quarter 1998 monitoring round. As shown in these figures, the occurrence of VOCs in the water-table zone is limited to the area immediately downgradient of the Claremont Site. In contrast, the occurrence of VOCs in the shallow potentiometric zone extends from the Landfill downgradient to the recovery wellfield, and shows the greatest areal extent of the three aquifer zones. It should be noted, however, that the portion of the plume shown around Wells MW-10B and EW-3C is attributed to the Claremont Site. The occurrence of VOCs in the deep potentiometric zone is limited to the area downgradient of the Landfill and in the immediate vicinity of the Town's recovery wellfield.

Apart from the portion of the plume in the vicinity of Wells MW-10B and EW-3C, which is attributed to the Claremont Site, the current plume dimensions are somewhat smaller relative to the 1991 plume boundaries. These findings, together with the temporal decrease in total VOC concentrations observed since start-up of the GTF, indicate that groundwater quality is continuing to improve in response to the ongoing remediation.

The Consent Decree specifies a Groundwater Aquifer Requirement of 50 ppb for total VOCs. During 2001, this limit was exceeded in Wells MW-7B and MW-9D. Prior to 2001, this limit was also exceeded in Wells MW-8A and OBS-1. These are the wells that have historically exceeded this limit. The magnitudes of the exceedances have been gradually decreasing since start-up of the GTF. The exceedance noted for Well MW-9D reflects the continued downgradient migration of the deeper portion of the Landfill plume toward the Town's recovery wellfield subsequent to start-up of the GTF.

#### 4.3.2 Analysis of 2001 VHO Data

VHOs were detected in four of the seven wells in which VOCs were detected during 2001, including three of the wells sampled quarterly (MW-7B, MW-8A and OBS-1) and Well MW-9D, which was sampled during the third quarter round. Except for Wells MW-6C and MW-11A, which were non-detectable for VHOs during 2001 but contained



sporadic low concentrations of VHOs during 2000, these are the same wells in which VHOs were detected last year.

Moreover, in addition to Wells MW-5B, MW-6A, MW-6B, MW-6E, MW-8B and MW-9C, in which VHOs have previously been detected but are currently at non-detectable levels; and Well OBS-2, which was non-detectable for VOCs when it was last sampled during the third quarter of 2000 but previously contained VHOs, these are the wells in which VHOs have been detected during quarterly monitoring. VHOs were also detected in Wells MW-10B, MW-10C, MW-10D and LF-1 during the expanded third quarter 1998 monitoring round.

The distribution of total VHOs detected in the wells sampled during 2001, contrasted against previous data, is summarized in the following table:

<b>TOTAL VHO CONCENTRATIONS IN 2001 GROUNDWATER SAMPLES*</b>						
Well Number	Observed (Min.)	2001 (Max.)	Range (Avg.)	2000 Average	1992-2000 Average	Baseline 1991 Data
MW-7B	19	26	23	7	17	17
MW-8A	0.5	1.4	1	9	167	65
MW-9D	50	50	50	64	57	ND
OBS-1	5	10	6	16	70	13

\* all concentrations in parts per billion (ppb), ND = not detectable.

Note that, relative to the 2000 and 1992-2000 average concentrations, the 2001 average concentrations were lower for all wells except Well MW-7B. With respect to the wells sampled quarterly, these relative decreases are consistent with the overall temporal decrease in total VHO concentrations observed across the site since start-up of the GTF. Moreover, the 2001 results for Wells MW-8A and OBS-1 are the lowest total VHO concentrations detected in these wells since the start of quarterly monitoring. The relatively large magnitude temporal increase in total VHO concentrations in Well MW-7B is believed to be attributable to a temporary westward shift in the position of the VOC plume, as noted previously. The slight decrease in the "average" total VHO concentration in Well MW-9D during 2001, relative to 2000, most likely reflects variation in VHO plume concentration at this location.

Comparison of the 2001 average total VHO concentrations to the baseline 1991 data indicates relative decreases in concentration for Wells MW-8A and OBS-1, and relative increases for Well MW-7B and MW-9D. The relative decreases noted for Wells MW-8A and OBS-1 are consistent with the overall decrease in groundwater total VHO concentrations observed since start-up of the GTF. The relative increase noted for Well MW-7B is believed to be attributable to a shift in the position of the VOC plume, as mentioned above. The relative increase noted for Well MW-9D is believed to reflect variation in VHO plume concentration at this location.

During 2001, the general pattern of total VHO concentrations in the three wells monitored quarterly was similar to the total VOC results in that the highest and lowest concentrations occurred primarily during the second and fourth quarters, respectively. However, overall, total VHO concentrations remained fairly consistent in all three wells. This is expected, and reflects the fact that as the remediation progresses, the magnitudes of the improvement in water quality become less pronounced and therefore harder to distinguish on a short-term basis.

Figure 4 in Sections A through D of Appendix C shows the approximate areal extent of total VHOs in groundwater based on the results from each quarterly monitoring round. As shown, the current dimensions of the VHO plume are generally comparable to the 2000 findings, and the plume maps include the data from the additional wells sampled during the expanded third quarter 1998 monitoring round. Note that the configuration of the VHO plume has changed somewhat relative to the baseline 1991 plume boundaries. Specifically, in addition to the "hole" associated with the lack of VHO detections in Well MW-5B, the eastern side of the plume has been extended to reflect the VHO detections in Well Clusters MW-10 and EW-3, which are associated with the off-site plume from the Claremont Site.

A total of eleven specific VHO compounds was detected in the quarterly groundwater samples collected during 2001. Five of these VHOs (1,2-dichloroethene, trichloroethene, vinyl chloride, 1,1-dichloroethane and 2-chloroethylvinyl ether) were detected in the wells sampled quarterly. With the exception of 2-chloroethylvinyl ether, these are the VHOs that have been detected in groundwater on a regular basis. The other six VHOs (dichlorodifluoromethane, chloroethane, fluorotrichloromethane, 1,1,1-trichloroethane, methylene chloride and 1,2-dichloroethane) were only detected in the third quarter 2001 sample from Well MW-9D. The concentrations of individual VHO

species detected in the sample from Well MW-9D ranged from 0.5 ppb to 14 ppb, and averaged 5 ppb.

The nature and extent of the five VHO compounds detected in the wells sampled quarterly during 2001 are summarized below:

<b>VHO COMPOUNDS DETECTED IN 2001 GROUNDWATER SAMPLES*</b>					
Compound	Detection** Frequency	Observed 2001 Range			Grndwtr Limits***
		(Min.)	(Max.)	(Avg.)	
1,2-dichloroethene	6/12	0.9	8.6	3.7	5
Trichloroethene	9/12	0.5	25	10	5
Vinyl chloride	1/12	1.1	1.1	1.1	2
1,1-dichloroethane	1/12	0.5	0.5	0.5	5
2-chloroethylvinyl ether	1/12	3.1	3.1	3.1	5

\* all concentrations in ppb.

\*\* frequency each compound was detected in the samples in which these five VHOs were detected.

\*\*\* see Table 1.

The highest concentrations of 1,2-dichloroethene were detected in the first and second quarter samples from Well OBS-1. This well also contained the only detections of vinyl chloride, 1,1-dichloroethene and 2-chloroethylvinyl ether. The highest concentrations of trichloroethene were detected in Well MW-7B. Overall, the pattern of VHO detections was similar to that observed during 2000, except that last year the highest concentrations of trichloroethene were detected in Well MW-8A.

Exceedances of the Groundwater Aquifer Requirements imposed by the Consent Decree occurred in Wells MW-7B, MW-9D and OBS-1 during 2001. For Well MW-7B, exceedances were noted for trichloroethene during all four monitoring rounds. For the sample collected from Well MW-9D, exceedances were noted for dichlorodifluoromethane, chloroethane, 1,1-dichloroethane, 1,2-dichloroethene, and vinyl chloride. For Well OBS-1, exceedances were noted for 1,2-dichloroethene during the first and second quarter rounds. The number and magnitudes of the exceedances noted during 2001 are less than those observed during 2000, which is in keeping with the gradual temporal reduction in groundwater VOC concentrations observed since start-up of the GTF.

### 4.3.3 Analysis of 2001 Aromatic Hydrocarbon Data

Aromatic hydrocarbons were detected in five of the seven wells in which VOCs were detected during 2001, including four of the wells sampled quarterly (MW-6B, MW-6C, MW-8A and OBS-1), and Well MW-9D, which was sampled during the third quarter monitoring round.

With the exception of Well MW-6E, which was non-detectable for VOCs during 2001 but contained a 3-ppb total aromatic hydrocarbon concentration during the third quarter 2000 sampling round, these are the same wells in which aromatic hydrocarbons were detected last year. Moreover, in addition to Wells MW-5B, MW-6A, MW-9C and OBS-2, in which low levels of aromatic hydrocarbons were previously detected but are currently at non-detectable levels, these are the wells in which aromatic hydrocarbons have been detected during quarterly monitoring. Aromatic hydrocarbons were also detected in Landfill Wells LF-1 and LF-2 during the expanded third quarter 1998 monitoring round.

The distribution of total aromatic hydrocarbons detected in wells sampled during 2001, contrasted against previous data, is summarized below:

<b>TOTAL AROMATIC HYDROCARBONS IN 2001 GROUNDWATER SAMPLES*</b>						
Well Number	Observed (Min.)	2001 (Max.)	Range (Avg.)	2000 Average	1992-2000 Average	Baseline 1991 Data
MW-6B	12	23	17	21	16	48
MW-6C	8	11	10	14	7	30
MW-8A	ND	0.5	0.1	0.3	1.3	2
MW-9D	27	27	27	28	28	ND
OBS-1	2	28	11	41	82	110

\* all concentrations in ppb, ND = not detectable.

Note that, relative to the 2000 average concentrations, the 2001 average concentrations were lower for Wells MW-6B, MW-6C and OBS-1, and comparable for Wells MW-8A and MW-9D. The decreases noted for three of the five wells reflect the downward trends in groundwater aromatic hydrocarbon concentrations observed in these wells since last year. The comparable values noted for Well MW-8A reflect the sporadic, low detections of aromatic hydrocarbons detected in this well. The

comparable values noted for Well MW-9D indicate that aromatic hydrocarbon concentrations in the deep potentiometric zone of the aquifer at this location remained relatively constant over the last year.

Comparison of the 2001 average total aromatic hydrocarbon concentrations to the 1992-2000 averages indicates temporal decreases in concentration for Wells MW-8A and OBS-1, comparable values for Well MW-9D, and slight increases for Wells MW-6B and MW-6C. The decreases noted for Wells MW-8A and OBS-1 are consistent with the overall temporal decreases in groundwater aromatic hydrocarbon concentrations observed in these wells since start-up of the GTF. The comparable values noted for Well MW-9D indicate that aromatic hydrocarbon concentrations in the deep potentiometric zone of the aquifer at this location have remained relatively constant since 1998. The slight increases in concentration noted for Wells MW-6B and MW-6C are artifacts of the data, as discussed previously in Section 4.3.1.

Comparison of the 2001 average concentrations to the 1991 baseline data indicates decreases for all wells except Well MW-9D, which increased from non-detectable to 27 ppb. As noted previously, this increase reflects downgradient migration of the deeper portion of the Landfill plume at this location towards the Town's recovery wellfield subsequent to start-up of the GTF.

During 2001, total aromatic hydrocarbon concentrations showed fluctuating, but generally decreasing trends in Wells MW-6B, MW-6C and OBS-1. Similar to the water-level, total VOC and total VHO results, the highest and lowest total aromatic hydrocarbon concentrations tended to occur during the second and fourth quarters, respectively.

Figure 5 in Sections A through D of Appendix C shows the approximate areal extent of the aromatic hydrocarbon plume based on the results from each of four 2001 quarterly monitoring rounds, respectively. Comparison of these figures to previous findings indicates that the dimensions of the aromatic hydrocarbon plume have decreased somewhat relative to the baseline 1991 plume boundary.

A total of five aromatic hydrocarbon species were detected during 2001: benzene, chlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene and xylene. In general,

these are the aromatic hydrocarbon species that have historically been detected in groundwater samples.

The nature and extent of aromatic hydrocarbon compounds in groundwater, based on the 2001 data, are summarized below:

<b>AROMATIC HYDROCARBONS DETECTED IN 2001 GROUNDWATER SAMPLES*</b>					
Compound	Detection**	Observed 2001 Range			Grndwtr Limits***
	Frequency	(Min.)	(Max.)	(Avg.)	
Benzene	12/14	1.0	25	6.2	1
Chlorobenzene	14/14	0.5	11	3.7	5
1,4-dichlorobenzene	11/14	0.6	4.4	2.9	3
1,2-dichlorobenzene	11/14	0.5	1.7	1.2	3
Xylene (total)	2/14	0.6	9.9	5.3	5

\* all concentrations in parts per billion (ppb).

\*\* frequency each compound was detected in samples in which aromatic hydrocarbons were detected.

\*\*\* see Table 2.

Benzene was detected in Wells MW-6B and MW-6C during all four 2001 quarterly monitoring rounds, in the first, second and fourth quarter samples from Well OBS-1, and in the third quarter sample from Well MW-9D. The highest levels of benzene were detected in Wells MW-9D and OBS-1. Chlorobenzene was detected in Wells MW-6B, MW-6C and OBS-1 during all four 2001 quarterly monitoring rounds, in Well MW-8A during the second quarter monitoring round, and in the third quarter sample from Well MW-9D. The highest concentrations of chlorobenzene were consistently detected in Well MW-6B, followed by Well MW-6C. Dichlorobenzenes were detected in all four samples from Wells MW-6B and MW-6C, and in the first, second and third quarter samples from Well OBS-1. 1-4-dichlorobenzene is the isomer detected most often and at the highest concentrations. Xylene was detected in Well MW-6B during the first quarter monitoring round, and in the third quarter sample from Well MW-9D. The highest concentration of xylene was detected in the sample from Well MW-9D.

Exceedances of the Groundwater Aquifer Requirements imposed by the Consent Decree were noted for benzene, chlorobenzene, 1,4-dichlorobenzene and xylene. All of these exceedances occurred in Wells MW-6B, MW-6C and MW-9D. No exceedances

for aromatic hydrocarbons occurred in Wells MW-8A and OBS-1 during 2001. All but one of the detections of benzene exceeded the 1-ppb limit. Exceedances for chlorobenzene occurred in Well MW-6B during the first, second and fourth quarter monitoring rounds. The exceedances for 1,4-dichlorobenzene occurred in Wells MW-6B during the second and third quarter monitoring rounds, and in Well MW-6C during all four quarterly monitoring rounds. One exceedance for xylene occurred in the third quarter sample from Well MW-9D. No exceedances were noted for 1,2-dichlorobenzene during 2001.

#### 4.3.4 Analysis of 2001 Tetrachloroethene Data

Tetrachloroethene was detected in Wells MW-7B, MW-8A and OBS-1 during all four 2001 quarterly monitoring rounds. It was also detected in Well MW-8B during first quarter monitoring round, and in the sample collected from Well MW-9D during the third quarter monitoring round. With the exception of Well MW-8B, which was non-detectable for tetrachloroethene during 2000, these are the same wells in which tetrachloroethene was detected last year.

The highest concentrations of tetrachloroethene were detected in Wells MW-7B (120-250 ppb) and MW-8A (11-20 ppb). Lower concentrations were detected in Wells MW-9D (2.3 ppb) and OBS-1 (0.8-3.7 ppb). Only a trace level (0.5 ppb) was detected in Well MW-8B. Groundwater tetrachloroethene concentrations showed fluctuating but generally decreasing trends during 2001.

Compared to last year's data, tetrachloroethene concentrations increased in Well MW-7B, decreased in Wells MW-8A and OBS-1, and remained essentially unchanged in Wells MW-8B and MW-9D. The increase in tetrachloroethene concentration in Well MW-7B, relative to last year, is believed to reflect a shift in the position of the VOC plume, as discussed previously in Section 4.3.1. The decreases noted for Wells MW-8A and OBS-1 are consistent with the overall improvement in groundwater quality observed in these wells since last year. The comparable findings for Well MW-8B reflect the sporadic, low concentrations of tetrachloroethene detected in this well. The comparable findings for Well MW-9D indicate that tetrachloroethene levels in the deep potentiometric zone of the aquifer at this location have remained relatively unchanged since last year.

Compared to the 1992-2000 data, except for the increase in tetrachloroethene concentrations in Well MW-7B during 2001, groundwater tetrachloroethene levels have shown gradually decreasing trends since start-up of the GTF.

Figure 6 in Sections A through D of Appendix C shows the approximate areal extent of the tetrachloroethene plume based on the results from each of the 2001 quarterly monitoring rounds, respectively. As shown, the tetrachloroethene plume extends from the area upgradient of Well MW-8A, downgradient to Recovery Wells RW-3, RW-4 and RW-5. All four figures are similar, and include the results from the additional wells sampled during the expanded third quarter 1998 monitoring round. The current extent of the tetrachloroethene plume is consistent with that shown by pre-2001 quarterly monitoring rounds, and corresponds to the eastern component of the tetrachloroethene plume delineated by the baseline 1991 monitoring data. The western component of the tetrachloroethene plume, which was delineated on the baseline 1991 results as a separate plume, is shown as an extension of the eastern component of the tetrachloroethene plume in Figure 6 in each section of Appendix C to more accurately reflect the distribution of tetrachloroethene in groundwater.

All concentrations of tetrachloroethene detected in Wells MW-7B and MW-8A during 2001 exceeded the 5-ppb Groundwater Aquifer Requirement. Previously, this limit was also exceeded in Well OBS-1. Overall, the frequency and magnitude of exceedances for tetrachloroethene have been gradually decreasing since start-up of the GTF.

#### 4.3.5 Delineation of the VOC Plume

The position of the total VOC plume, which is a composite of the three site-specific VOC groupings, has been delineated on the water table and potentiometric surface maps in Figures 1 through 3 in each section of Appendix C. The outlines (shaded areas) represent the approximate areal extent of the total VOC plume based on the findings of the respective 2001 quarterly monitoring rounds. A review of the total VOC plume outlines in these figures indicates that the approximate length of the plume downgradient of the landfill is 2,400 feet, and the maximum width of the plume is about 3,600 feet. Overall, the dimensions of the plume are consistent with the 2000 data.



#### **4.3.6 Analysis of 2001 Inorganic Data**

Inorganic data collected during the 2001 quarterly monitoring rounds are summarized in Tables 4 and 5 of each section in Appendix C. Overall, the distribution of leachate indicators in the aquifer remained relatively constant during 2001, and was similar to that of previous quarterly monitoring efforts and the 1991 baseline sampling round. It is noted, however, that the extent and concentration of leachate indicator parameters in groundwater appear to also be decreasing over time at most locations in response to the ongoing groundwater remediation. However, certain leachate indicators were detected in Wells MW-8A and MW-8B on a regular basis during 2001. The presence of leachate indicators in these two wells is believed to reflect localized hydraulic influences associated with the Claremont Site's recovery wellfield, which is located a short distance south of these wells and screened in the water table zone of the aquifer. Specifically, it appears that pumpage from this wellfield is causing the Landfill plume in this area to shift eastward.

The overall distribution of inorganic parameters within the aquifer during 2001 was evaluated based on the nature and occurrence of exceedances of the Groundwater Aquifer Requirements listed in Table 2. During 2001, exceedances were noted for ammonia, chloride, iron, manganese, mercury (Well MW-9D only), phenols, sodium, and total dissolved solids. Exceedances occurred in Wells MW-5B, MW-6B, MW-6C, MW-6E, MW-6F, MW-7B, MW-8A, MW-8B, MW-9B, MW-9C, MW-9D, LF-1 and OBS-1. Nearly all of the exceedances occurred in wells located directly downgradient of the Landfill, and primarily occurred in Wells MW-5B and OBS-1, and Well Clusters MW-6, MW-8 and MW-9.

### **4.4 Hydraulic Evaluation of the Groundwater Remediation System**

#### **4.4.1 Effective Capture Zone**

Figures 1 through 3 in each section of Appendix C show the configuration of the water table, and the shallow and deep potentiometric surfaces, respectively, relative to the position of the total VOC plume based on the findings of the 2001 quarterly monitoring rounds. In addition, the limiting flow lines depicting the capture zone are shown on the shallow and deep potentiometric surface maps.

Note that, due to downtime associated with repair and maintenance of the various recovery wells and treatment system appurtenances, the GTF was not fully operational during the first and second quarters of 2001. As a result, the capture zone was not developed to its maximum extent during this period. Nevertheless, analysis of the limiting flow lines in Figures 1 through 3 in each section of Appendix C indicates that the Landfill VOC plume was being captured during this period.

Review of the 2001 water-level data, and prior data, indicates that the current capture zone developed soon after start-up of the GTF, and that its size and shape has remained stable over time. For example, comparison of the water-level data for the April 30, 1992 round (i.e., the first monthly water-level round following start-up of the GTF) with the pre-pumping water-level data from the October 1991 round, indicates that water levels in the vicinity of the capture zone initially declined an average of 10.5 feet in response to pumping. Specifically, pre-pumping water levels ranged from approximately 65.3 to 66.8 feet above MSL, whereas pumping water levels ranged from approximately 52.2 to 57.3 feet above MSL.

Since the April 30, 1992 round, the average water-level elevation in the recovery wells during pumping conditions has ranged from a low of 47.5 feet above MSL following the 1995 drought, to a high of 56.5 feet above MSL following the 1997-98 El Nino winter. Water-level elevations in the recovery wells also show what appear to be relatively minor fluctuations that can be correlated to normal seasonal variations in recharge.

During the period from April 1, 1992 through October 1, 2001, various recovery wells have been temporarily off-line on the dates that the hydraulic monitoring rounds were conducted. While off-line, water levels in these wells recovered approximately 7 to 12 feet relative to the other wells, but remained approximately 3 to 5 feet below their pre-pumping levels due to the drawdown associated with the other recovery wells.

Including the wells around the various recharge basins, which may be influenced by mounding, water-level elevations in 44 of the 45 monitoring and observation wells for which comparative data are available decreased by an average of 1.13 feet during 2001, and averaged approximately 5.8 feet lower relative to the average of the July and October 1991 (pre-pumping) baseline water-level data for each well. Drawdown in the capture zone during 2001 is approximately 13 feet relative to the water-level elevation in the recovery wells prior to start-up of the GTF.

Based upon the limiting flow lines of the capture zones, as presented in Figures 2 and 3 of each section of Appendix C, the average facility flow of 1.11 MGD (see Section 6.0) during 2001 has adequately maintained hydraulic control over the Landfill VOC plume. Furthermore, control of the VOC plume has been maintained during the thirty-nine operating quarters since start-up of the GTF, where average facility flow has varied from approximately 0.90 to 1.48 MGD regardless of the seasonal effects. Therefore, the frequency of hydraulic monitoring can continue to be safely reduced to the present quarterly from the original monthly schedule.

#### 4.4.2 Effects of Mounding Due to Recharge

During 2000 and 2001, the mounding effects associated with the various recharge basins were not as pronounced due to a somewhat decreased flow rate associated with recovery well downtime, and the fact that the effluent from the GTF was distributed among the available recharge basins.

#### 4.4.3 Evaluation of System Pumpage

System pumpage during 2001 was evaluated based on the information regarding total system pumpage and individual recovery well flow presented in the quarterly monitoring reports. During 2001, the average daily flow through the air stripper was 1.11 MGD. The GTF was not fully operational during the first five months of 2001 due to repair and maintenance of the various recovery wells and treatment system appurtenances. The majority of the downtime recorded was associated with Recovery Wells RW-2, RW-4 and RW-5 being off-line until early June 2001 when repairs to their underground high-voltage power supply lines could be completed. The lines for all five recovery wells were replaced during the period from December 6-20, 2001. There was also limited downtime due to maintenance and repair of the various treatment system appurtenances, weather-related shutdowns, and two Town holidays. Quarterly pumpage records and system flow data for 2001 were summarized by LKB and reproduced as Table 5 in each section of Appendix C.

## **SECTION 5.0**

### **AIR STRIPPER STACK EMISSIONS MONITORING RESULTS**

LKB used the water-quality data generated at the Town's on-site laboratory and the operational data recorded by Town personnel to calculate the average concentrations of individual VOCs in the air stripper stack exhaust during each quarter of 2001. The results were compared to the stack discharge limits established by the Consent Decree and the short-term and annual guideline concentrations (SGCs and AGCs, respectively) published by the NYSDEC.

The results from this comparison indicated that while the stack discharge limits and SGCs were consistently satisfied, the concentrations of one or two VOCs were higher than their respective AGCs during all four quarters of 2001. Therefore, air dispersion modeling was performed to calculate the concentrations of VOCs at the downwind property boundary.

The same model (Industrial Source Complex – Short Term Model (a.k.a., "ISCST3")) and receptor grid were used to maintain consistency with previous monitoring efforts. However, six years of weather data from Islip-MacArthur Airport (1989-1994) were used in the assessment model, rather than the one year of weather data from the OBSWDC (1985) previously utilized, as these data were believed to be more representative of average current conditions based on the extent of the data and their timeliness.

Based on the results from the modeling, the maximum downwind impacts occurred just to the northeast of the air stripper at the OBSWDC property line, along Winding Road. Comparison of the predicted impacts to the NYSDEC Air Guide No. 1 limits indicated that the concentrations of all VOCs at the worst-case downwind receptor were well below their respective SGC and AGC during all four quarters of 2001.

Review of the 2001 monitoring efforts indicates that using the influent/effluent data from the on-site laboratory and the operational data recorded by Town personnel to calculate air stripper stack emissions is a valid approach, and that modeling of these results is an appropriate method of predicting the downwind impacts. Therefore, this methodology will continue to be used for future air stripper stack emissions monitoring.

## SECTION 6.0 DISCUSSION AND RECOMMENDATIONS

### 6.1 Discussion

#### 6.1.1 Facility Operations

Review of the operational data provided in the quarterly reports indicates that the GTF maintained an average on-line performance of 69 percent during 2001. A total of 409 million gallons of groundwater were pumped, treated and recharged, at an average daily flow rate of 1.11 MGD (Figure 1).

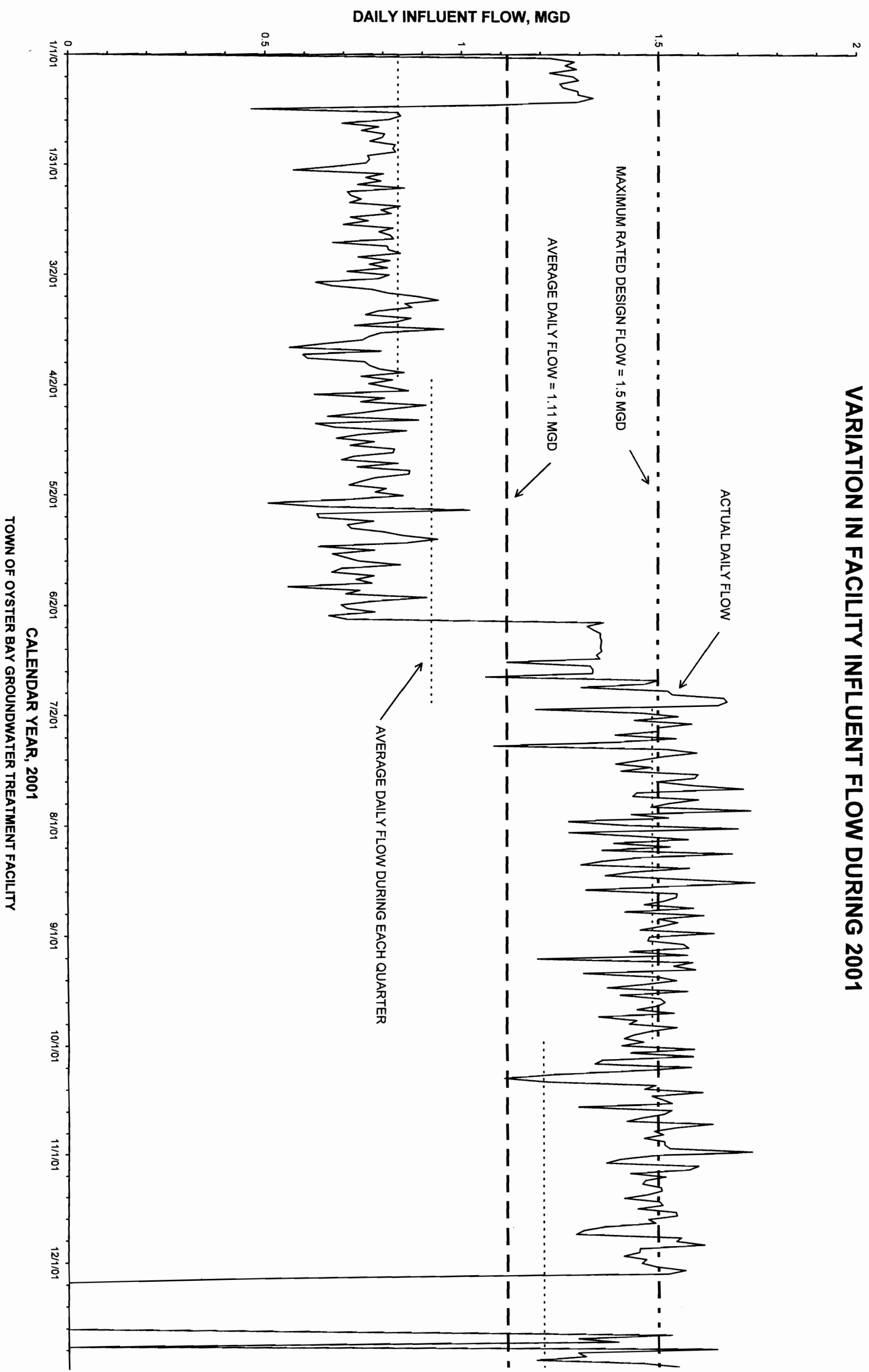
The GTF's performance on a quarterly basis is summarized below:

<u>Reporting Period</u>	<u>On-Line Performance (%)</u>	<u>Avg. Daily Flow (MGD)</u>	<u>Total Flow (MG)</u>
1 <sup>st</sup> Quarter of 2001	45	0.84	75
2 <sup>nd</sup> Quarter of 2001	52	0.92	85
3 <sup>rd</sup> Quarter of 2001	99	1.48	138
4 <sup>th</sup> Quarter of 2001	79	1.21	111

Determination of the on-line performance of the GTF is based on the percentage of the total available operating time that the GTF was actually on-line during the reporting period. The total available pump operating time during 2001 was 43,800 hours, based on five recovery wells operating 24 hours per day for 365 days. The total downtime recorded on the Daily Operations Reports during 2001 was 13,471 hours.

As shown in Figure 1, the majority of the downtime (83%) occurred during the first two quarters of 2001. This downtime was primarily associated with shorts in the underground high-voltage power supply lines to Recovery Wells RW-2, RW-3 and RW-5, but included routine maintenance and repair of the various treatment system appurtenances. All three wells were returned to service by early June 2001. The other main period of facility downtime occurred during the period from December 6-20, 2001, when the underground power supply lines in the park were replaced. An acid-rinse of the air stripper was conducted during this period while the facility was off-line.

**FIGURE 1**  
**VARIATION IN FACILITY INFLUENT FLOW DURING 2001**

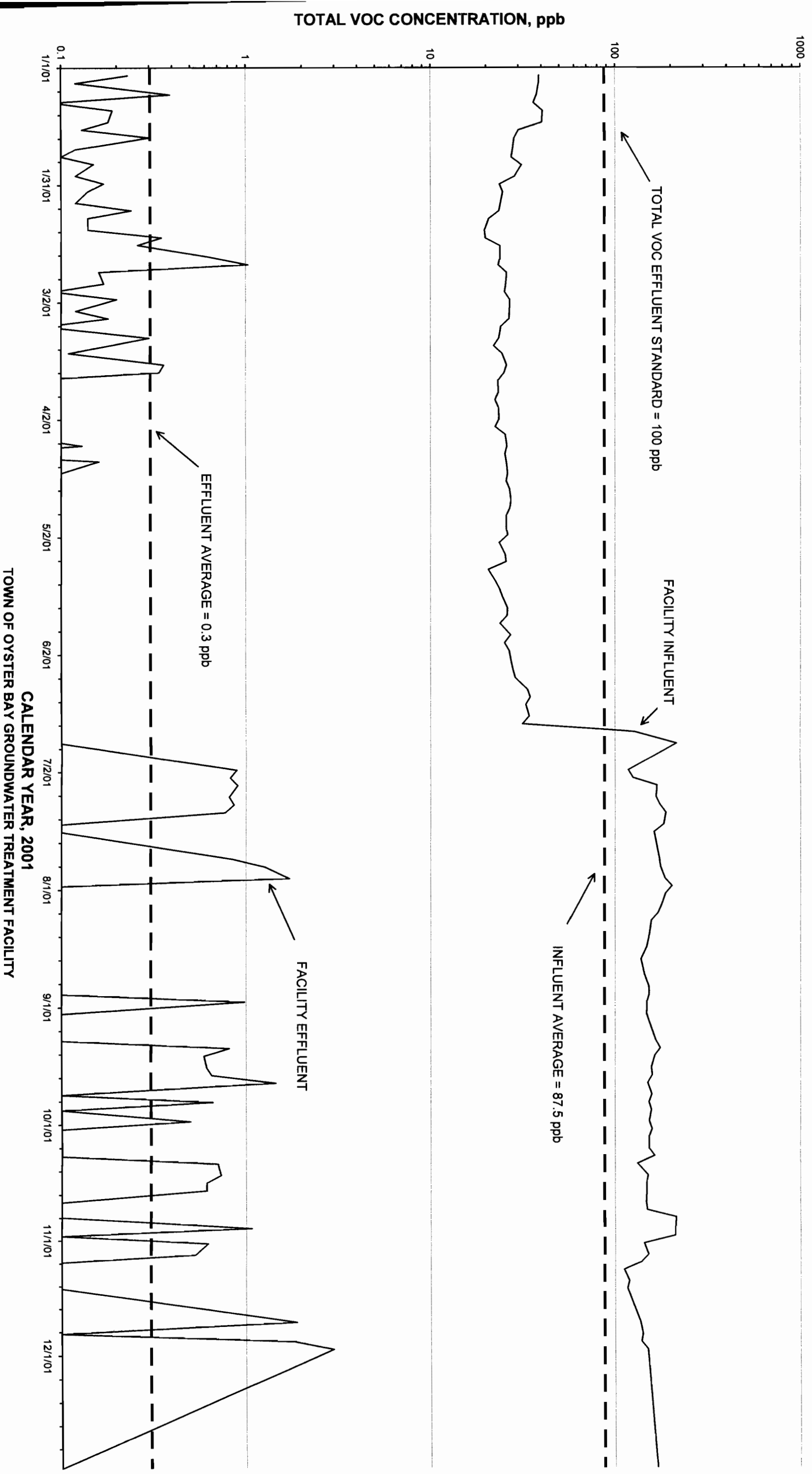


Based on the Town laboratory's data, which were quality checked with the monthly SPDES analyses, during 2001, the total VOC concentration of the GTF influent averaged 87.5 ppb and the total VOC concentration of the effluent averaged 0.3 ppb (Figure 2). The total VOC concentration of the GTF influent varied according to which recovery wells were on-line, but otherwise remained relatively constant during 2001. The abrupt increase in influent total VOC concentration in early June shown in Figure 2 is associated with Recovery Well RW-5, which has a relatively high total VOC concentration, being returned to service. The relative proportions of the individual VOC species comprising the plume also remained consistent during 2001 (Figure 3).

With respect to the individual recovery wells, total VOC concentrations in Recovery Wells RW-1 and RW-2 showed very gradually decreasing trends during 2001. Total VOC concentrations in Recovery Well RW-3 remained relatively constant during 2001. Total VOC concentrations in Recovery Well RW-4 showed a generally increasing trend during 2001. Total VOC concentrations in Recovery Well RW-5 showed a generally decreasing trend during the first ten months of 2001 and an increasing trend during the last two months of 2001. (Figure 4).

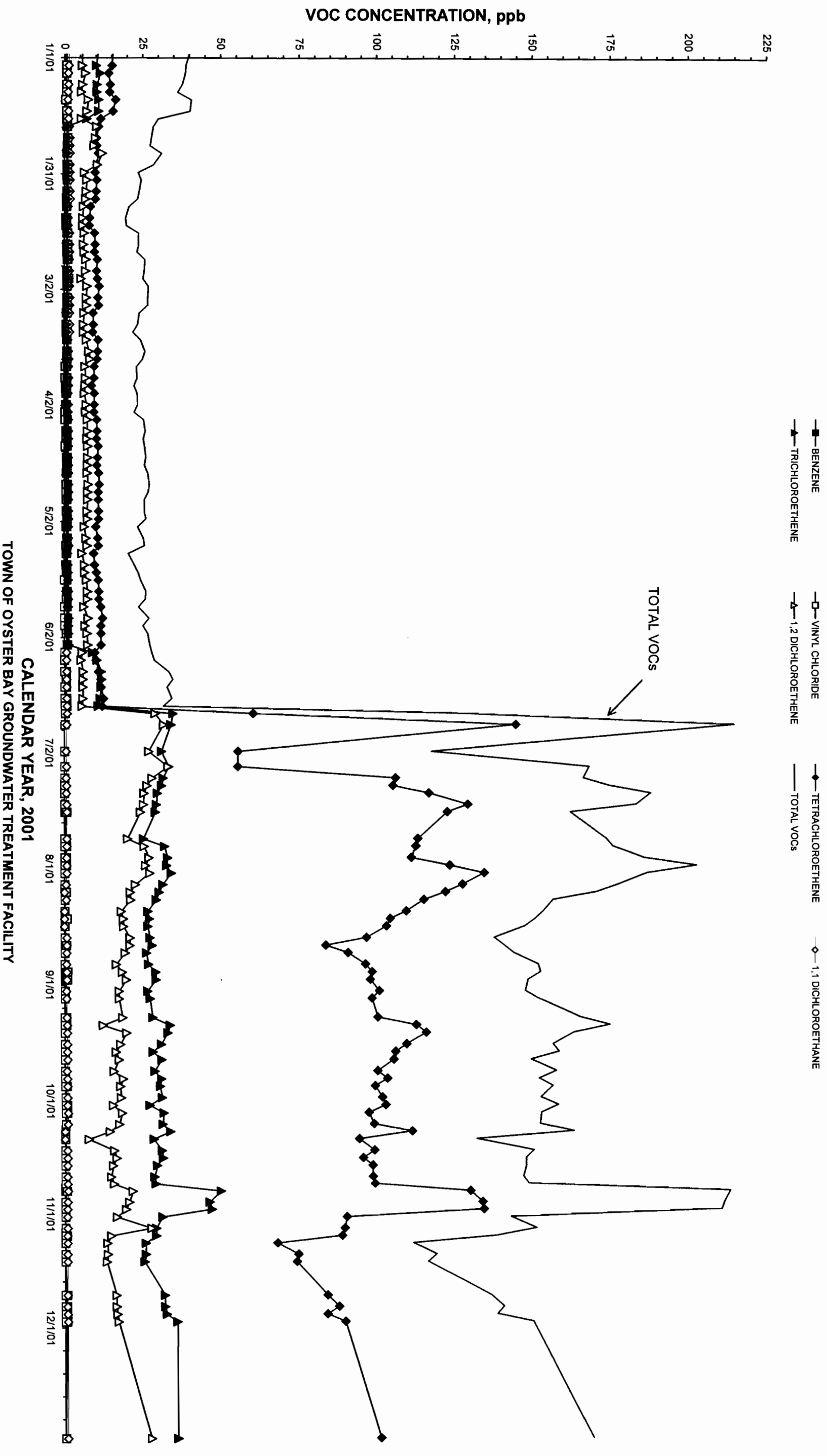
The treatment efficiency of the GTF air stripper averaged 99.54 percent during 2001 (Figure 5), which is comparable to that achieved in previous years. Removal efficiencies have remained high for three reasons. Firstly, a five-well recovery system tends to dampen out large variations in influent VOC concentrations to the air stripper. Secondly, the amount of VOC loading to the air stripper has been gradually decreasing over time in response to the ongoing remediation. Lastly, a high awareness exists among operating personnel regarding maintenance of the stripper internals through observation of the tower packing, where iron deposit fouling can cause a drop in process efficiency. Acid washes of the tower internals are a regular maintenance procedure. The latest was performed on December 17, 2001.

**FIGURE 2**  
**COMPARISON OF INFLUENT/EFFLUENT TOTAL VOC**  
**CONCENTRATIONS DURING 2001**



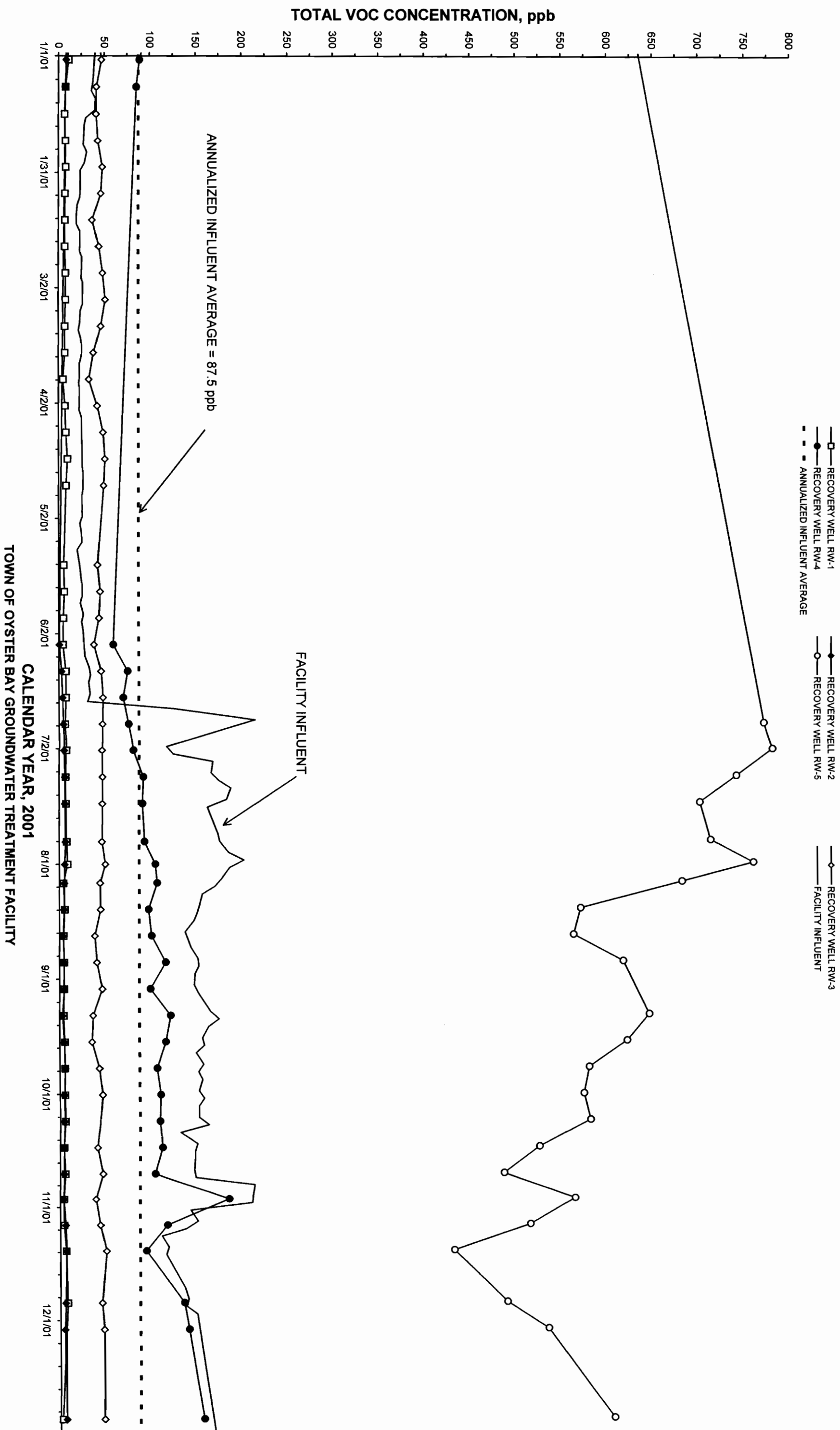


**FIGURE 3**  
**VARIATION IN FACILITY INFLUENT VOC**  
**CONCENTRATIONS DURING 2001**

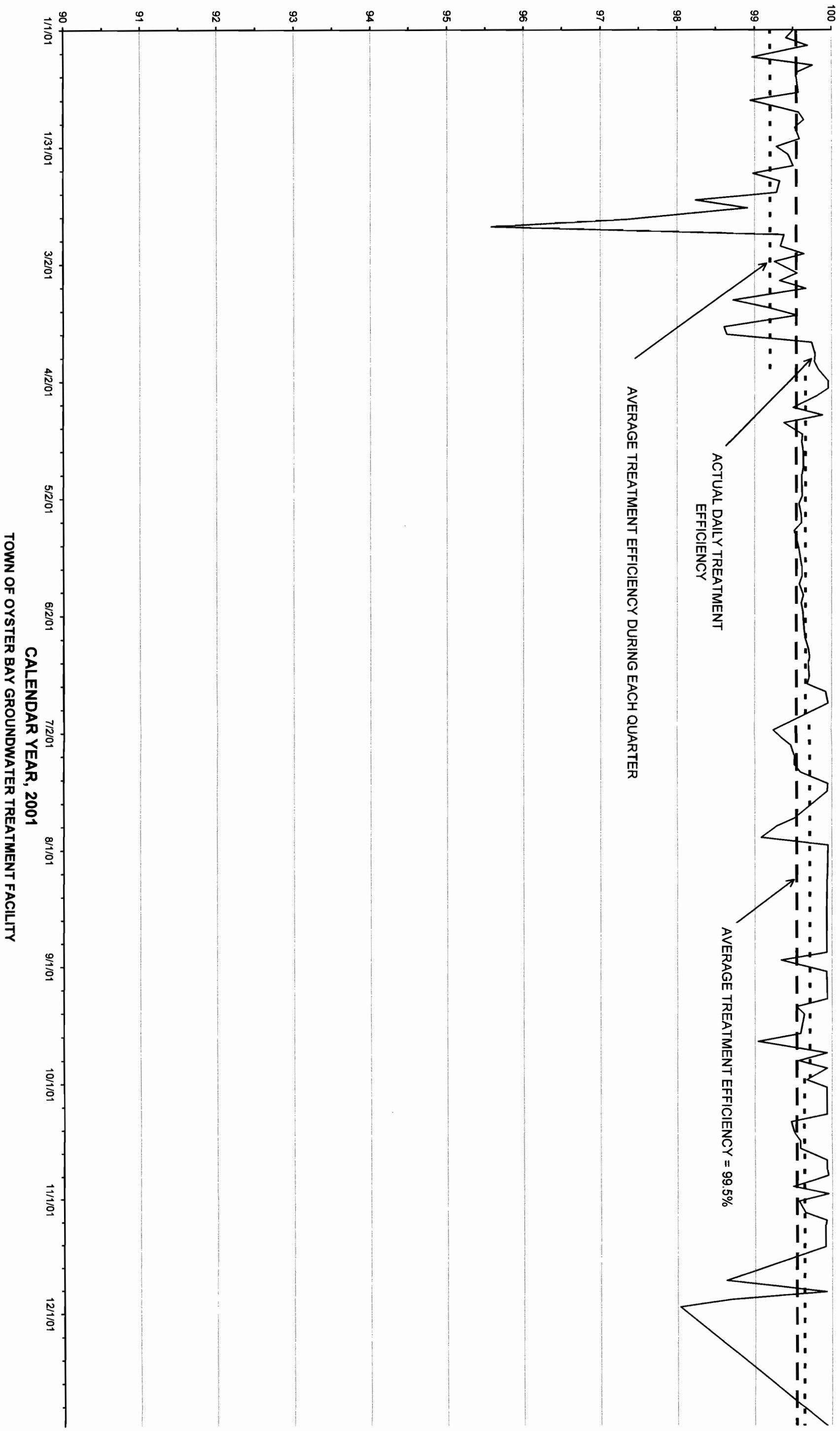


CALENDAR YEAR, 2001  
 TOWN OF OYSTER BAY GROUNDWATER TREATMENT FACILITY

**FIGURE 4**  
**VARIATION IN WELLFIELD TOTAL VOC CONCENTRATIONS DURING 2001**



**FIGURE 5**  
**VARIATION IN TREATMENT EFFICIENCY DURING 2001**



The VOC results from the 12 monthly SPDES effluent samples collected during 2001 did not detect any VOCs above the certified laboratory's method detection limits, which are lower than the Groundwater Aquifer Limits listed in Table 1. Moreover, the results from the self-monitoring effluent analyses performed three times per week at the Town's on-site laboratory did not detect any VOCs above the limits listed in Table 1. Therefore, based on the results from the SPDES monitoring and self-monitoring performed during 2001, no additional treatment units are required to remove VOCs from the GTF effluent since all Consent Decree limits continue to be satisfied.

The inorganic and leachate indicator parameter results from the 12 monthly SPDES effluent samples collected during 2001 indicate that with the exception of ammonia, the concentrations of the parameters analyzed for were also less than the Groundwater Aquifer Requirements listed in Table 2. The results from the self-monitoring effluent analyses performed at the Town's on-site laboratory also indicate that the ammonia concentration of the GTF effluent was often higher than the limits specified in Table 2. The concentrations of ammonia detected are believed to be attributable in part to runoff from the horse stable located on Winding Road. This issue is being addressed by the property owner and the Nassau County Department of Public Works.

The concentrations of ammonia detected in the GTF effluent are less than the 10 mg/L SPDES total nitrogen limitation (applicable in Nassau County). Moreover, samples from Well M-30B-R, located adjacent to Recharge Basin No. 1 and screened at the water table, do not show elevated levels of ammonia-nitrogen. Biological assimilation of nitrogen in the recharge basin may account for its absence in the shallow groundwater near the recharge basin.

Based on this assessment of the inorganic and leachate indicator parameter results, no additional treatment units are currently proposed to remove iron or other inorganic or leachate indicator parameters from the GTF effluent.

The 2001 air stripper stack emission monitoring results (Section 5.0) indicates that the concentrations of one or two VOCs exceeded the Consent Decree stack discharge limits during each monitoring quarter. However, dispersion modeling of the results indicates that air-quality impacts at the worst case off-site receptor are well below the NYSDEC air quality limits. Therefore, on the basis of these findings, no additional

treatment units are currently required to remove VOCs from the air stripper stack exhaust since all applicable guideline values are currently satisfied.

### 6.1.2 Hydraulic Control of the VOC Plume

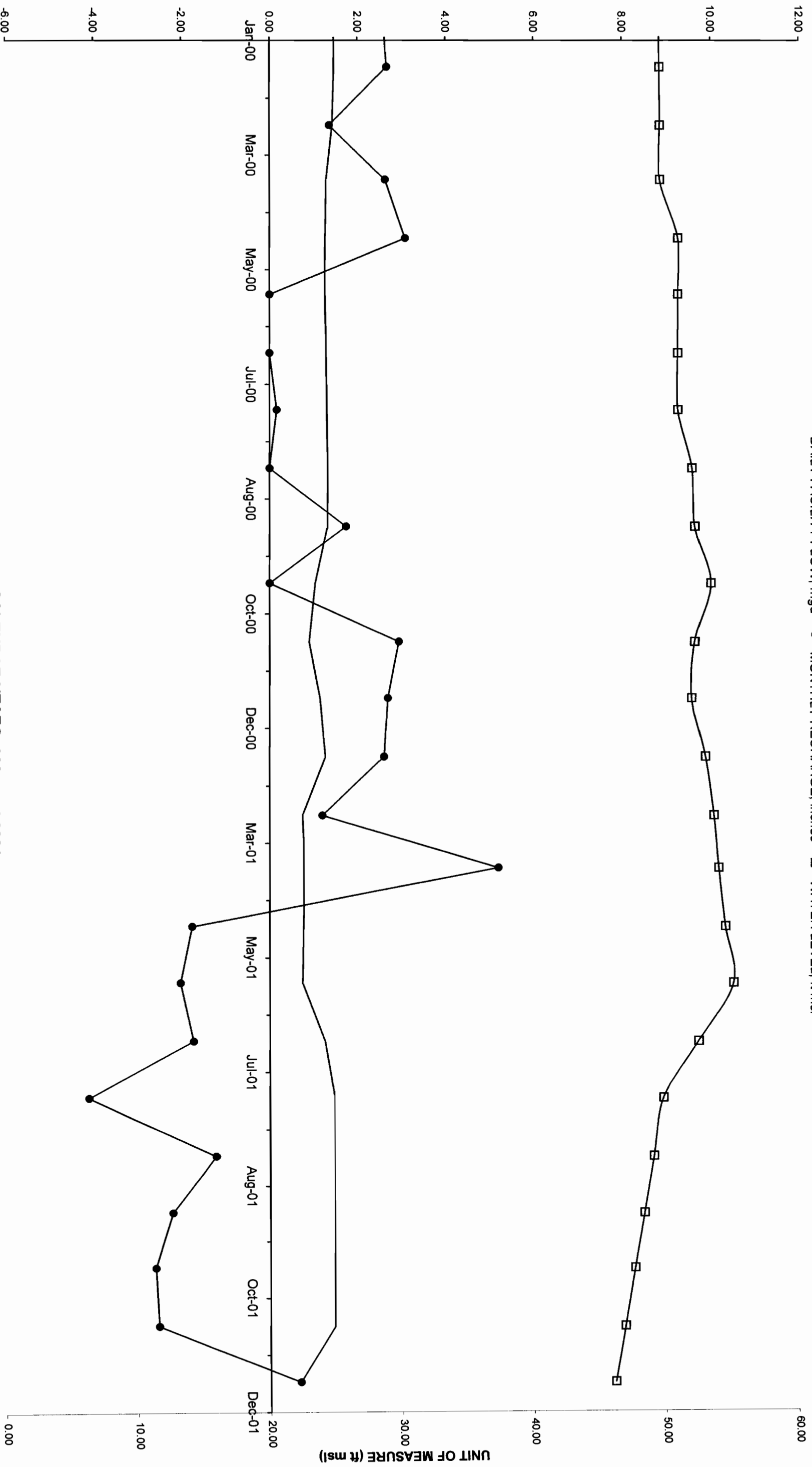
In order to evaluate and compare the respective effects of system flow and recharge on water levels within the capture zone, data on system pumpage, recharge and water-level elevations were compiled for 2000-2001, and summarized graphically in Figure 6. Facility flow data were compiled from the "Daily Operations Reports" and are presented in Figure 6 as the average flow for the days on which the hydraulic monitoring rounds were conducted. Recharge was estimated as the monthly precipitation corrected for evapotranspiration. Precipitation data were obtained from a meteorological station located approximately 2 miles east of the site. Evapotranspiration (ET) data were obtained from the local U.S. Soil Conservation Service office in the form of historical monthly ET values for grass, which is the dominant ground cover at both the OBSWDC and adjacent Bethpage State Park. The water-level data shown in Figure 6 represent the average water-level elevations recorded for the five recovery wells during each hydraulic monitoring round.

Review of Figure 6 indicates that facility flow, and to a lesser extent unusual recharge conditions, are the primary factors influencing water-level elevations in the capture zone. Specifically, the average water-level elevation in the recovery wells remains very constant over time, despite the normal seasonal variation in recharge to the aquifer. However, unusual recharge conditions, such as the lack of recharge that occurred during the period from April through November 2001, also appear to influence water-level elevations in the recovery wells. Moreover, there is a time lag of several months between when recharge occurs and its effect is seen on water level elevations in the recovery wellfield.

Based on the above evaluation, if the average facility flow is maintained at the current levels, regardless of seasonal recharge, hydraulic monitoring can continue to be safely reduced to quarterly from the original monthly schedule. This specific revision to the current monitoring procedures is provided for in the Consent Decree, and was implemented beginning with the fourth quarter 1993 monitoring round.

**FIGURE 6**  
**CORRELATION OF RECOVERY WELL AND HYDRAULIC DATA**

— DAILY FACILITY FLOW, mgd —●— MONTHLY RECHARGE, inches —□— WATER LEVEL, ft msl



CALENDAR YEARS, 2000 and 2001  
 TOWN OF OYSTER BAY GROUNDWATER TREATMENT FACILITY

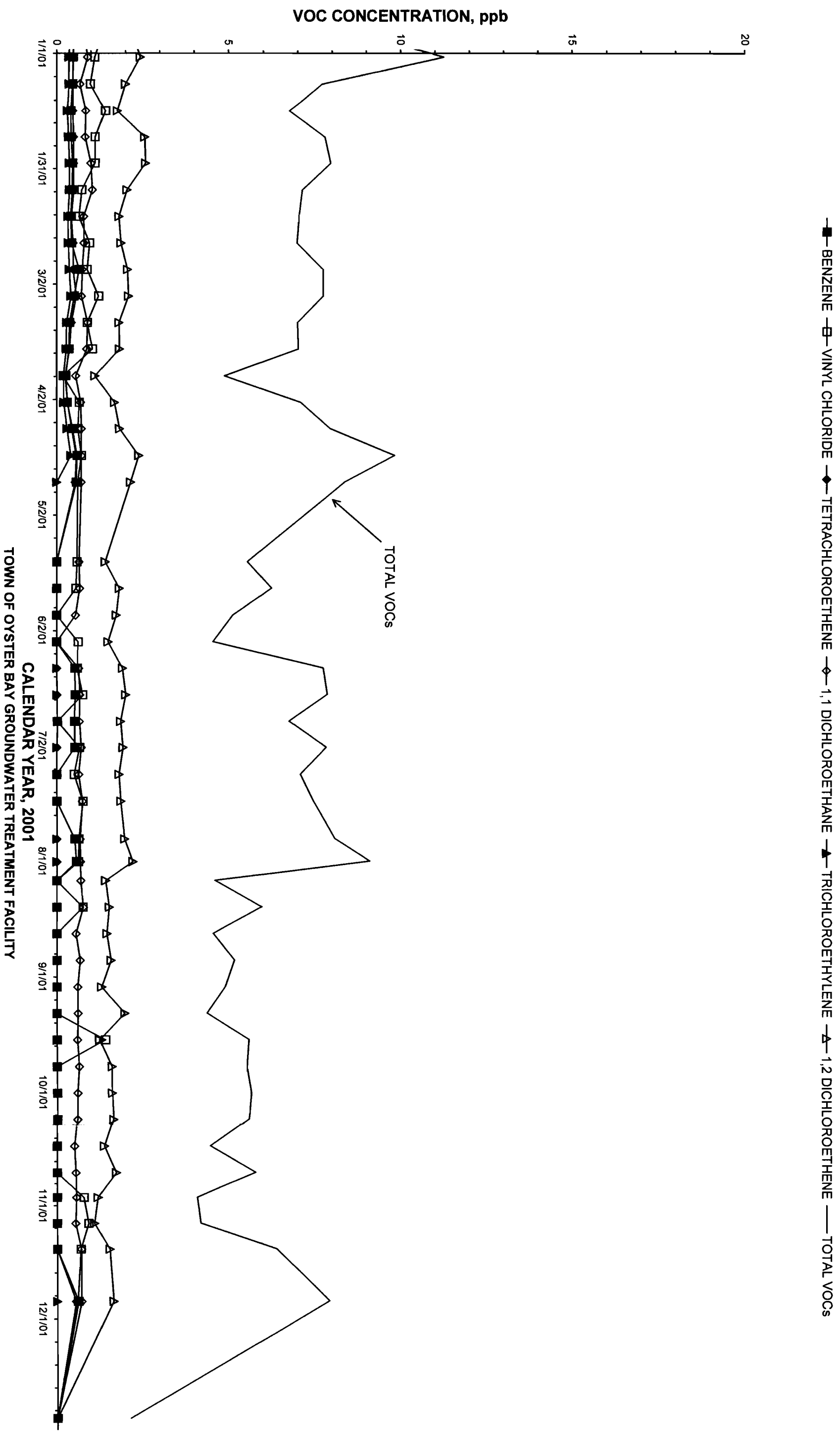
As discussed previously in Section 4.4.1, analysis of the limiting flow lines and plume boundaries for the 2001 data indicates that hydraulic control of the Landfill VOC plume was maintained during all four operating quarters. Moreover, as shown in Figures 1 through 3 in each section of Appendix C, although the GTF was not fully operational during the first two quarters of 2001, the capture zone appears to have been sufficient to maintain hydraulic control of the Landfill VOC plume. Overall, the configuration of the capture zone was comparable to previous operating years.

### 6.1.3 Variation in Wellfield VOC Concentrations

During 2001, the Town continued to monitor VOC concentrations in each recovery well on a weekly basis. These data are summarized for each recovery well in Figures 7 through 11, respectively. Review of these figures indicates that total VOC concentrations in Recovery Wells RW-1 and RW-2 continued to show very gradual decreasing trends during 2001, consistent with the previous data for these wells. Total VOC concentrations in Recovery Well RW-3 remained relatively constant during 2001, reflecting a slight increase in tetrachloroethene levels that offset slight decreases in the levels of other VOCs. Total VOC concentrations in Recovery Well RW-4 continued to show an increasing trend during 2001, reflecting the increase in trichloroethene levels observed in this well since mid 1999. Total VOC concentrations in Recovery Well RW-5 showed a decreasing trend during the first 10 months of 2001 and an increasing trend during the last 2 months of the year, reflecting an increase in tetrachloroethene levels in this well. The decrease in total VOC concentrations observed in Recovery Well RW-5 during the first ten months of 2001 may reflect a period of adjustment in the position of the VOC plume rather than an actual decrease in groundwater VOC concentrations. Total VOC concentrations in this well have showed a predominantly increasing trend since late 1996.

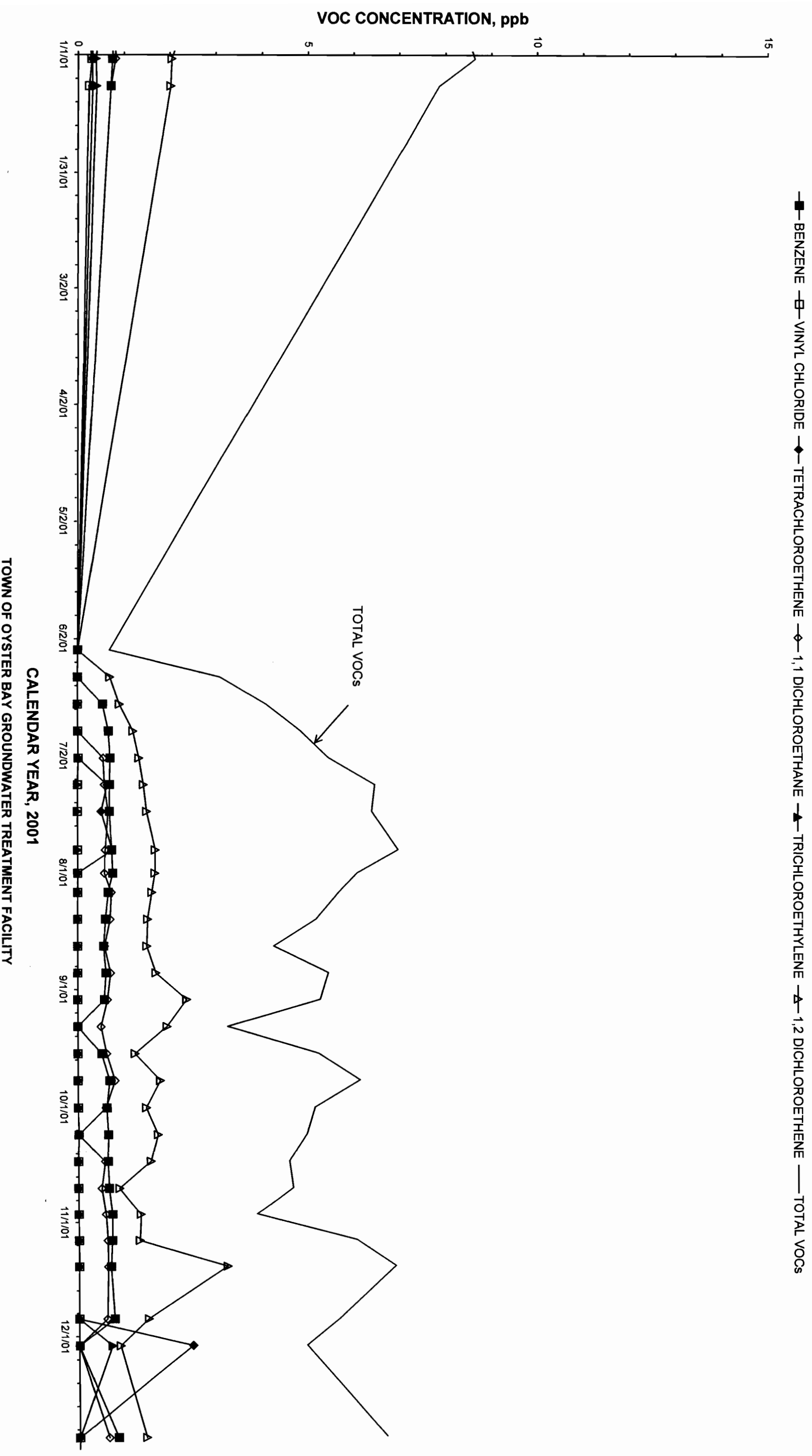
As shown in Figures 7 through 11, the trends in total VOC concentration for Recovery Wells RW-1 and RW-2 can be attributed to a variety of VHOs, whereas the trend for Recovery Well RW-3 is associated primarily with two compounds: 1,2-dichloroethene and tetrachloroethene. The trend for Recovery Well RW-4 is also associated primarily with two compounds: trichloroethene and tetrachloroethene. The trend for Recovery Well RW-5 is associated almost entirely with tetrachloroethene. The trends observed for the recovery wells are consistent with the monitoring well data described previously in Section 4.3.

**FIGURE 7**  
**VARIATION IN VOC CONCENTRATIONS AT RECOVERY WELL RW-1 DURING 2001**



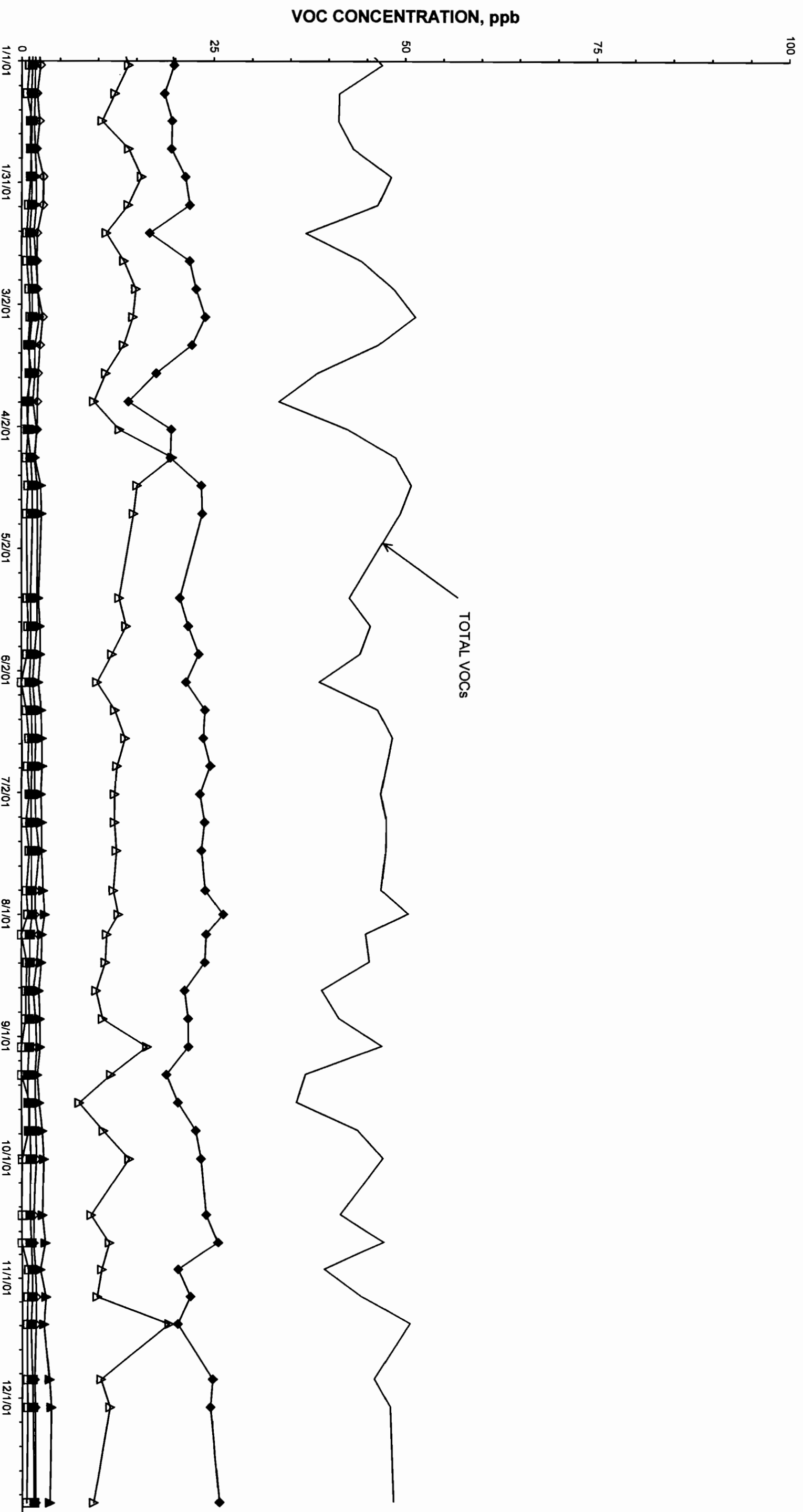


**FIGURE 8**  
**VARIATION IN VOC CONCENTRATIONS AT RECOVERY WELL RW-2 DURING 2001**

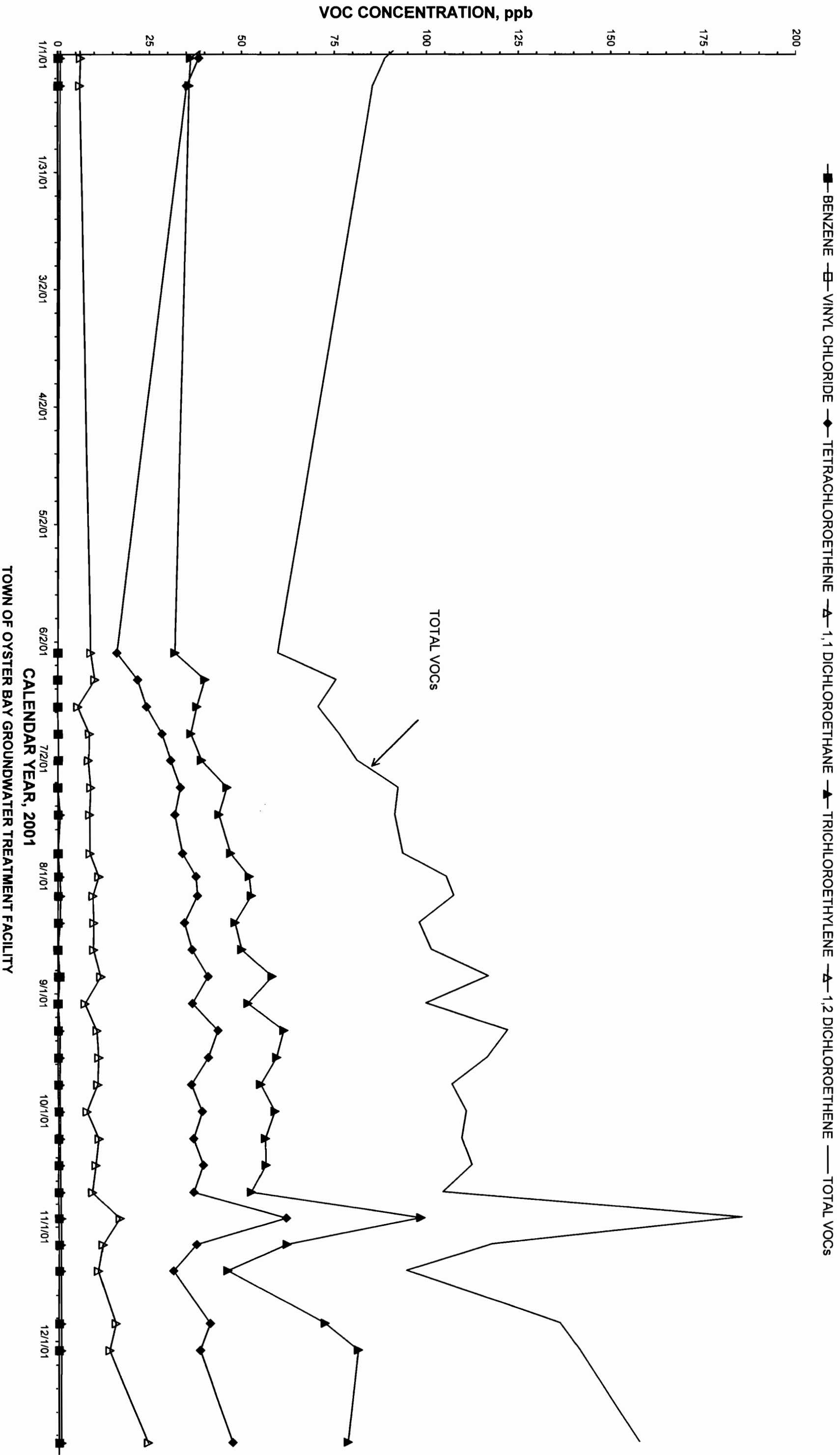


**FIGURE 9**  
**VARIATION IN VOC CONCENTRATIONS AT RECOVERY WELL RW-3 DURING 2001**

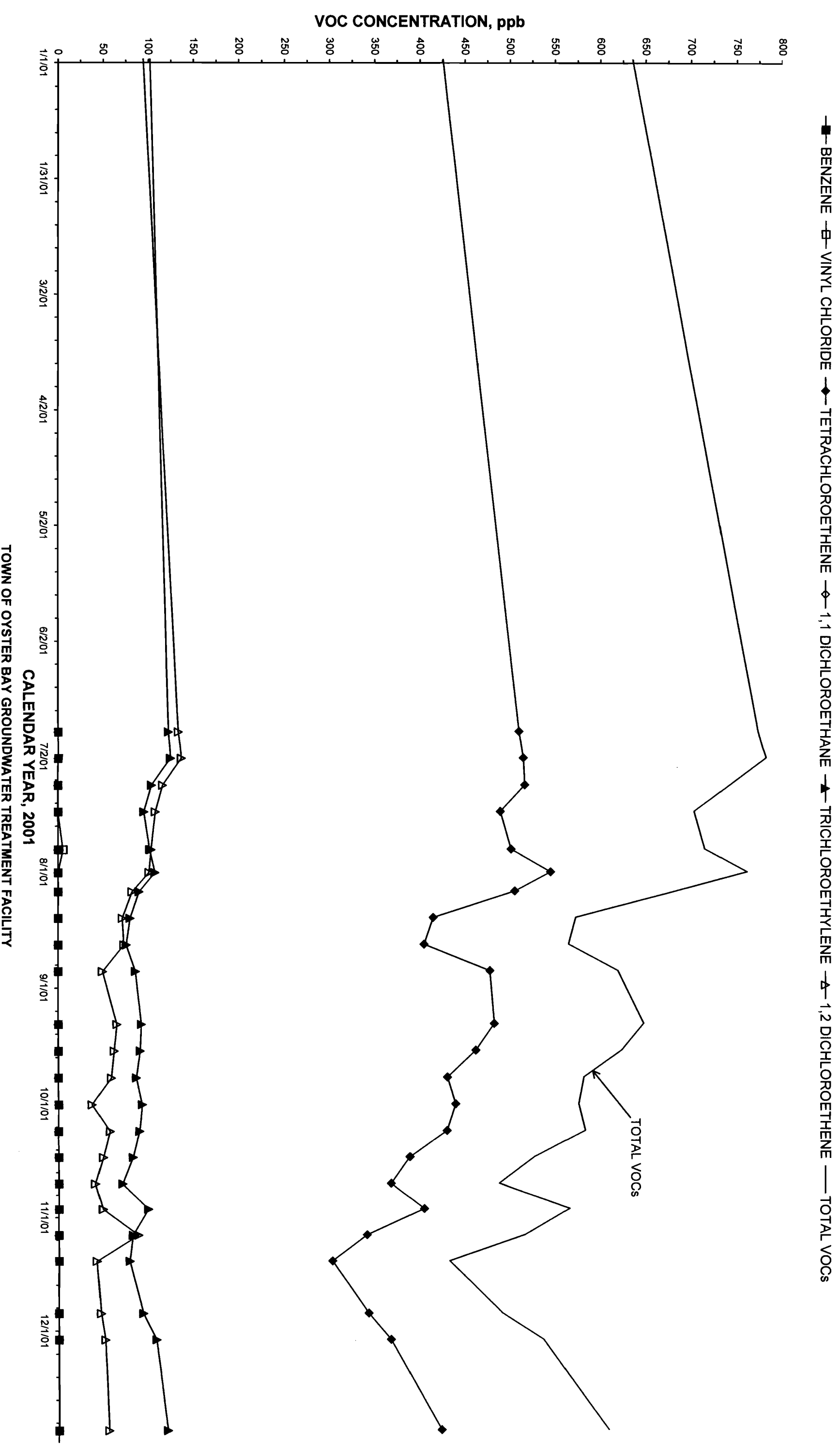
■ BENZENE    □ VINYL CHLORIDE    ◆ TETRACHLOROETHENE    ◇ 1,1 DICHLOROETHANE    ▲ TRICHLOROETHYLENE    ▼ 1,2 DICHLOROETHENE    — TOTAL VOCs



**FIGURE 10**  
**VARIATION IN VOC CONCENTRATIONS AT RECOVERY WELL RW-4 DURING 2001**



**FIGURE 11**  
**VARIATION IN VOC CONCENTRATIONS AT RECOVERY WELL RW-5 DURING 2001**



#### 6.1.4 Remediation of Groundwater Plumes from Other Sources

Review of the available data regarding the distribution of VOCs in groundwater indicates that a portion of the VOC plume being remediated by the GTF is not attributable to the Landfill, but associated instead with one or more adjacent properties. Specifically, the concentrations of VOCs detected in groundwater have not been homogeneously distributed as would be expected from hydrodynamic dispersion of a plume originating entirely from the Landfill.

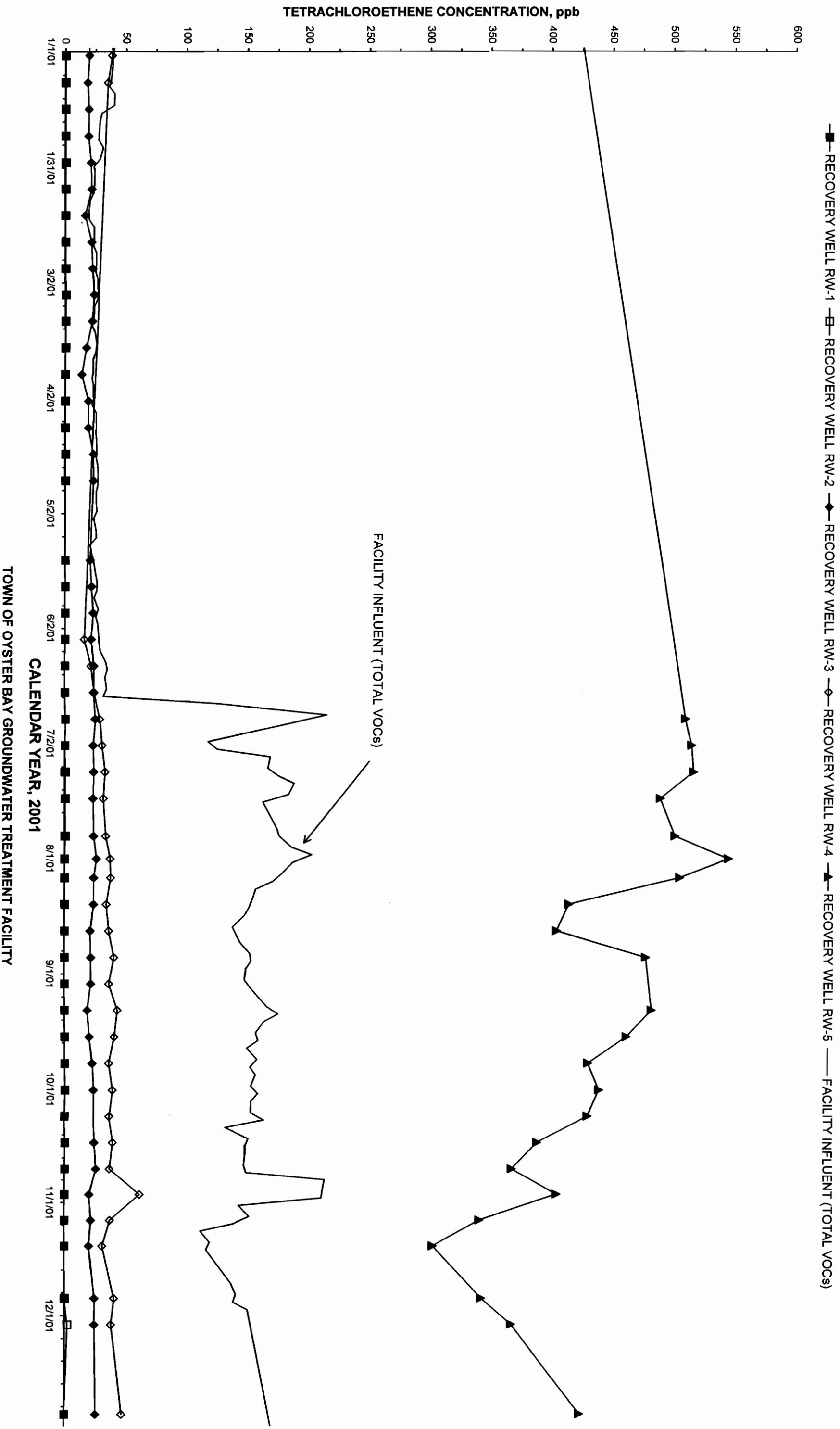
The current distribution of VOCs in groundwater, based on the 2001 quarterly monitoring data, continues to be indicative of this scenario. Specifically, much higher concentrations of tetrachloroethene and several VHOs which are breakdown products of tetrachloroethene, were detected on the east side of the plume in Monitoring Wells MW-7B and MW-8A, and Recovery Wells RW-3, RW-4 and RW-5.

The fact that high total VOC concentrations have been consistently detected in Well MW-8A, which is screened in the water-table zone, and not in Well MW-8B, which is screened in the shallow potentiometric zone, indicates that this well cluster is located immediately downgradient of a separate VOC source near the east side of the Landfill. In contrast, at Well Cluster MW-6, which is located immediately downgradient of the Landfill, VOCs were not detected in the water-table zone monitoring well (Well MW-6A) during 2001.

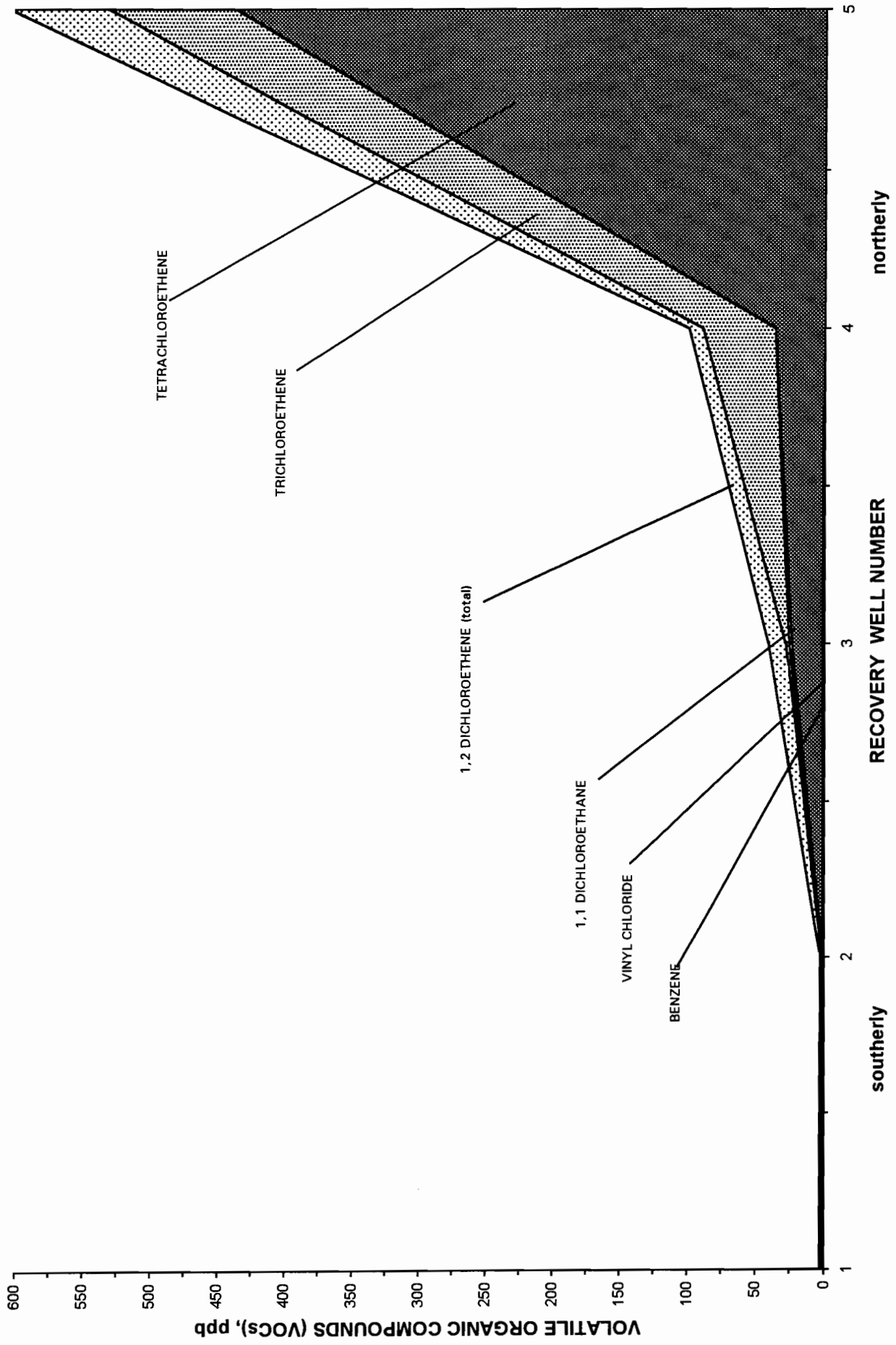
The Claremont Site is located directly upgradient of Well Cluster MW-8, at the northerly end of what has been referred to as the "eastern tetrachloroethene plume". Tetrachloroethene is the major contaminant historically associated with the Claremont Site, although previous investigations have identified high concentrations of other VHO compounds, such as trichloroethene, in soil and groundwater.

With respect to the Town's recovery wellfield, the Claremont Site is located closest to, and hydraulically upgradient from, Recovery Well RW-5, and at increasing distance from Recovery Wells RW-4, RW-3, etc. The detected concentrations of tetrachloroethene, as well as several other VHO compounds, show a marked decrease with increasing distance from the Claremont Site. This relationship is illustrated in Figure 12, which demonstrates the wide variation in tetrachloroethene concentrations detected in the individual recovery wells during 2001. Figure 13 is a cross-section plot

**FIGURE 12**  
**VARIATION IN WELLFIELD TETRACHLOROETHENE CONCENTRATIONS DURING 2001**



**FIGURE 13  
 AVERAGE DISTRIBUTION OF VOCs ACROSS RECOVERY  
 WELLFIELD DURING 2001**



showing the average annual concentration of selected VOCs at each recovery well, and clearly illustrates the increasing concentration of tetrachloroethene in the direction of the Claremont Site.

Aromatic hydrocarbons, in contrast to VHOs and tetrachloroethene, were primarily detected at lower concentrations, in wells located downgradient of the Landfill and the adjacent Nassau County Fireman's Training Center.

#### **6.1.5 Overview of Other Monitoring Program Results**

The results from the ambient air and soil-gas quality monitoring performed during 2001 indicate that the Landfill, and all other OBSWDC operations together, do not have a significant impact on air quality. The results from the thermal oxidizer test indicate that the thermal oxidizer continues to operate according to design and that the current air quality limits are satisfied.

### **6.2 Recommendations**

#### **6.2.1 Groundwater Treatment Facility**

Under the current operating conditions, the analytical results compiled during 2001 do not support the need for additional groundwater or air stripper-exhaust treatment units at this time. However, continued quantitative, maintenance and facility improvements should be identified and implemented. In this regard, it is recommended that the Town maintain certification of its on-site environmental laboratory under New York State's Environmental Laboratory Approval Program (ELAP) and perform the quarterly groundwater VOC analyses in-house as an effective means to expedite analyses and control project costs. It is also recommended that the Town repair the air stripper blower meter as soon as possible and continue to perform acid washes of the air stripper internals on an as-needed basis. With respect to the various recharge basins utilized for the project, it is recommended that the Town continue the phased cleaning of the basins so that sufficient recharge capacity is maintained.

Since the overall dimensions of the Landfill plume have decreased in response to the ongoing remediation, some reduction in flow from the recovery wellfield may be possible without compromising hydraulic control of the Landfill plume. Flow reduction



may be accomplished by throttling flow from the wellfield or selected wells, taking one or more wells out of operation for some period of time, or a combination of these techniques. Although some cost savings can be realized if flow reduction is implemented, the real benefit is in reducing the hydraulic loading on the various recharge basins.

### 6.2.2 Groundwater Monitoring Program

Based on the present demonstrated hydraulic control over the Landfill VOC plume regardless of the normal variation in total system flow and seasonal groundwater recharge, it is recommended that the frequency of hydraulic monitoring continue to be reduced to quarterly from monthly, as previously discussed in Section 6.1.2. It is also recommended that water-level measurements continue to be collected from Well Clusters EW-1, EW-2 and EW-3, located downgradient of the Claremont Site, as part of the quarterly monitoring activities to provide current data at these locations.

The water-quality data indicate that groundwater quality is continuing to improve in response to the ongoing remediation and that at certain locations (e.g., Well MW-9D) the concentrations of Landfill-related VOCs continue to exceed water-quality standards. Moreover, the hydraulic and water-quality data collected at Well Cluster MW-8 during 2001 indicated that the on-site groundwater treatment system at the Claremont Site appears to be altering local hydraulic and water-quality conditions in the eastern portion of the plume area. Therefore, it is recommended that the quarterly groundwater quality monitoring program be continued without change to track the progress of the ongoing remediation and evaluate potential impacts from the Claremont Site's groundwater remediation system on the Town's system. It is also recommended that Well MW-9D, which is not part of the quarterly monitoring program but contains significant concentrations of Landfill-related contaminants, continue to be sampled annually to provide data on the deep potentiometric zone of the aquifer at this location downgradient of the Landfill and upgradient of the Town's recovery wellfield. Any future reduction in the testing frequency specified in the Consent Decree will require the concurrence of the regulatory agencies. Any improvements in sampling/analytical protocols should be incorporated into the program as they are developed, after approval by the regulatory agencies.

### 6.2.3 Thermal Oxidizer Stack Emissions Monitoring Program

The Town is required to continue this program on an annual basis, as proscribed by the Consent Decree. All monitoring results will be compared to the latest version of NYSDEC Air Guide No. 1. Improvements in sampling/analytical protocols should be incorporated into the program as they are developed after approval by the regulatory agencies.

### 6.2.4 Ambient Air and Soil-Gas Quality Monitoring Program

In Early 1998, it was recommended that the Town request approval from the NYSDEC to reduce the frequency of ambient air monitoring from quarterly to annual. Pending receipt of such approval, the Town is required to monitor on a quarterly basis.

### 6.2.5 Air Stripper Stack Emissions Monitoring Program

The results presented in Section 5.0 indicate that the current methodology is viable for modeling air quality impacts from the GTF at the OBSWDC property line. Therefore, it is recommended that this methodology continue to be used for subsequent reports.

**APPENDIX A**  
**WELL LOCATION MAP**

## **APPENDIX B**

**TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
EVALUATION OF VOLATILE ORGANIC COMPOUNDS  
IN AIR AND SOIL GAS AND SOIL GAS PRESSURE READINGS**

**2001 Annual Summary Report**

**RTP Environmental Associates, Inc.  
November 2001**

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
**EVALUATION OF VOLATILE ORGANIC COMPOUNDS  
IN AMBIENT AIR AND SOIL GAS AND SOIL GAS  
PRESSURE READINGS**

**2001 Annual Summary Report**

Prepared for:

Town of Oyster Bay  
Department of Public Works  
Syosset, New York

Prepared by:

RTP Environmental Associates, Inc.<sup>®</sup>  
400 Post Avenue  
Westbury, New York

**November 2001**

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

**EVALUATION OF VOLATILE ORGANIC COMPOUNDS  
IN AMBIENT AIR AND SOIL GAS AND SOIL GAS  
PRESSURE READINGS**

**2001 Annual Summary**

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TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

**EVALUATION OF VOLATILE ORGANIC COMPOUNDS  
IN AMBIENT AIR AND SOIL GAS AND SOIL GAS  
PRESSURE READINGS**

**1.0 INTRODUCTION**

The Town of Oyster Bay (the Town) has contracted RTP Environmental Associates, Inc. to conduct a supplemental gas monitoring program of volatile organic compounds (VOCs) and soil gas pressures during 2001 on a quarterly basis at the Old Bethpage Landfill. The landfill is located within the Old Bethpage Solid Waste Disposal Complex (OBSWDC). The ambient air, soil gas and soil gas pressure monitoring program was designed to comply with several requirements stipulated in the New York State Consent Decree (83CIV5357) RAP Attachment 2. The details of the specific monitoring methods used, laboratory analyses performed and the results for all program phases including VOC monitoring, have been presented in the 2001 quarterly reports. The quarterly reports have been forwarded to the Town as they were completed. The other monitoring efforts being conducted to complete the Consent Decree requirements were reported separately. This evaluation has been prepared to review and summarize the ambient air and soil gas VOC concentration and soil gas pressure data that were collected during the 2001 monitoring efforts.

The OBSWDC is located in the Town of Oyster Bay, New York. The OBSWDC is comprised of a landfill, power generating facility, thermal oxidizer, leachate and groundwater treatment systems, clean fill disposal site, solid waste recycling center, solid waste transfer station, vehicle maintenance garage and scale house. The OBSWDC is bordered on the north by Bethpage Sweethollow Road, on the west by Round Swamp Road and on the east by Winding Road. A concrete plant and the Nassau County Firemen's Training Center (NCFTC) are located along the southern border of the OBSWDC and a campground is located along the northwest border. An industrial park adjoins the northeastern border of the OBSWDC and other industrial areas exist nearby to the north and west. These other industrial areas do not have common boundaries with the OBSWDC, however, these locations are sources of air pollutants that impact the area. Other sources of air pollutants are vehicular traffic on the roads that border the OBSWDC as well as regional sources. Therefore, several other sources contributing VOCs influence the ambient concentrations being monitored.

To control landfill emissions, the landfill has undergone significant changes as part of the closure process. A gas collection system was installed along the perimeter of the landfill and portions began operating in 1981 and a

capping program was initiated in 1983. The capping program involved placing an impervious clay cap over the landfill. The capping program was completed in January, 1993. The perimeter gas collection system was expanded in 1995. Six landfill gas extraction wells (LGV23, LGV24, LGV25, LGV26, LGV27 and LGV28) were installed and became operational August 16, 1995. These wells were located along the western and southern perimeters of the capped landfill and they were designed to contain gas migration and to maintain acceptable methane levels at the thermal oxidizer. Four (4) additional perimeter gas collection wells (LGV29, LGV30, LGV31 and LGV32) were installed and became operational during 1996 along the west side of the Haul Road, near Briden Construction. The perimeter loop around the landfill was also completed during 1996.

The thermal oxidizer was installed in 1987 to combust the landfill gas collected by the perimeter collection system. Recently the contractor who was mining gas from the landfill for energy production suspended operations due to low recovery rates of landfill gas. All of these activities have restricted or mitigated the release of gas from the landfill and thereby reduced landfill gas and associated air pollutant emissions.

As stipulated in the Consent Decree, ambient air and soil gas concentrations and soil gas pressure levels are currently measured on a quarterly basis at selected points around the landfill. The results are reported quarterly and are summarized in this report. The air emissions from the thermal oxidizer were tested on a quarterly basis initially and are now tested on an annual basis. The test results for the thermal oxidizer have been reported separately.

## **2.0 ANALYSIS OF DATA**

### **2.1 Analysis of the 2001 Data Base**

The established target compound list (TCL) for this study was based on the Volatile Organic Sampling Train (VOST) method developed by the United States Environmental Protection Agency (USEPA) to quantify various VOC emissions. The standard VOST sampling train was modified slightly to make a portable unit for in-field use. The sampling train and the sampling and analysis protocols along with all the details on data collection, analysis and other documentation are provided in the quarterly reports.

The sampling events were scheduled to observe concentrations during various seasons of the year. As a conservative step, the sampling events took place during periods of steady or falling atmospheric pressure. These periods would coincide with the greatest potential for releases of VOCs from the landfill. Sampling for each quarterly test occurred



over a consecutive 24-hour period. Table 2.1 provides the months during which the quarterly test efforts for each year of the sampling program were conducted. Monitoring for the 2001 sampling program which is evaluated herein, occurred in March, May, August and September 2001.

The program TCL is provided in Table 2.2 along with toxicity and guideline concentration values. The TCL has been modified during the course of the monitoring effort because of changing State requirements, analytical capabilities and continuing data review as related to the tentatively identified compounds being detected.

Several changes to the TCL and analytical procedures had been made for the 1997 program and these changes apply to the 2001 program as well. The designation for cis-1,2-dichloroethene was changed from a tentatively identified compound to a target compound as the result of preceding tests. The combined 1-ethyl-2-methylbenzene and 1-ethyl-4-methylbenzene isomers are reported as 2/4-ethyltoluene (total) as a means of simplifying the data reduction reporting process, and because the combined isomer concentration is required for direct comparison to the NYSDEC guideline value. Furthermore, a practical quantitation limit (PQL) was introduced by the analytical laboratory H2M, for several compounds as a result of lowering the minimum detection limit from twenty (20) nanograms to five (5) nanograms. The PQL represents the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. H2M introduced a target tentatively identified compound (TIC) minimum detection limit of twenty-five (25) ng which also can be applied to additional TICs when less than six (6) are detected. Otherwise, the lowest mass loading of the top six (6) additional TICs is considered to be the additional TIC minimum detection limit of a particular sample.

The New York State Department of Environmental Conservation (NYSDEC) provides both short-term (1-hour) and long-term (annual average) guideline concentration values for most of the compounds being monitored. Short-term guideline concentration (SGCs) values are significantly higher than annual guideline concentration (AGCs) values, and therefore, the program concentrates on longer term averages based on 24-hour samples as stipulated in the Consent Decree. The October 16, 1995 Air Guide-1 AGC and SGC values have been used throughout the 2001 quarterly reports. Based on a recent discussion with NYSDEC Central Office staff, several of these values have changes and their current values are reflected in this summary report.

The ambient air monitoring program incorporates repositioning of sampling equipment to best define the overall contributions associated with the OBSWDC during each quarterly 24-hour test effort. Normally, two (2) collocated

**TABLE 2.1**

**TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
OLD BETHPAGE LANDFILL**

**PROGRAM EFFORTS ACCORDING TO CALENDAR QUARTER**

Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
1990-1991	July	October	February	May
1992-1993	October	March	May	August
1994	April	July	September	December
1995	March	May	July	October
1996	March	June	August	November
1997	February	April	August	November
1998	March	May	August	November
1999	March-April	May	July	November
2000	March	June	August	October
2001	March	May	August	September

Note:

The first two years of the program did not follow the calendar year schedule.



TABLE 2.2  
(Continued)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

PROGRAM TARGET COMPOUND LIST  
AND NYSDEC AMBIENT AIR GUIDELINE CONCENTRATIONS

FOOTNOTES:

<sup>a</sup> Value will be changing to 1,900 in the Spring of 2002

TOXICITY (T):

(H) HIGH Toxicity Contaminant.

(M) MODERATE Toxicity Contaminant.

(L) LOW Toxicity Contaminant.

WHO (W), Source of AGC/SGC Assignment:

(A) AGC/SGC based upon NYSDEC "Analogy".

(D) NYSDEC derived AGC/SGC.

(E) AGC based upon EPA IRIS data (RFC or Unit Risk).

(H) NYSDOH derived AGC/SGC.

(S) AGC/SGC listed is FEDERAL or NYS Standard.

(T) AGC based upon ACGIH TLV.

(Y) SGC is based on ACGIH TLV Ceiling limit.

(Z) SGC is based on ACGIH STEL.

(d) AGC assigned Moderate Toxicity "de minimis" limit.

(\*) AGC assigned High Toxicity "de minimis" limit.

(---) There is no SGC for this compound.

WHO (W), Source of special AGC/SGC Interim Assignment:

(s) AGC/SGC based upon Equivalent FEDERAL or NYS Standard.

(X) There is no AGC/SGC value for this contaminant.

-----codes-----

111111

123456789012345:

codes, (Position 1):

(U) AGC equivalent to "one in a million risk".

codes, (Position 3):

(H) FEDERAL HAP identified by 1990 CAAA.

codes, (Positions 4 & 5):

(A) ACGIH Human Carcinogen.

(B) ACGIH Suspected Human Carcinogen.

(C) ACGIH Ceiling Limit.

(G) ACGIH Simple Asphxiant.

(I) Refer to ACGIH Handbook.

(K) Multiple TLVs assigned in ACGIH Handbook.

codes, (Position 8):

(Q) REFERENCED AGC adjusted for elemental assignment.

codes, (Position 9):

(Q) REFERENCED SGC adjusted for elemental assignment.

codes, (Position 10):

(R) AGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 11):

(R) SGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 12):

(Q) AGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 13):

(Q) SGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 14):

(M) REFERENCED AGC adjusted for MOLECULAR WEIGHTS.

codes, (Position 15):

(M) REFERENCED SGC adjusted for MOLECULAR WEIGHTS.

samples were taken at an upwind location and three (3) samples were taken at two (2) locations downwind of the OBSWDC. Therefore, upwind concentrations can be compared directly to downwind concentrations to conservatively determine the impact of the OBSWDC on the ambient air.

## 2.2 Analysis of 2001 Ambient Air Quality Data

Ambient air quality levels were monitored for each 24-hour sampling period at three (3) sampling locations during the 2001 sampling events. Samplers were positioned at two (2) locations generally downwind of the OBSWDC as prescribed by the Consent Decree. Two (2) collocated low volume samples and an individually located low volume sample were collected in the downwind areas during the test efforts. Collocated samples were used as precision checks and in a screening procedure to assure high concentration constituents do not invalidate an analysis. In this case, at the upwind location and one (1) downwind location, collocated samplers were positioned to provide duplicate samples for QA/QC purposes.

Table 2.3 provides data for the 2001 monitoring program at the primary downwind sampling locations. The primary downwind location presented for each quarter was chosen based on the highest total speciated target VOCs for the downwind samples per test effort. These data represent conservative annual average ambient air concentrations downwind of the OBSWDC. The samples were collected over a 24-hour period using a 0.25 liter per minute nominal sampling rate. The individual quarterly 24-hour samples were averaged to provide an estimated annual average concentration for locations downwind of the OBSWDC. As shown in Table 2.3, the annual average value of seven (7) TCL constituents exceeded the level of their respective current AGCs specified by the NYSDEC. Two (2) TIC constituents, decane and 2 methyl 1-propene, exceeded the level of their AGC. No Target or Tentatively Identified compounds exceeded their respective SGC values.

Table 2.4 presents the 2001, 24-hour monitoring data for ambient air concentrations at the selected upwind sample locations. Two (2) collocated samplers were positioned upwind of the OBSWDC during all four (4) quarters of testing. The quarterly upwind samples presented in Table 2.4 were chosen based on lowest total speciated target VOCs in order to provide conservative 24-hour ambient air background concentrations for determining a conservative landfill impact. The samples were collected using a 0.25 liter per minute nominal sampling rate. The individual quarterly 24-hour samples were averaged to provide an estimated annual average background ambient air quality concentration. Of the annual average background concentrations presented in Table 2.4, six (6) TCL constituents exceeded the level of the current NYSDEC AGCs. None of the TICs identified at both the upwind sites

TABLE 2.3

OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
OLD BETHPAGE LANDFILL

## SUMMARY OF 24-HOUR DOWNWIND AMBIENT AIR VOST SAMPLE RESULTS

## 2001 Annual Summary

Quarterly I.D. Sample Identification*	1st D2	2nd D3**	3rd D3**	4th D3**	ANNUAL AVERAGE DOWNWIND VALUE	CURRENT AGC	FORMER AGC	CURRENT SGC
Lower Quantitation Limit (ug/m <sup>3</sup> )	0.016	0.028	0.027	0.031	0.029	---	---	---
Practical Quantitation Limit (ug/m <sup>3</sup> )	0.026	0.045	0.044	0.049	0.046	---	---	---
Target TIC Lower Quantitation Limit (ug/m <sup>3</sup> )	0.081	0.140	0.136	0.154	0.143	---	---	---
Constituent/Units	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Acetone***	7.74E-01	3.98E-01	9.40E-01	1.51E+00	9.05E-01	28,000	14,000	180,000
Benzaldehyde****						0.1	---	---
<b>Benzene</b>	<b>7.10E-01</b>	<b>&lt; 2.89E-01</b>	<b>&lt; 1.78E+00</b>	<b>&lt; 1.25E+00</b>	<b>1.01E+00</b>	0.13	0.12	1300
Bromodichloromethane						0.02	0.02	---
Bromoform***				3.23E-01	1.09E-01	0.9	0.9	---
Bromomethane						5.0	5.0	3,900
2-Butanone***	3.23E-01	< 1.74E-01	7.93E-01	2.12E+00	8.53E-01	1000	300	59,000
Carbon Disulfide	2.90E-02				2.88E-02	700	10	6200
<b>Carbon Tetrachloride</b>	<b>7.10E-01</b>	<b>7.98E-01</b>	<b>6.81E-01</b>	<b>7.45E-01</b>	<b>7.33E-01</b>	0.067	0.07	1,300
Chlorobenzene						110	20	---
Chloroethane	7.74E-02				4.09E-02	10,000	13,000	---
Chloroethyl Vinyl Ether****						0	---	---
<b>Chloroform</b>	<b>6.77E-02</b>	<b>&lt; 7.28E-02</b>	<b>&lt; 1.09E-01</b>	<b>1.94E-01</b>	<b>1.11E-01</b>	0.043	0.04	150
Chloromethane	1.84E-01	< 1.04E-01	< 1.04E-01	< 8.31E-02	1.19E-01	770	770	22,000
Dibromochloromethane				6.15E-02	3.32E-02	0.1	0.1	---
1,2-Dichlorobenzene (o)				< 3.69E-02	< 2.71E-02	360	200	30,000
1,3-Dichlorobenzene (m)						360	200	30,000
<b>1,4-Dichlorobenzene (p)</b>	<b>5.81E-02</b>	<b>&lt; 5.60E-02</b>	<b>&lt; 5.18E-02</b>	<b>&lt; 5.08E-01</b>	<b>1.68E-01</b>	0.09	700	---
1,1-Dichloroethane						20	500	---
<b>1,2-Dichloroethane</b>				<b>&lt; 4.00E-02</b>	2.78E-02	0.038	0.039	---
1,1-Dichloroethene						0.02	0.02	---
cis-1,2-Dichloroethene				< 3.69E-02	2.71E-02	1,900	1,900	---
trans-1,2-Dichloroethene						0.1a	360	---
1,2-Dichloropropane						4	0.15	51,000
1,3-Dichloropropene, cis & trans isomers						0.3	20.0	---
Ethylbenzene	2.74E-01	< 1.43E-01	< 4.50E-01	< 9.38E-01	4.51E-01	1,000	1,000	54,000
<b>2/4-Ethyltoluene (total)</b>	<b>6.13E-01</b>	<b>&lt; 2.91E-01</b>	<b>8.91E-01</b>	<b>&lt; 1.71E+00</b>	<b>8.76E-01</b>	0.1	0.1	---
Freon 13****						20000	700	560,000
2-Hexanone***				< 6.00E-01	1.79E-01	48	9.5	4100
Methylene Chloride	4.52E-01	1.90E-01	2.56E-01	1.23E+00	5.31E-01	2.1	27	14,000
4-Methyl-2-Pentanone***	1.16E-01	< 8.40E-02		1.13E+00	3.44E-01	490	480	31,000
Styrene	3.87E-02		< 3.27E-02	< 3.54E-01	1.13E-01	1,000	1,000	21,000
<b>1,1,2,2-Tetrachloroethane</b>				<b>5.45E-01</b>	<b>1.54E-01</b>	0.017	0.02	---
<b>Tetrachloroethene</b>	2.97E-01	< 2.94E-01	< 5.31E-01	<b>&lt; 1.37E+00</b>	6.23E-01	1	1.2	1,000
Toluene	2.48E+00	< 1.75E+00	< 2.17E+00	< 2.97E+00	2.34E+00	400	400	37,000
1,1,1-Trichloroethane	2.48E-01	2.46E-01	2.86E-01	3.45E-01	2.81E-01	1,000	1,000	68,000
<b>1,1,2-Trichloroethane</b>				<b>&lt; 1.05E-01</b>	4.40E-02	0.06	0.06	---
<b>Trichloroethene</b>	2.16E-01	< 3.50E-01	< 9.54E-02	<b>&lt; 2.42E+00</b>	<b>7.69E-01</b>	0.45	0.45	54,000
Trichlorofluoromethane	1.35E+00	1.41E+00	1.37E+00	3.69E+00	1.96E+00	20000	700	560,000
Vinyl Chloride						0.02	0.02	180,000
Xylenes (Total)	1.29E+00	< 6.86E-01	< 1.95E+00	3.73E+00	1.91E+00	700	300	4,300

**TABLE 2.3**  
(Continued)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
OLD BETHPAGE LANDFILL

SUMMARY OF 24-HOUR DOWNWIND AMBIENT AIR VOST SAMPLE RESULTS

ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS

2001 Annual Summary

Quarterly I.D.	1st	2nd	3rd	4th	ANNUAL AVERAGE	CURRENT	FORMER	CURRENT
Sample Identification*	D2	D3**	D3**	D3**	DOWNWIND VALUE	AGC	AGC	SGC
TIC Lower Quantitation Limit (LQL)	0.081	0.140	0.136	0.154	0.128	---	---	---
Constituent/Units	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
2-Methyl-Butane		< 2.52E-01	< 9.67E-01	< 2.20E+00	< 8.75E-01	200		
2-Methoxy-2-Methyl-Propane	6.45E-01		< 6.68E-01	< 1.43E+00	< 7.21E-01	3,000		
2-Methyl-Pentane	5.81E-01	< 3.25E-01	< 9.40E-01		< 5.00E-01	4,200	4,200	350,000
Dichlorodifluoromethane	1.45E+00	< 1.55E+00	< 9.40E-01	< 1.71E+00	1.41E+00	12,000	200	
C3 Substituted Benzene (RT=13.47-16.63)	6.13E-01	< 3.31E-01		< 1.46E+00	< 6.35E-01			
Isobutane			< 7.77E-01	< 1.58E+00	< 6.45E-01	45,000	28,000	
Hexane		< 3.78E-01	< 9.13E-01		< 3.81E-01	200	240	
Unknown RT- 1.38-14.57	1.65E+00	< 4.62E-01	< 1.19E+00	< 3.34E+00	1.66E+00			
2-Methoxy-2-Methyl-(MTBE)-Propane		< 2.24E-01			< 1.49E-01			
Dichlorotetrafluoroethane		< 2.55E-01			< 1.56E-01	17,000	17,000	
Cyclopentane		< 6.58E-01			< 2.57E-01	4,100	4,100	
Propane		< 6.30E-01			< 2.50E-01	110,000		
1-Propene, 2-methyl-		< 2.41E-01	< 8.31E-01	< 2.14E+00	< 8.23E-01	0.1		
Decane			< 1.16E+00	< 1.49E+00	< 7.18E-01	0.1	0.1	---
Octane			< 9.67E-01		< 3.35E-01	3,000	830	
Cyclic Alkane			< 8.31E-01		< 3.01E-01		830	83,000
Branched Alkane				2.09E+00	< 6.12E-01		830	83,000
alpha-pinene				< 1.37E+00	< 4.32E-01			

NOTES:

- Concentrations are in micrograms per cubic meter (ug/m3).
- Shaded areas indicate concentrations that exceed the level of the Annual Guideline Concentration (AGC).
- \* The samples identified were chosen based on the highest total speciated target VOCs for the downwind samples per test effort.
- \*\* This downwind sample was analyzed for breakthrough (analyzing the front and back traps separately) by the laboratory. Therefore, some of the concentrations reported for these compounds were listed as "<" values in the 2001 quarterly reports.
- \*\*\* An 8 nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
- \*\*\*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
- \*\*\*\*\* Proposed Value
- Blank values:
  - Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).
  - Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where less than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample.

TABLE 2.4

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
OLD BETHPAGE LANDFILL

## SUMMARY OF 24-HOUR UPWIND AMBIENT AIR VOST SAMPLE RESULTS

## 2001 Annual Summary

Quarterly I.D. Sample Identification*	1st	2nd	3rd	4th	ANNUAL AVERAGE UPWIND VALUE	CURRENT AGC	FORMER AGC	CURRENT SGC
Lower Quantitation Limit (ug/m <sup>3</sup> )	0.012	0.013	0.016	0.014	0.015	---	---	---
Practical Quantitation Limit (ug/m <sup>3</sup> )	0.020	0.022	0.026	0.023	0.024	---	---	---
Target TIC Lower Quantitation Limit (ug/m <sup>3</sup> )	0.062	0.067	0.081	0.072	0.074	---	---	---
Constituent/Units	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Acetone***	7.92E-01	6.20E-01	5.54E-01	7.23E-01	6.72E-01	28,000	14,000	180,000
Benzaldehyde****						0.1		---
<b>Benzene</b>	<b>7.92E-01</b>	<b>3.23E-01</b>	<b>5.21E-01</b>	<b>1.24E+00</b>	<b>7.20E-01</b>	0.13	0.12	1300
Bromodichloromethane						0.02	0.02	---
Bromoform***			2.61E-02	2.89E-02	2.41E-02	0.9	0.9	---
Bromomethane	1.24E-02				1.41E-02	5.0	5.0	3,900
2-Butanone***	3.96E-01	1.59E-01	5.86E-01	8.38E-01	4.95E-01	1000	300	59,000
Carbon Disulfide			1.95E-02		1.50E-02	700	10	6200
<b>Carbon Tetrachloride</b>	<b>6.93E-01</b>	<b>7.55E-01</b>	<b>6.84E-01</b>	<b>6.94E-01</b>	<b>7.06E-01</b>	0.067	0.07	1,300
Chlorobenzene						110	20	---
Chloroethane	5.45E-01	2.43E-01			2.04E-01	10,000	13,000	---
Chloroethyl Vinyl Ether****						0		---
<b>Chloroform</b>	<b>6.68E-02</b>	<b>6.47E-02</b>	<b>3.91E-01</b>	<b>1.56E-01</b>	<b>1.70E-01</b>	0.043	0.04	150
Chloromethane	1.36E-01	9.97E-02	7.82E-02	5.78E-02	9.30E-02	770	770	22,000
Dibromochloromethane						0.1	0.1	---
1,2-Dichlorobenzene (o)						360	200	30,000
1,3-Dichlorobenzene (m)						360	200	30,000
<b>1,4-Dichlorobenzene (p)</b>	<b>6.68E-02</b>	<b>4.58E-02</b>	<b>1.86E-01</b>	<b>3.47E-01</b>	<b>1.61E-01</b>	0.09	700	---
1,1-Dichloroethane						20	500	---
<b>1,2-Dichloroethane</b>		<b>4.85E-02</b>		<b>5.20E-02</b>	<b>3.23E-02</b>	0.038	0.039	---
1,1-Dichloroethene						0.02	0.02	---
cis-1,2-Dichloroethene						1,900	1,900	---
trans-1,2-Dichloroethene						0.1a	360	---
1,2-Dichloropropane						4	0.15	51,000
1,3-Dichloropropene, cis & trans isomers						0.3	20.0	---
Ethylbenzene	3.22E-01	1.75E-01	2.67E-01	8.09E-01	3.93E-01	1,000	1,000	54,000
<b>2/4-Ethyltoluene (total)</b>	<b>7.43E-01</b>	<b>3.77E-01</b>	<b>5.54E-01</b>	<b>1.53E+00</b>	<b>8.01E-01</b>	0.1	0.1	---
Freon 13****						20000	700	560,000
2-Hexanone***				2.08E-01	6.89E-02	48	9.5	4100
Methylene Chloride	3.96E-01	1.78E-01	1.76E-01	9.25E-01	4.19E-01	2.1	27	14,000
4-Methyl-2-Pentanone***	1.41E-01	1.51E-01	6.51E-01		2.42E-01	490	480	31,000
Styrene	2.72E-02	1.62E-02	1.95E-02	1.91E-01	6.34E-02	1,000	1,000	21,000
1,1,1,2-Tetrachloroethane						0.017	0.02	---
<b>Tetrachloroethene</b>	<b>2.97E-01</b>	<b>2.37E-01</b>	<b>3.58E-01</b>	<b>1.21E+00</b>	<b>5.27E-01</b>	1	1.2	1,000
Toluene	2.72E+00	4.04E+00	1.37E+00	2.51E+00	2.66E+00	400	400	37,000
1,1,1-Trichloroethane	2.45E-01	2.37E-01	2.05E-01	3.18E-01	2.51E-01	1,000	1,000	68,000
1,1,2-Trichloroethane						0.06	0.06	---
<b>Trichloroethene</b>	<b>8.17E-01</b>	<b>7.55E-01</b>	<b>7.82E-02</b>	<b>8.38E-01</b>	<b>6.22E-01</b>	0.45	0.45	54,000
Trichlorofluoromethane	1.41E+00	1.24E+00	1.01E+00	1.10E+00	1.19E+00	20000	700	560,000
Vinyl Chloride						0.02	0.02	180,000
Xylenes (Total)	1.58E+00	9.16E-01	1.34E+00	3.18E+00	1.75E+00	700	300	4,300



**TABLE 2.4  
(Continued)**

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
OLD BETHPAGE LANDFILL

24-HOUR UPWIND AMBIENT AIR VOST SAMPLE RESULTS

SUMMARY OF ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS

2001 Annual Summary

Quarterly I.D.	1st	2nd	3rd	4th	ANNUAL AVERAGE UPWIND VALUE	CURRENT AGC	FORMER AGC	CURRENT SGC
Sample Identification*	U1	U1	U2	U1				
TIC Lower Quantitation Limit (LQL)	0.062	0.067	0.081	0.072	0.071	---	---	---
Constituent/Units	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Butane	7.67E-01				< 2.47E-01	45,000	45,000	
2-Methyl-Butane	9.41E-01		6.84E-01	1.71E+00	< 8.49E-01	200		
2-Methoxy-2-Methyl-Propane	6.68E-01	4.85E-01		1.91E+00	< 7.86E-01	3,000		
2-Methyl-Pentane		3.23E-01			< 1.35E-01	4,200	4,200	350,000
Dichlorodifluoromethane	6.93E-01	9.97E-01			< 4.61E-01	12,000	200	
C3 Substituted Benzene (RT=13.47-16.63)		3.50E-01	8.14E-01	1.33E+00	< 6.39E-01			
Isobutane	6.68E-01				< 2.22E-01	45,000	28,000	
Undecane			9.45E-01		< 2.87E-01			
Unknown RT- 1.38-14.57	9.90E-01		2.15E+00	1.47E+00	< 1.17E+00			
Cyclopentane		3.50E-01			< 1.41E-01	4,100	4,100	
Branched Alkane		3.77E-01	1.24E+00	2.66E+00	< 1.08E+00		830	

NOTES

- Concentrations are in micrograms per cubic meter (ug/m<sup>3</sup>).
- Shaded areas indicate concentrations that exceed the level of the Annual Guideline Concentration (AGC).
- \* The samples identified were chosen based on the lowest total speciated target VOCs for the upwind samples per test effort.
- \*\*\* An 8 nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis
- \*\*\*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit
- \*\*\*\*\* Proposed Value
- Blank values:
  - Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13)
  - Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where less than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample

exceeded the level of their respective AGCs in the annual upwind averages. No Target or Tentatively Identified Compounds exceeded their respective SGC values.

As a means of providing a conservative estimate of the potential impacts from the OBSWDC, the difference between the annual average upwind values and downwind values are calculated and compared to the level of the current NYSDEC AGCs. These values are provided in Table 2.5. To be conservative, the upwind annual average included quarterly upwind samples with comparatively the lowest concentration of speciated target VOCs while the downwind annual average included quarterly samples with comparatively the highest concentrations of speciated target VOCs. As shown in Table 2.5, the results indicate that two (2) TCL constituents, benzene and 1,1,2,2-tetrachloroethane potentially impact the ambient air quality at concentrations that exceed the level of the current AGCs. If an estimate is calculated using all upwind and downwind data, the net benzene impact downwind of the landfill is just below the State guideline while the net 1,1,2,2-tetrachloroethane impact downwind of the landfill is slightly higher than the AGC. However, it should be noted that 1,1,2,2-tetrachloroethane was only detected in one downwind sample and there are no known sources of this compound at this landfill. All other TCL constituents identified in the annual averages have differential downwind impact values that are below their respective AGCs.

The short-term guideline values for the target compounds were estimated from the 24-hour recorded values. The individual quarterly concentrations shown in Tables 2.3 and 2.4, if divided by 0.4 (the ratio of 24-hour to 1-hour concentrations), will yield estimated short term values. All resulting values fall within their respective SGC values. The remaining upwind and downwind ambient air quality sample data that were collected during the four test efforts during the 2001 monitoring program are presented in Appendix A. In all cases, no measured concentrations exceeded this respective short-term guideline value.

### 2.3 Analysis of the Ambient Air Quality Program Data Base Since 1990

The ambient air quality at and surrounding the Old Bethpage Landfill has been monitored by RTP Environmental Associates, Inc. for the Town since 1990. Over the course of the past twelve years, several changes have been made to the program to improve the quality of the data. These changes occurred throughout the program, principally before 1997. A comparison between upwind and downwind sample ambient data collected during 2000 and in 2001 confirm that benzene, carbon tetrachloride, chloroform and 2/4-ethyltoluene (previously reported as ethyl-methyl benzene) concentrations consistently exceed the level of the NYSDEC ambient annual guideline values at both upwind and downwind locations. For the 2001 monitoring program trichloroethene exceeds the NYSDEC ambient

TABLE 2.5

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
OLD BETHPAGE LANDFILL

## ESTIMATION OF POTENTIAL IMPACTS

Quarterly I.D. Sample Identification	ANNUAL AVERAGE DOWNWIND VALUE	ANNUAL AVERAGE UPWIND VALUE	DOWNWIND - UPWIND VALUE	CURRENT AGC
Lower Quantitation Limit (ug/m3)	0.0287	0.0147	---	---
Target TIC Lower Quantitation Limit (ug/m3)	0.0459	0.0236	---	---
Practical Quantitation Limit (ug/m3)	0.1434	0.0737	---	---
Constituent/Units	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Acetone*	9.05E-01	6.72E-01	2.33E-01	28,000
Benzaldehyde**				0.1
<b>Benzene</b>	<b>1.01E+00</b>	<b>7.20E-01</b>	<b>2.87E-01</b>	0.13
Bromodichloromethane				0.02
Bromoform*	1.09E-01	2.41E-02	8.52E-02	0.9
Bromomethane		1.41E-02		5.0
2-Butanone*	8.53E-01	4.95E-01	3.58E-01	1000
Carbon Disulfide	2.88E-02	1.50E-02	1.38E-02	700
<b>Carbon Tetrachloride</b>	<b>7.33E-01</b>	<b>7.06E-01</b>	2.71E-02	0.067
Chlorobenzene				110
Chloroethane	4.09E-02	2.04E-01		10,000
Chloroethyl Vinyl Ether**				0
<b>Chloroform</b>	<b>1.11E-01</b>	<b>1.70E-01</b>		0.043
Chloromethane	1.19E-01	9.30E-02	2.56E-02	770
Dibromochloromethane	3.32E-02		3.32E-02	0.1
1,2-Dichlorobenzene (o)	2.71E-02		2.71E-02	360
1,3-Dichlorobenzene (m)				360
<b>1,4-Dichlorobenzene (p)</b>	<b>1.68E-01</b>	<b>1.61E-01</b>	7.10E-03	0.09
1,1-Dichloroethane				20
1,2-Dichloroethane	2.78E-02	3.23E-02		0.038
1,1-Dichloroethene				0.02
cis-1,2-Dichloroethene	2.71E-02		2.71E-02	1,900
trans-1,2-Dichloroethene				0.1a
1,2-Dichloropropane				4
1,3-Dichloropropene, cis & trans isomers				0.3
Ethylbenzene	4.51E-01	3.93E-01	5.79E-02	1,000
<b>2/4-Ethyltoluene (total)</b>	<b>8.76E-01</b>	<b>8.01E-01</b>	7.44E-02	0.1
Freon 13**				20000
2-Hexanone*	1.79E-01	6.89E-02	1.10E-01	48
Methylene Chloride	5.31E-01	4.19E-01	1.13E-01	2.1
4-Methyl-2-Pentanone*	3.44E-01	2.42E-01	1.02E-01	490
Styrene	1.13E-01	6.34E-02	4.99E-02	1,000
<b>1,1,2,2-Tetrachloroethane</b>	<b>1.54E-01</b>		<b>1.54E-01</b>	0.017
Tetrachloroethene	6.23E-01	5.27E-01	9.63E-02	1
Toluene	2.34E+00	2.66E+00		400
1,1,1-Trichloroethane	2.81E-01	2.51E-01	3.01E-02	1,000
1,1,2-Trichloroethane	4.40E-02		4.40E-02	0.06
<b>Trichloroethene</b>	<b>7.69E-01</b>	<b>6.22E-01</b>	1.47E-01	0.45
Trichlorofluoromethane	1.96E+00	1.19E+00	7.67E-01	20000
Vinyl Chloride				0.02
Xylenes (Total)	1.91E+00	1.75E+00	1.60E-01	700

## NOTES:

- Concentrations are in micrograms per cubic meter (ug/m3).
- Shaded areas indicate concentrations that exceed the level of the Annual Guideline Concentration (AGC).
- \* An 8 nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
- \*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
- Blank values:
  - Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).

annual guideline value at both upwind and downwind locations and 1,1,2,2-tetrachloroethane exceeds it's guideline at the downwind samples only. Several compounds observed in upwind and downwind samples during the first two years of monitoring appear at slightly higher concentration values when compared to 2000 and 2001 values. The decrease for some compounds may, in part, be attributed to landfill capping which was completed in January 1993 and the decrease in landfill gas generation which is expected to occur with time. Furthermore, the 2001 study data show that upwind and downwind concentrations for most compounds, in general, are similar and thus, tending to discount the OBSWDC as a significant source of any detected compounds.

#### 2.4 Analysis of 2001 Soil Gas VOC Concentration Data

The 2001 soil gas VOC samples provide data on the concentrations of TCL and TIC constituents in the soil gas in the vicinity of the landfill. Soil gas concentrations of the identified constituents observed during the 2001 year of testing have been presented in the quarterly reports and summary tables are reproduced in Appendix B of this report. Table 2.6 provides an annual summary of soil gas VOC concentrations. To be conservative, these samples were chosen based on the highest total speciated target VOCs for the soil gas samples per test effort for the shallow thirty inch wells only. As shown in Table 2.6, a total of four (4) compounds averaged higher than their respective AGC value in the ambient air. At any individual well, M13 would provide the highest annual average, nearly equivalent to the values presented in Table 2.6. The number of soil gas wells containing target compound constituents that had exceeded the level of their respective AGCs were similar throughout the four 2001 quarterly tests. For TIC constituents, one (1) compound a limonene isomer is shown on average to exceed the annual level primarily because of the high first quarter result. Since these are not ambient air values, they cannot be directly compared to NYSDEC ambient guidelines; although, the measured ten-minute concentrations for several compounds are in excess of the levels of annual ambient air guideline values specified. The NYSDEC has not developed VOC concentration guidelines for soils, and therefore, a direct comparison to applicable State regulations cannot be made. Nassau County does not have soil gas standards at this point.

The 2001 soil gas VOST sample results for cluster well M9, including wells M9(10'), M9(20'), M9(30') and M9(40') show an increase in certain constituent concentrations as well depth increases for all four quarterly tests. This trend may be attributed to groundwater conditions at this location.

TABLE 2.6

TOWN OF OYSTER BAY  
 OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
 OLD BETHPAGE LANDFILL

SUMMARY OF SOIL GAS VOC SAMPLE RESULTS  
 CALENDAR YEAR 2001

Quarterly I.D.	1st	2nd	3rd	4th	ANNUAL AVERAGE	CURRENT
Soil Gas Well Identification*	M4	M13	M13	M13	---	AGC
Lower Quantitation Limit (LQL)	0.477	1.02	0.997	0.483	0.658	---
Practical Quantitation Limit (PQL)	0.763	1.62	1.60	0.77	1.05	---
Targeted TIC LQL	2.38	5.08	4.99	2.41	3.29	---
Constituent/Units	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m <sup>3</sup> )
Acetone**	3.05E+01	< 3.55E+00			9.11E+00	28,000
Benzaldehyde***						0.1
Benzene						0.13
Bromodichloromethane						0.02
Bromoform**						0.9
Bromomethane						5.0
2-Butanone**			< 4.49E+00		1.91E+00	1000
Carbon Disulfide						700
<b>Carbon Tetrachloride</b>	<b>5.72E-01</b>				<b>2.14E+00</b>	0.067
Chlorobenzene						110
Chloroethane						10,000
Chloroethyl Vinyl Ether***						0
<b>Chloroform</b>		<b>&lt; 1.73E+00</b>	<b>&lt; 3.39E+00</b>	<b>2.90E+00</b>	<b>2.10E+00</b>	0.043
Chloromethane						770
Dibromochloromethane						0.1
1,2-Dichlorobenzene (o)						360
1,3-Dichlorobenzene (m)						360
1,4-Dichlorobenzene (p)						0.09
1,1-Dichloroethane		< 2.13E+00	< 7.48E+00	3.19E+00	3.19E+00	20
1,2-Dichloroethane						0.038
1,1-Dichloroethene						0.02
cis-1,2-Dichloroethene			< 1.50E+00	4.83E-01	1.02E+00	1,900
trans-1,2-Dichloroethene			< 1.89E+00	6.76E-01	1.17E+00	0.1a
1,2-Dichloropropane						4
1,3-Dichloropropene, cis & trans isomers						0.3
Ethylbenzene						1,000
2/4-Ethyltoluene (total)						0.1
Freon 13***						20000
2-Hexanone**						48
Methylene Chloride	5.72E-01	2.13E+00	1.20E+00	1.16E+00	8.75E-01	2.1
4-Methyl-2-Pentanone**						490
Styrene						1,000
1,1,2,2-Tetrachloroethane						0.017
<b>Tetrachloroethene</b>	<b>6.67E-01</b>	<b>&lt; 3.91E+01</b>	<b>&lt; 8.33E+01</b>	<b>7.05E+01</b>	<b>3.88E+01</b>	1
Toluene	1.05E+00				2.37E+00	400
1,1,1-Trichloroethane		< 3.35E+00	< 1.45E+01	9.46E+00	6.50E+00	1,000
1,1,2-Trichloroethane						0.06
<b>Trichloroethene</b>		<b>&lt; 2.94E+00</b>	<b>&lt; 9.07E+00</b>	<b>6.18E+00</b>	<b>4.34E+00</b>	0.45
Trichlorofluoromethane	1.62E+00	< 2.34E+00	< 5.68E+00	4.73E+00	3.41E+00	20000
Vinyl Chloride						0.02
Xylenes (Total)						700

**TABLE 2.6**  
**(Continued)**

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
OLD BETHPAGE LANDFILL

SUMMARY OF SOIL GAS VOC SAMPLE RESULTS  
CALENDAR YEAR 2001

Quarterly	1st	2nd	3rd	4th	ANNUAL AVERAGE	CURRENT
Soil Gas Well Identification*	M4	M13	M13	M13	---	AGC
Additional TIC LQL	2.38	5.08	4.99	2.41	3.04	---

Constituent/Units	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Unknown RT- 1.38-14.57	9.34E+01				2.65E+01	
<b>Limonine isomer</b>	<b>1.33E+02</b>				<b>3.65E+01</b>	0.1
methylmethylethylisomer cyclohexane	6.77E+01				2.00E+01	
Branched Alkane (RT=5.86 - 13.73)			< 5.98E+00		3.96E+00	
Straight-chain Alkane (RT=12.79-15.04)			< 5.08E+00		3.74E+00	
Thiazole			< 5.08E+00		3.74E+00	
Nonanal			< 6.68E+00		4.14E+00	

NOTES:

- Concentrations are in micrograms per cubic meter (ug/m<sup>3</sup>).
- Shaded areas indicate concentrations that exceed the level of the Annual Guideline Concentration (AGC).
- \* The samples identified were chosen based on the highest total speciated target VOCs for the soil gas samples per test effort.
- \*\* An 8 nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
- \*\*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
- Blank values:  
Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).

## 2.5 Analysis of the Soil Gas Program Data Base Since 1990

VOC concentrations in soil gas samples have been measured at the OBSWDC since 1990. Throughout the past twelve years, modifications have been made to the soil gas program in order to provide quality data. However, since 1992, the soil gas wells that have been sampled and the target sample volume has remained the same. Therefore, these data are directly comparable. A comparison of soil gas VOC concentration data from 1992 through 2001 shows that the compounds carbon tetrachloride, chloroform, tetrachloroethene and trichloroethene consistently exceed the level of the NYSDEC ambient annual guideline values. Benzene is no longer in exceedance for 2001 where it has been seen in excess of guidelines in previous years. In general, these soil gas VOC concentration exceedances increased in number from 1992 through 1997. Since 1997, the number of exceedances has remained similar for each test year. It is critical to note that the subsurface soil gas data were only ten minute samples which are not directly comparable to NYSDEC annual guideline concentration values for ambient air. As stated before, Nassau County does not have soil gas standards at this point, and therefore, a direct comparison to applicable regulations cannot be made.

## 2.6 Analysis of 2001 Soil Gas Pressure Measurements

Soil gas pressure measurements were made during the 2001 testing program as prescribed in the Consent Order. The locations of the pressure wells are provided in the quarterly reports. PW1 and PW2 are on the Old Bethpage Solid Waste Disposal Complex property while PW3 is off-site at the Firemen's Training Center. PW1 is located outside the perimeter collection system while PW2 is located within the perimeter collection system.

The majority of soil gas pressure readings were zero or negative during 2001. The soil gas pressure readings, as provided in Appendix C, show that very slightly positive pressure readings were measured at PW3 (10' depth) for the second quarter and at PW1 & PW2 (20' depth) for the third quarter. Zero or negative readings were measured at the rest of the test sites for all quarters. Positive or zero pressure readings are dependent on landfill influences, the perimeter collection system status, atmospheric pressure and perched water near the well location. A drop in the ambient barometric pressure, in general, causes gases to be emitted from the soil, resulting in a positive pressure reading relative to the ambient pressure at a pressure well.

Ambient atmospheric pressure is measured at the landfill during each quarterly test effort to determine the atmospheric pressure drop over the 24-hour test period. Ambient pressure drops for each quarter were calculated

by subtracting the lowest ambient pressure from the highest. Ambient pressure drops during the test efforts were reviewed and are similar for the first and third quarters with a large pressure drop ( $>.20$  in  $H_2O$ ) and similar for the second and fourth quarters with a small pressure drop ( $<.06$  in  $H_2O$ ).

### 3.0 SUMMARY AND CONCLUSIONS

In summary, the 2001 test program involved collecting data on ambient air and soil gas volatile organic compound samples and soil gas pressure readings. The program was completed according to the NYSDEC approved monitoring plan which is in conformance with the Order on Consent. The data indicates that several compounds, most notably benzene, carbon tetrachloride, chloroform, 2/4-ethyltoluene, 1,1,2,2-tetrachloroethane and trichloroethene have ambient air concentrations in excess of the level of their respective NYSDEC annual guideline concentrations. These compounds were measured in excess of the level of the guideline values at locations both upwind and downwind of the OBSWDC.

The samples collected downwind of the OBSWDC generally show average VOC concentration levels that do not exceed NYSDEC guidelines when average conservative upwind VOC concentrations are subtracted. However, one target constituent, benzene, when adjusted for conservative background levels, exceeded the level of the guideline value downwind of the landfill. When all data are used to estimate actual conditions as monitored, benzene emissions from the landfill would not singularly cause an exceedance of the State AGC value. However, for 1,1,2,2-tetrachloroethane emissions would appear to result in a minor exceedance of its respective State AGC value.

Representative upwind and downwind values have been used in estimating air quality impacts associated with releases from the landfill. It should be noted, however, that quarterly monitoring occurred during generally steady or falling barometric pressure conditions which tend to maximize the observed impacts from any landfill source. The downwind sampling locations were also positioned on or near the foot of the landfill slope again maximizing the recorded impact. One would expect to observe a decrease in these levels as the distance downwind of the landfill and the other sources increases.

A data base is being developed for both an uncapped and a capped landfill. Since capping was completed, the data collected for a limited set of compounds continues to show an exceedance of the NYSDEC ambient guideline values both upwind and downwind of the OBSWDC. Additionally, the target compound list has been occasionally updated based on continuing reviews of tentatively identified compounds being detected by enhanced analytical procedures.



These compounds can be significant as illustrated by 2/4-ethyltoluene which was not on the initial list of target compounds but was measured in excess of the current State annual guideline concentration both upwind and downwind of the OBSWDC.

In conclusion, the ambient VOC concentrations measured during the 2001 study upwind and downwind of the facility for most compounds appear to be similar. Based on this data, the Old Bethpage Solid Waste Disposal Complex, could have caused an independent minor violation of the State guidelines for only one compound, and therefore, it is not having a significant impact on air quality for measured VOC compounds. No VOC compound concentrations measured downwind of the landfill exceeded NYSDEC short-term guidelines.

**APPENDIX A**

**TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
EVALUATION OF VOLATILE ORGANIC COMPOUNDS IN  
AMBIENT AIR AND SOILS AND SOIL GAS PRESSURE READINGS**

**2001 ANNUAL SUMMARY REPORT**

**2001 QUARTERLY AMBIENT AIR CONCENTRATION DATA**

TABLE 4.1

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

## AMBIENT AIR VOST SAMPLE RESULTS

2001 First Quarter

SAMPLE IDENTIFICATION*	24-HR AMBIENT AIR SAMPLE					BLANK		CURRENT AGC	24-HOUR SGC****
	U1	U2	D1	D2	D3	FB2	TB1		
LOWER QUANTITATION LIMIT (LQL)	0.0124	0.0126	0.0128	0.0161	0.0262	5	5		
PRACTICAL QUANTITATION LIMIT (PQL)	0.0198	0.0201	0.0205	0.0258	0.0419	8	8		
TARGETED TIC LQL	0.0619	0.0628	0.0639	0.0806	0.131	25	25		
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ng)	(ng)	(ug/m3)	(ug/m3)
Acetone**	7.92E-01	6.03E-01	3.84E-01	7.74E-01	6.28E-01	11		14,000	56,000
Benzaldehyde***									
<b>Benzene</b>	<b>7.92E-01</b>	<b>6.03E-01</b>	<b>7.42E-01</b>	<b>7.10E-01</b>	<b>&lt; 7.46E-01</b>			0.12	13
Bromodichloromethane								0.02	
Bromoform**								0.9	480
Bromomethane	1.24E-02	1.51E-02						5.0	1,800
2-Butanone**	3.96E-01	4.27E-01	2.81E-01	3.23E-01	< 4.14E-01			300	56,000
Carbon Disulfide				2.90E-02				10	284
<b>Carbon Tetrachloride</b>	<b>6.93E-01</b>	<b>7.29E-01</b>	<b>7.42E-01</b>	<b>7.10E-01</b>	<b>7.43E-01</b>			0.07	520
Chlorobenzene								20	4,400
Chloroethane	5.45E-01	6.28E-01	8.95E-02	7.74E-02				13,000	25,200
Chloroethyl Vinyl Ether***									
<b>Chloroform</b>	<b>6.68E-02</b>	<b>7.54E-02</b>	<b>7.67E-02</b>	<b>6.77E-02</b>	<b>&lt; 8.12E-02</b>			0.04	392
Chloromethane	1.36E-01	1.58E-01	1.53E-01	1.84E-01				770	8,800
Dibromochloromethane								0.1	
1,2-Dichlorobenzene (o)								200	14,400
1,3-Dichlorobenzene (m)								200	14,400
1,4-Dichlorobenzene (p)	6.68E-02	6.78E-02	5.37E-02	5.81E-02	< 6.81E-02			700	5,600
1,1-Dichloroethane								500	38,400
1,2-Dichloroethane								0.039	380.0
1,1-Dichloroethene								0.02	800
cis-1,2-Dichloroethene								1,900	76,000
trans-1,2-Dichloroethene								360	
1,2-Dichloropropane								0.15	33,200
1,3-Dichloropropane, cis & trans isomers								20	440
Ethylbenzene	3.22E-01	3.52E-01	2.81E-01	2.74E-01	< 3.27E-01			1,000	40,000
<b>2/4-Ethyltoluene (total)</b>	<b>7.43E-01</b>	<b>7.29E-01</b>	<b>6.14E-01</b>	<b>6.13E-01</b>	<b>&lt; 1.05E-01</b>			0.1	
Freon 13***								700	224,000
2-Hexanone**								10	380
Methylene Chloride	3.96E-01	4.52E-01	4.35E-01	4.52E-01	5.65E-01	19		27	16,400
4-Methyl-2-Pentanone**	1.41E-01	1.36E-01	6.65E-02	1.16E-01	< 1.28E-01			480	19,200
Styrene	2.72E-02	3.02E-02	2.56E-02	3.87E-02				1,000	8,000
1,1,2,2-Tetrachloroethane								0.02	640
Tetrachloroethene	2.97E-01	2.76E-01	3.07E-01	2.97E-01	< 3.27E-01			1.2	16,000
Toluene	2.72E+00	2.51E+00	2.28E+00	2.48E+00	< 2.08E+00			400	18,000
1,1,1-Trichloroethane	2.45E-01	2.51E-01	2.56E-01	2.48E-01	3.04E-01			1,000	180,000
1,1,2-Trichloroethane								0.06	5,200
<b>Trichloroethene</b>	<b>8.17E-01</b>	<b>8.79E-01</b>	2.30E-01	2.16E-01	< 2.30E-01			0.45	13,200
Trichlorofluoromethane	1.41E+00	1.63E+00	1.82E+00	1.35E+00	1.68E+00			700	224,000
Vinyl Chloride								0.02	520.0
<b>Xylenes (Total)</b>	<b>1.58E+00</b>	<b>1.58E+00</b>	1.38E+00	1.29E+00	< 1.40E+00			300	40,000

TABLE 4.1  
Continued

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

AMBIENT AIR VOST SAMPLE RESULTS

2001 First Quarter

SAMPLE TYPE SAMPLE IDENTIFICATION (1)	24-HR AMBIENT AIR SAMPLE					BLANK		CURRENT	24-HOUR
	U1	U2	D1	D2	D3	FB2	TB1	AGC	SGC****
ADDITIONAL TIC LQL	0.062	0.063	0.064	0.081	0.131	25	25		
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ng)	(ng)	(ug/m3)	(ug/m3)
Butane	7.67E-01	8.29E-01	8.44E-01		< 1.19E+00		*	45,000	450,000
2-Methyl-pentane	6.68E-01	7.29E-01	6.39E-01	5.81E-01	7.46E-01			4,200	
2-Methoxy-2-Methyl-propane	9.41E-01	9.55E-01	6.65E-01	6.45E-01	9.16E-01				
C3 subst. Benzenes		6.73E-01		6.13E-01	< 5.69E-01			0.12	32
2-Methyl-butane					< 7.72E-01				
Hexane					< 6.41E-01			240	42,000
Nonane								25,000	250,000
Unknown RT-1.38-14.48	9.90E-01		7.16E-01	1.65E+00	< 9.55E-01				
Isobutane	6.68E-01		6.14E-01		< 1.32E+00			28,000	450,000
Dichlorodifluoromethane	6.93E-01	1.08E+00	1.10E+00	1.45E+00	< 8.77E-01				
Isobutane + Unknown (RT=1.74)		7.54E-01							

NOTES:

- \* See Figure 2.1 for ambient air and soil gas sampling locations.
- \*\* An 8 (splitless) nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
- \*\*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
- \*\*\*\* This 24-hour guideline concentration was calculated by multiplying the current SGC value (last revised October 16, 1995 and still current as of May 2001) by 0.4 (EPA averaging time adjustment factor).
- U1/U2: Ambient upwind samplers collocated 80' east of the brick house, just south of the circular concrete cistern on the northern side of the landfill.
- D1/D2: Ambient downwind samplers were collocated 210 feet south of Haul Road on the western side of the perimeter driveway.
- D3: Ambient downwind sampler collected 25 feet east of soil gas well M37.
- FB2: Ambient Field Blank.
- TB1: Trip Blank
- All values are reported in micrograms per standard cubic meter (ug/std-m<sup>3</sup>) except for the field blank and trip blank mass loading results which are reported in nanograms (ng).
- Blank values:
  - Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).
  - Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where less than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample.
- Values in shaded areas are at or exceed the level of the current (last revised October 16, 1995 and still current as of May 2001) and/or previous ambient air Annual Guideline Concentration (AGC) values.
- Less than values (<) are used where the Lower Quantitation Limit, the Target TIC Lower Quantitation Limit, or the Practical Quantitation Limit is averaged with the reported values.
- Freon 13 is listed as Chlorotrifluoromethane in the analytical results, Appendix C.
- (ug/std-m<sup>3</sup>): micrograms per standard cubic meter
- (ng): nanograms

TABLE 4.1

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

## AMBIENT AIR VOST SAMPLE RESULTS

2001 Second Quarter

SAMPLE IDENTIFICATION*	24-HR AMBIENT AIR SAMPLE					BLANK		CURRENT AGC	24-HOUR SGC****
	U1	U2	D1	D2	D3	FB3	TB1		
LOWER QUANTITATION LIMIT (LQL)	0.0135	0.0136	0.0132	0.0149	0.0280	5	5		
PRACTICAL QUANTITATION LIMIT (PQL)	0.0216	0.0217	0.0212	0.0238	0.0448	8	8		
TARGETED TIC LQL	0.0674	0.0679	0.0661	0.0744	0.140	25	25		
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ng)	(ng)	(ug/m3)	(ug/m3)
Acetone**	6.20E-01	5.16E-01	2.62E-01	2.56E-01	3.98E-01	21		14,000	56,000
Benzaldehyde***									
<b>Benzene</b>	<b>3.23E-01</b>	<b>3.53E-01</b>	<b>2.43E-01</b>	<b>2.98E-01</b>	<b>&lt; 2.89E-01</b>			0.12	13
Bromodichloromethane								0.02	
Bromoform**								0.9	480
Bromomethane								5.0	1,800
2-Butanone**	1.59E-01	1.63E-01	1.46E-01	1.73E-01	< 1.74E-01			300	56,000
Carbon Disulfide								10	284
<b>Carbon Tetrachloride</b>	<b>7.55E-01</b>	<b>7.61E-01</b>	<b>7.14E-01</b>	<b>8.33E-01</b>	<b>7.98E-01</b>			0.07	520
Chlorobenzene								20	4,400
Chloroethane	2.43E-01	2.50E-01						13,000	25,200
Chloroethyl Vinyl Ether***									
<b>Chloroform</b>	<b>6.47E-02</b>	<b>5.98E-02</b>	<b>5.82E-02</b>	<b>6.55E-02</b>	<b>&lt; 7.28E-02</b>			0.04	392
Chloromethane	9.97E-02	9.51E-02	1.06E-01	1.07E-01	< 1.04E-01			770	8,800
Dibromochloromethane								0.1	
1,2-Dichlorobenzene (o)								200	14,400
1,3-Dichlorobenzene (m)								200	14,400
1,4-Dichlorobenzene (p)	4.58E-02	4.89E-02	2.91E-02	3.27E-02	< 5.60E-02			700	5,600
1,1-Dichloroethane								500	38,400
<b>1,2-Dichloroethane</b>	<b>4.85E-02</b>	<b>5.16E-02</b>	<b>4.23E-02</b>	<b>5.36E-02</b>				0.039	380.0
1,1-Dichloroethene								0.02	800
cis-1,2-Dichloroethene								1,900	76,000
trans-1,2-Dichloroethene								360	
1,2-Dichloropropane								0.15	33,200
1,3-Dichloropropene, cis & trans isomers								20	440
Ethylbenzene	1.75E-01	1.79E-01	1.06E-01	1.28E-01	< 1.43E-01			1,000	40,000
<b>2/4-Ethyltoluene (total)</b>	<b>3.77E-01</b>	<b>3.80E-01</b>	<b>2.54E-01</b>	<b>2.92E-01</b>	<b>&lt; 2.91E-01</b>			0.1	
Freon 13***								700	224,000
2-Hexanone**								10	380
Methylene Chloride	1.78E-01	1.85E-01	1.90E-01	1.90E-01	1.90E-01	14		27	16,400
4-Methyl-2-Pentanone**	1.51E-01	1.68E-01			< 8.40E-02			480	19,200
Styrene	1.62E-02	1.90E-02						1,000	8,000
1,1,1,2-Tetrachloroethane								0.02	640
Tetrachloroethene	2.37E-01	2.47E-01	2.04E-01	2.44E-01	< 2.94E-01			1.2	16,000
Toluene	4.04E+00	4.08E+00	8.20E-01	1.01E+00	< 1.75E+00			400	18,000
1,1,1-Trichloroethane	2.37E-01	2.36E-01	2.28E-01	8.63E-02	2.46E-01			1,000	180,000
1,1,2-Trichloroethane								0.06	5,200
<b>Trichloroethene</b>	<b>7.55E-01</b>	<b>7.88E-01</b>	1.40E-01	1.85E-01	< 3.50E-01			0.45	13,200
Trichlorofluoromethane	1.24E+00	1.22E+00	1.43E+00	1.64E+00	1.41E+00			700	224,000
Vinyl Chloride								0.02	520.0
Xylenes (Total)	9.16E-01	9.51E-01	5.56E-01	6.55E-01	< 6.86E-01			300	40,000

TABLE 4.1  
Continued

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

AMBIENT AIR VOST SAMPLE RESULTS

2001 Second Quarter

SAMPLE TYPE SAMPLE IDENTIFICATION (1)	24-HR AMBIENT AIR SAMPLE					BLANK		CURRENT AGC	24-HOUR SGC****
	U1	U2	D1	D2	D3	FB3	TB1		
ADDITIONAL TIC LQL	0.067	0.068	0.066	0.074	0.140	25	25		
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ng)	(ng)	(ug/m3)	(ug/m3)
2-Methyl-pentane	3.23E-01	3.26E-01		2.98E-01	< 3.25E-01			4,200	
2-Methoxy-2-Methyl-propane	4.85E-01	4.62E-01							
<b>C3 subst. Benzene</b>	<b>3.50E-01</b>	<b>3.80E-01</b>	<b>2.91E-01</b>	<b>3.27E-01</b>	<b>&lt; 3.31E-01</b>			0.12	32
2-Methyl-butane					< 2.52E-01				
2-Methoxy-2-Methyl-(MTBE)-propane					< 2.24E-01				
Hexane			2.65E-01		< 3.78E-01			240	42,000
Unknown RT-1.38-13.47			3.70E-01	4.17E-01	< 4.62E-01				
Dichlorodifluoromethane	9.97E-01	9.78E-01	9.52E-01	1.10E+00	< 1.55E+00				
Dichlorotetrafluoroethane					< 2.55E-01				
Ethane, 1,1,2-trichloro-1,2,2-triflu			3.97E-01						
Cyclopentane	3.50E-01		3.44E-01	3.87E-01	< 6.58E-01				
Nonanal				2.77E-01					
Propane					< 6.30E-01				
1-Propene,2-methyl-					< 2.41E-01				
Branched Alkane	3.77E-01								
3-Methyl-Hexane		3.80E-01							
Butyl ester, Acetic Acid		3.53E-01							

NOTES:

- \* See Figure 2.1 for ambient air and soil gas sampling locations.
- \*\* An 8 (splitless) nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
- \*\*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
- \*\*\*\* This 24-hour guideline concentration was calculated by multiplying the current SGC value (last revised October 16, 1995 and still current as of January 2000) by 0.4 (EPA averaging time adjustment factor).
- U1/U2: Ambient upwind samplers collocated 80' east of the brick house, just south of the circular concrete cistern on the northern side of the landfill.
- D1/D2: Ambient downwind samplers were collocated 210 feet south of Haul Road on the western side of the permitter driveway.
- D3: Ambient downwind sampler collected 100 feet southeast of pressure well PW1.
- FB3: Ambient Field Blank.
- TB1: Trip Blank
- All values are reported in micrograms per standard cubic meter (ug/std-m<sup>3</sup>) except for the field blank and trip blank mass loading results which are reported in nanograms (ng).
- Blank values:
  - Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).
  - Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where less than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample.
- Values in shaded areas are at or exceed the level of the current (last revised October 16, 1995 and still current as of May 2001) and/or previous ambient air Annual Guideline Concentration (AGC) values.
- Less than values (<) are used where the Lower Quantitation Limit, the Target TIC Lower Quantitation Limit, or the Practical Quantitation Limit is averaged with the reported values.
- Freon 13 is listed as Chlorotrifluoromethane in the analytical results, Appendix C.
- (ug/std-m<sup>3</sup>): micrograms per standard cubic meter
- (ng): nanograms

TABLE 4.1

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

## AMBIENT AIR VOST SAMPLE RESULTS

2001 Third Quarter

SAMPLE IDENTIFICATION*	24-HR AMBIENT AIR SAMPLE					BLANK		CURRENT AGC	24-HOUR SGC****
	U1	U2	D1	D2	D3	FB2	TB1		
LOWER QUANTITATION LIMIT (LQL)	0.0145	0.0163	0.0133	0.0150	0.0272	5	5		
PRACTICAL QUANTITATION LIMIT (PQL)	0.0231	0.0261	0.0213	0.0240	0.0436	8	8		
TARGETED TIC LQL	0.0723	0.0814	0.0665	0.0749	0.136	25	25		
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ng)	(ng)	(ug/m3)	(ug/m3)
Acetone**	3.18E-01	5.54E-01	6.12E-01	5.39E-01	9.40E-01			14,000	56,000
Benzaldehyde***									
<b>Benzene</b>	<b>5.71E-01</b>	<b>3.91E-01</b>	<b>4.51E-01</b>	<b>5.39E-01</b>	<b>&lt; 1.78E+00</b>			0.12	13
Bromodichloromethane								0.02	
Bromoform**		2.61E-02						0.9	480
Bromomethane								5.0	1,800
2-Butanone**	4.34E-01	5.86E-01	5.32E-01	6.59E-01	7.93E-01			300	56,000
Carbon Disulfide	4.62E-02	1.95E-02	2.39E-02	2.10E-02				10	284
<b>Carbon Tetrachloride</b>	<b>7.23E-01</b>	<b>6.84E-01</b>	<b>5.85E-01</b>	<b>7.19E-01</b>	<b>6.81E-01</b>			0.07	520
Chlorobenzene								20	4,400
Chloroethane								13,000	25,200
Chloroethyl Vinyl Ether***									
<b>Chloroform</b>	<b>6.07E-01</b>	<b>5.91E-01</b>	<b>9.31E-02</b>	<b>1.11E-01</b>	<b>&lt; 1.09E-01</b>			0.04	392
Chloromethane	8.38E-02	7.82E-02	9.04E-02	8.98E-02	< 1.04E-01			770	8,800
Dibromochloromethane								0.1	
1,2-Dichlorobenzene (o)								200	14,400
1,3-Dichlorobenzene (m)								200	14,400
1,4-Dichlorobenzene (p)	1.79E-01	1.86E-01	1.57E-01	1.89E-01	< 5.18E-02			700	5,600
1,1-Dichloroethane								500	38,400
1,2-Dichloroethane								0.039	380.0
1,1-Dichloroethene								0.02	800
cis-1,2-Dichloroethene								1,900	76,000
trans-1,2-Dichloroethene								360	
1,2-Dichloropropane								0.15	33,200
1,3-Dichloropropene, cis & trans isomers								20	440
Ethylbenzene	3.47E-01	2.67E-01	2.61E-01	2.99E-01	< 4.50E-01			1,000	40,000
<b>2/4-Ethyltoluene (total)</b>	<b>6.36E-01</b>	<b>5.54E-01</b>	<b>5.05E-01</b>	<b>5.99E-01</b>	<b>8.91E-01</b>			0.1	
Freon 13***								700	224,000
2-Hexanone**								10	380
Methylene Chloride	2.89E-01	1.76E-01	3.19E-01	2.99E-01	2.56E-01	53		27	16,400
4-Methyl-2-Pentanone**	7.80E-01	6.51E-01	6.38E-01	7.49E-01				480	19,200
Styrene	2.02E-02	1.95E-02	1.60E-02	1.80E-02	< 3.27E-02			1,000	8,000
1,1,2,2-Tetrachloroethane								0.02	640
Tetrachloroethene	4.62E-01	3.58E-01	3.72E-01	4.19E-01	< 5.31E-01			1.2	16,000
Toluene	1.50E+00	1.37E+00	1.28E+00	1.50E+00	< 2.17E+00			400	18,000
1,1,1-Trichloroethane	2.20E-01	2.05E-01	1.91E-01	2.25E-01	2.86E-01			1,000	180,000
1,1,2-Trichloroethane								0.06	5,200
Trichloroethene	1.01E-01	7.82E-02	7.45E-02	8.68E-02	< 9.54E-02			0.45	13,200
Trichlorofluoromethane	1.99E+00	1.01E+00	1.70E+00	1.89E+00	1.37E+00			700	224,000
Vinyl Chloride								0.02	520.0
Xylenes (Total)	1.47E+00	1.34E+00	1.14E+00	1.35E+00	< 1.95E+00			300	40,000

TABLE 4.1  
Continued

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

AMBIENT AIR VOST SAMPLE RESULTS

2001 Third Quarter

SAMPLE TYPE SAMPLE IDENTIFICATION (1)	24-HR AMBIENT AIR SAMPLE					BLANK		CURRENT	24-HOUR
	U1	U2	D1	D2	D3	FB2	TB1	AGC	SGC****
ADDITIONAL TIC LQL	0.072	0.081	0.066	0.075	0.136	25	25		
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ng)	(ng)	(ug/m3)	(ug/m3)
2-Methyl-pentane			8.78E-01	6.89E-01	< 9.40E-01			4,200	
2-Methoxy-2-Methyl-propane	1.59E+00		1.12E+00	1.23E+00	< 6.68E-01				
Undecane		9.45E-01	6.91E-01						
<b>C3 subst. Benzene</b>	<b>9.54E-01</b>	<b>8.14E-01</b>						0.12	32
2-Methyl-butane	1.07E+00	6.84E-01	7.98E-01	7.78E-01	< 9.67E-01				
Hexane			6.65E-01		< 9.13E-01			240	42,000
<b>Decane</b>					< <b>1.16E+00</b>			0.1	
Unknown RT=3.30-14.57	1.01E+00	2.15E+00			< 1.19E+00				
Isobutane					< 7.77E-01			28,000	450,000
Dichlorodifluoromethane			6.91E-01	7.49E-01	< 9.40E-01				
Trimethyl-isomer hexane				8.38E-01					
Octane					< 9.67E-01				
Cyclic alkane					< 8.31E-01				
propene 2-methyl					< 8.31E-01				
Branched Alkane (RT=5.86 - 13.73)	2.28E+00	1.24E+00							

NOTES:

- \* See Figure 2.1 for ambient air and soil gas sampling locations.
  - \*\* An 8 (splitless) nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
  - \*\*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
  - \*\*\*\*This 24-hour guideline concentration was calculated by multiplying the current SGC value (last revised October 16, 1995 and still current as of May 2001) by 0.4 (EPA averaging time adjustment factor).
- U1/U2: Ambient upwind samplers collocated on the 15th hole of the Bethpage State Park Black Golf Course, approximately 150 feet west of Round Swamp Road.
- D1/D2: Ambient downwind samplers collocated approximately 75 feet southwest of the southwestern corner of the RAP building.
- D3: Ambient downwind sampler collected approximately 250 feet southwest of soil gas well M13 on the eastern side of the landfill.
- FB2: Field Blank
- TB1: Trip Blank
- All values are reported in micrograms per standard cubic meter (ug/std-m<sup>3</sup>) except for the field blank and trip blank mass loading results which are reported in nanograms (ng).
  - Blank values:  
Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).
  - Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where less than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample.
  - Values in shaded areas are at or exceed the level of the current (last revised October 16, 1995 and still current as of May 2001) and/or previous ambient air Annual Guideline Concentration (AGC) values.
  - Less than values (<) are used where the Lower Quantitation Limit, the Target TIC Lower Quantitation Limit, or the Practical Quantitation Limit is averaged with the reported values.
  - Freon 13 is listed as Chlorotrifluoromethane in the analytical results, Appendix C.
  - (ug/std-m<sup>3</sup>): micrograms per standard cubic meter
  - (ng): nanograms



TABLE 4.1

TOWN OF OYSTER BAY  
 OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

AMBIENT AIR VOST SAMPLE RESULTS

2001 Fourth Quarter

SAMPLE IDENTIFICATION*	24-HR AMBIENT AIR SAMPLE					BLANK		CURRENT AGC	24-HOUR SGC****
	U1	U2	D1	D2	D3	FB2	TB1		
LOWER QUANTITATION LIMIT (LQL)	0.0145	0.0145	0.0142	0.0149	0.0308	5	5		
PRACTICAL QUANTITATION LIMIT (PQL)	0.0231	0.0233	0.0227	0.0239	0.0492	8	8		
TARGETED TIC LQL	0.0723	0.0727	0.0710	0.0746	0.154	25	25		
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ng)	(ng)	(ug/m3)	(ug/m3)
Acetone**	7.23E-01	7.56E-01	1.28E+00	7.76E-01	1.51E+00	9	*	14,000	56,000
Benzaldehyde***									
<b>Benzene</b>	<b>1.24E+00</b>	<b>1.25E+00</b>	<b>1.59E+00</b>	<b>1.70E+00</b>	< <b>1.25E+00</b>			0.12	13
Bromodichloromethane								0.02	
Bromoform**	2.89E-02	2.91E-02	2.56E-02	2.69E-02	3.23E-01			0.9	480
Bromomethane			1.70E-02					5.0	1,800
2-Butanone**	8.38E-01	8.14E-01	7.39E-01	8.36E-01	2.12E+00			300	56,000
Carbon Disulfide			1.70E-02					10	284
<b>Carbon Tetrachloride</b>	<b>6.94E-01</b>	<b>6.98E-01</b>	<b>7.10E-01</b>	<b>7.16E-01</b>	<b>7.45E-01</b>			0.07	520
Chlorobenzene								20	4,400
Chloroethane				2.09E-02				13,000	25,200
Chloroethyl Vinyl Ether***									
<b>Chloroform</b>	<b>1.56E-01</b>	<b>1.57E-01</b>	<b>1.53E-01</b>	<b>1.64E-01</b>	<b>1.94E-01</b>			0.04	392
Chloromethane	5.78E-02	1.08E-01	5.68E-02	9.25E-02	< 8.31E-02			770	8,800
Dibromochloromethane					6.15E-02			0.1	
1,2-Dichlorobenzene (o)					< 3.69E-02			200	14,400
1,3-Dichlorobenzene (m)								200	14,400
1,4-Dichlorobenzene (p)	3.47E-01	4.07E-01	3.41E-01	3.58E-01	< 5.08E-01			700	5,600
1,1-Dichloroethane								500	38,400
<b>1,2-Dichloroethane</b>	<b>5.20E-02</b>				< <b>4.00E-02</b>			0.039	380.0
1,1-Dichloroethene								0.02	800
cis-1,2-Dichloroethene			3.13E-02	3.58E-02	< 3.69E-02			1,900	76,000
trans-1,2-Dichloroethene								360	
1,2-Dichloropropane								0.15	33,200
1,3-Dichloropropene, cis & trans isomers								20	440
Ethylbenzene	8.09E-01	8.43E-01	8.52E-01	8.66E-01	< 9.38E-01			1,000	40,000
<b>2/4-Ethyltoluene (total)</b>	<b>1.53E+00</b>	<b>1.57E+00</b>	<b>1.73E+00</b>	<b>1.70E+00</b>	< <b>1.71E+00</b>			0.1	
Freon 13***								700	224,000
2-Hexanone**			2.19E-01	2.18E-01	< 6.00E-01			10	380
Methylene Chloride	9.25E-01	6.10E-01	9.94E-01	1.19E+00	1.23E+00	25		27	16,400
4-Methyl-2-Pentanone**			4.83E-01	1.76E+00	1.13E+00			480	19,200
Styrene	1.91E-01	1.60E-01	3.41E-01	5.07E-01	< 3.54E-01			1,000	8,000
1,1,2,2-Tetrachloroethane					<b>5.45E-01</b>			0.02	640
<b>Tetrachloroethene</b>	<b>1.21E+00</b>	<b>1.25E+00</b>	<b>1.31E+00</b>	<b>1.37E+00</b>	< <b>1.37E+00</b>			1.2	16,000
Toluene	2.51E+00	2.47E+00	2.64E+00	2.69E+00	< 2.97E+00			400	18,000
1,1,1-Trichloroethane	3.18E-01	3.20E-01	4.26E-01	4.18E-01	3.45E-01			1,000	180,000
1,1,2-Trichloroethane					< <b>1.05E-01</b>			0.06	5,200
<b>Trichloroethene</b>	<b>8.38E-01</b>	<b>8.72E-01</b>	<b>2.07E+00</b>	<b>2.27E+00</b>	< <b>2.42E+00</b>			0.45	13,200
Trichlorofluoromethane	1.10E+00	1.16E+00	1.22E+00	1.22E+00	3.69E+00			700	224,000
Vinyl Chloride								0.02	520.0
Xylenes (Total)	3.18E+00	3.20E+00	3.41E+00	3.28E+00	3.73E+00			300	40,000

TABLE 4.1

Continued

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

AMBIENT AIR VOST SAMPLE RESULTS

2001 Fourth Quarter

SAMPLE TYPE	24-HR AMBIENT AIR SAMPLE					BLANK		CURRENT	24-HOUR
	U1	U2	D1	D2	D3	FB2	TB1	AGC	SGC****
SAMPLE IDENTIFICATION (1)	0.072	0.073	0.071	0.075	0.154	25	25		
ADDITIONAL TIC LQL									
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ng)	(ng)	(ug/m3)	(ug/m3)
2-Methyl-1 propene		3.20E+00	1.34E+00		< 2.14E+00			45,000	450,000
2-Methyl-pentane		3.78E+00	1.48E+00	2.24E+00				4,200	
2-Methoxy-2-Methyl-propane	1.91E+00	4.07E+00	1.96E+00	2.33E+00	< 1.43E+00				
Branched Alkane RT: 5.85-13.52	2.66E+00		1.31E+00	1.34E+00	2.09E+00				
Undecane				1.55E+00					
Alpha pinene					< 1.37E+00				
<b>C3 subst. Benzene</b>	<b>1.33E+00</b>		<b>1.51E+00</b>		< <b>1.46E+00</b>			0.12	32
2-Methyl-butane	1.71E+00	6.10E+00			< 2.20E+00				
Hexane		3.78E+00		1.31E+00				240	42,000
<b>Decane</b>			<b>1.53E+00</b>		< <b>1.49E+00</b>			0.1	0
Unknown RT: 4.12-14.18	1.47E+00	2.62E+00		1.37E+00	< 3.34E+00				
Isobutane					< 1.58E+00			28,000	450,000
Dichlorodifluoromethane					< 1.71E+00				

NOTES:

- \* See Figure 2.1 for ambient air and soil gas sampling locations.
- \*\* An 8 (splitless) nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
- \*\*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
- \*\*\*\* This 24-hour guideline concentration was calculated by multiplying the current SGC value (last revised October 16, 1995 and still current as of January 2000) by 0.4 (EPA averaging time adjustment factor).
- U1/U2: Ambient upwind samplers collocated on the 15th hole of the Bethpage State Park Black Golf Course, approximately 150 feet west of Round Swamp Road.
- D1/D2: Ambient downwind sampler collected approximately 250 feet west of soil gas well M9 on the eastern side of the landfill.
- D3: Ambient downwind samplers collocated approximately 75 feet southwest of the southwestern corner of the RAP building
- FB2: Ambient field blank
- TB1: Trip Blank
- All values are reported in micrograms per standard cubic meter (ug/std-m<sup>3</sup>) except for the field blank and trip blank mass loading results which are reported in nanograms (ng).
- Blank values:
  - Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).
  - Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where less than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample.
- Values in shaded areas are at or exceed the level of the current (last revised October 16, 1995 and still current as of May 2001) and/or previous ambient air Annual Guideline Concentration (AGC) values.
- Less than values (<) are used where the Lower Quantitation Limit, the Target TIC Lower Quantitation Limit, or the Practical Quantitation Limit is averaged with the reported values.
- Freon 13 is listed as Chlorotrifluoromethane in the analytical results, Appendix C.
- (ug/std-m<sup>3</sup>): micrograms per standard cubic meter
- (ng): nanograms

**APPENDIX B**

**TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
EVALUATION OF VOLATILE ORGANIC COMPOUNDS IN  
AMBIENT AIR AND SOILS AND SOIL GAS PRESSURE READINGS**

**2001 ANNUAL SUMMARY REPORT**

**2001 QUARTERLY SOIL GAS CONCENTRATION DATA**

TABLE 4.2

TOWN OF OYSTER BAY

OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

2001 First Quarter

SOIL GAS WELL ID	F1	M2	M4	M5	M6	M9(10)	M9(20)	M9(30)	M9(40)	Current AGC	Current SGC
LOWER QUANTIFICATION LIMIT (LQL)	0.962	0.475	0.477	0.473	0.473	0.477	0.474	0.954	0.474	---	---
PRACTICAL QUANTIFICATION LIMIT (PQL)	1.538	0.760	0.763	0.757	0.758	0.763	0.759	1.527	0.76	---	---
TARGETED TIC LQL	4.81	2.38	2.38	2.37	2.37	2.38	2.37	4.77	2.37	---	---
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m3)	(ug/m3)
Acetone*	< 2.21E+00	2.00E+00	3.05E+01	2.18E+00	1.99E+00	1.62E+00	3.98E+00			14,000	140,000
Benzaldehyde**										0.12	32
Benzene										0.02	---
Bromodichloromethane										0.9	1,200
Bromoform*										5	4500
Bromomethane										300	140,000
2-Butanone*										10	710
Carbon Disulfide										0.07	1,300
Carbon Tetrachloride		6.65E-01	5.72E-01	5.68E-01	6.43E-01					20	11,000
Chlorobenzene										13,000	63,000
Chloroethane											
Chloroethyl Vinyl Ether**											
Chloroform	< 1.35E+00				7.58E-01				6.64E-01	0.04	980
Chloromethane										770	22,000
Dibromochloromethane										0.1	---
1,2-Dichlorobenzene (o)										200	36,000
1,3-Dichlorobenzene (m)										200	36,000
1,4-Dichlorobenzene (p)										700	14,000
1,1-Dichloroethane										500	96,000
1,2-Dichloroethane										0.039	950
1,1-Dichloroethene										0.02	2,000
cis-1,2-Dichloroethene										1,900	190,000
trans-1,2-Dichloroethene										360	---
1,2-Dichloropropane										0.15	83,000
1,3-Dichloropropane										20	1,100
cis & trans isomers										1,000	100,000
Ethylbenzene										0.1	---
2/4-Ethyltoluene (total)										700	560,000
Freon 13**										9.5	950
2-Hexanone*										27	41,000
Methylene Chloride	1.92E+00	9.51E-01	5.72E-01	8.51E-01	6.63E-01	5.72E-01	1.71E+00	1.53E+00	1.04E+00	480	48,000
4-Methyl-2-Pentanone*										1,000	20,000
Styrene										0.02	1,600
1,1,2,2-Tetrachloroethane										1.2	40,000
Tetrachloroethene	< 6.92E+00	7.60E-01	6.67E-01	1.42E+00	7.58E-01	3.53E+01	9.49E+01	1.34E+02	2.09E+02	400	45,000
Toluene	< 1.06E+00	6.65E-01	1.05E+00	6.62E-01	8.52E-01	6.67E-01	1.04E+00			1,000	450,000
1,1,1-Trichloroethane						1.33E+00	2.66E+00	3.91E+00	7.87E+00	0.06	13,000
1,1,1,2-Trichloroethane										0.45	33,000
Trichloroethene		5.70E-01							4.74E-01	700	560,000
Trichlorofluoromethane	< 2.88E+00	1.81E+00	1.62E+00	1.80E+00	1.80E+00	4.48E+00	7.02E+00	9.06E+00	1.71E+01	0.02	1,300
Vinyl Chloride										300	100,000
Xylenes (Total)											

TABLE 4.2  
(Continued)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS

2001 First Quarter

SOIL GAS WELL ID	F1 (ug/std-m <sup>3</sup> )	M2 (ug/std-m <sup>3</sup> )	M4 (ug/std-m <sup>3</sup> )	M5 (ug/std-m <sup>3</sup> )	M6 (ug/std-m <sup>3</sup> )	M9(10) (ug/std-m <sup>3</sup> )	M9(20) (ug/std-m <sup>3</sup> )	M9(30) (ug/std-m <sup>3</sup> )	M9(40) (ug/std-m <sup>3</sup> )	Current AGC (ug/m3)	Current SGC (ug/m3)
ADDITIONAL TIC LQL	4.81	2.38	2.38	2.37	2.37	2.38	2.37	4.77	2.37		
VOC COMPOUND NAME											
Hexane						6.58E+00					
Unknown RT-1.38-14.48			9.34E+01						8.91E+00		
Dichlorodifluoromethane	<					1.05E+01	2.18E+01	8.68E+01	1.99E+02	200	1,200,000
1,1-dichloro-1-fluoroethane	<										
Pinene isomer RT-11.94-12.95			4.19E+02								
Limonene isomer			1.33E+02								
Dichlorotetrafluoroethane	<					2.00E+01	1.14E+02	1.97E+02	4.27E+02	17,000	1,700,000
Ethane, 1,1,2-trichloro-1,2,2-trifluoro-						7.63E+00	2.56E+01	3.02E+01	6.54E+01		
Methylmethylcyclohexane											
alpha-Methylstyrene			6.77E+01			2.67E+00					

TABLE 4.2  
(Continued)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
SOIL GAS VOST SAMPLE RESULTS

2001 First Quarter

SOIL GAS WELL ID	M13	M16	M21	M22	M28	M31	M34	M37	M39	Current AGC	Current SGC
LOWER QUANTIFICATION LIMIT (LOL)	0.483	0.486	0.487	0.483	0.492	0.496	0.496	0.499	0.483	---	---
PRACTICAL QUANTIFICATION LIMIT (PQL)	0.772	0.777	0.779	0.773	0.787	0.79	0.793	0.798	0.773	---	---
TARGETED TIC LQL	2.41	2.43	2.43	2.42	2.46	2.48	2.48	2.50	2.42	---	---
VOC COMPOUND NAME	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Acetone*	2.32E+00	1.75E+00	1.46E+00	1.35E+00	3.15E+00	3.96E+00	2.18E+00	3.09E+00	2.42E+00	14.000	140.000
Benzaldehyde**											
Benzene										0.12	32
Bromodichloromethane										0.02	---
Bromoform*										0.9	1,200
Bromomethane										5	4,500
2-Butanone*										300	140,000
Carbon Disulfide										10	710
Carbon Tetrachloride										0.07	1,300
Chlorobenzene										20	11,000
Chloroethane										13.000	63,000
Chloroethyl Vinyl Ether**											
Chloroform										0.04	980
Chloromethane										770	22,000
Dibromochloromethane										0.1	---
1,2-Dichlorobenzene (o)										200	36,000
1,3-Dichlorobenzene (m)										200	36,000
1,4-Dichlorobenzene (p)										700	14,000
1,1-Dichloroethane										500	96,000
1,2-Dichloroethane										0.039	950
1,1-Dichloroethene										0.02	2,000
cis-1,2-Dichloroethene										1.900	190,000
trans-1,2-Dichloroethene										360	---
1,2-Dichloropropane										0.15	83,000
1,3-Dichloropropene, cis & trans isomers										20	1,100
Ethylbenzene										1,000	100,000
2/4-Ethyltoluene (total)										0.1	---
Freon 13**										700	560,000
2-Hexanone*										9.5	950
Methylene Chloride										27	41,000
4-Methyl-2-Pentanone*										480	48,000
Styrene										1,000	20,000
1,1,2,2-Tetrachloroethane										0.02	1,600
Tetrachloroethene										1.2	40,000
Toluene										400	45,000
1,1,1-Trichloroethane										1,000	450,000
1,1,2-Trichloroethane										0.06	13,000
Trichloroethene										0.45	33,000
Trichlorofluoromethane										700	560,000
Vinyl Chloride										0.02	1,300
Xylenes (Total)										300	100,000

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TABLE 4.2  
(Concluded)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS

2001 First Quarter

SOIL GAS WELL ID	M13	M16	M21	M22	M28	M31	M34	M37	M39	Current AGC	Current SGC
ADDITIONAL TIC LQL	2.41	2.43	2.43	2.42	2.46	2.48	2.48	2.50	2.42	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Unknown RT-1.38-14.48			2.49E+01		1.05E+01	3.31E+01		3.49E+00			
Isobutane							2.58E+00				
Dichlorodifluoromethane							3.47E+00	3.09E+00			
Pine isomer RT-11.94-12.95								2.69E+01	3.38E+00		
Nonanal	3.38E+00		4.28E+00		3.24E+00	3.67E+00	3.37E+00				
Santolina triene									1.26E+01		

NOTES:

- \* An 8 nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
- \*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
- All values are reported in micrograms per standard cubic meter (ug/std-m<sup>3</sup>).
- Blank values:
- Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).
- Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where less than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample
- Values in shaded areas are at or exceed the level of the current (last revised October 16, 1995 and still current as of May 2001) and/or previous ambient air Annual Guideline Concentration (AGC) values.
- Less than values (<) are used where the Lower Quantitation Limit, the Target TIC Lower Quantitation Limit, or the Practical Quantitation Limit is averaged with the reported values.
- Freon 13 is listed as Chlorotrifluoromethane in the Analytical Results, Appendix C.
- (ug/std-m<sup>3</sup>): micrograms per standard cubic meter
- (ng): nanograms





TABLE 4.2  
(Continued)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS

2001 Second Quarter

SOIL GAS WELL ID	F1	M2	M4	M5	M6	M9(10)	M9(20)	M9(30)	M9(40)	Current AGC	Current SGC
ADDITIONAL TIC LQL	(ug/Std-m <sup>3</sup> )	(ug/Std-m <sup>3</sup> )	(ug/Std-m <sup>3</sup> )	(ug/Std-m <sup>3</sup> )	(ug/Std-m <sup>3</sup> )	(ug/Std-m <sup>3</sup> )	(ug/Std-m <sup>3</sup> )	(ug/Std-m <sup>3</sup> )	(ug/Std-m <sup>3</sup> )	(ug/m3)	(ug/m3)
VOC COMPOUND NAME											
Dichlorodifluoromethane	2.41E+00								3.19E+01	200	1,200,000
1,1-dichloro-1-fluoroethane	1.11E+01										
Dichlorotetrafluoroethane									3.85E+01	17,000	1,700,000
Ethane, 1,1,2-trichloro-1,2,2-trifluoro-									3.85E+01	30,000	1,800,000
Branched Alkane	2.60E+00									830	83,000
Methylstyrene (alpha)	2.51E+00									580	58,000

TABLE 4.2  
(Continued)

TOWN OF OYSTER BAY

OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

2001 Second Quarter

SOIL GAS WELL ID	M13	M16	M21	M22	M28	M31	M34	M37	M39	Current AGC	Current SGC
LOWER QUANTIFICATION LIMIT (LQL)	1.015	0.500	0.503	0.507	0.493	0.504	0.492	0.493	0.505	---	---
PRACTICAL QUANTIFICATION LIMIT (PQL)	1.624	0.799	0.805	0.811	0.788	0.81	0.787	0.788	0.808	---	---
TARGETED TIC LQL	5.08	2.50	2.52	2.54	2.46	2.52	2.46	2.46	2.53	---	---
VOC COMPOUND NAME	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/sid-m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Acetone*	3.55E+00	1.70E+00	2.31E+00	1.83E+00	1.77E+00	2.72E+00	2.95E+00	1.28E+00	2.83E+00	14.000	140.000
Benzaldehyde**											
<b>Benzene</b>		<b>5.00E-01</b>					<b>7.87E-01</b>			0.12	32
Bromodichloromethane										0.02	---
Bromoform*										0.9	1.200
Bromomethane										5	4.500
2-Butanone*										300	140.000
Carbon Disulfide										10	710
<b>Carbon Tetrachloride</b>		<b>5.99E-01</b>		<b>7.10E-01</b>	<b>6.90E-01</b>		<b>6.89E-01</b>			0.07	1.300
Chlorobenzene										20	11.000
Chloroethane										13.000	63.000
Chloroethyl Vinyl Ether**											
<b>Chloroform</b>	<b>1.73E+00</b>	<b>4.30E+00</b>	<b>1.91E+00</b>					<b>7.88E-01</b>		0.04	980
Chloromethane										770	22.000
Dibromochloromethane										0.1	---
1,2-Dichlorobenzene (o)										200	36.000
1,3-Dichlorobenzene (m)										200	36.000
1,4-Dichlorobenzene (p)										700	14.000
1,1-Dichloroethane	2.13E+00									500	96.000
<b>1,2-Dichloroethane</b>		<b>1.50E+00</b>								0.039	950
1,1-Dichloroethene										0.02	2.000
cis-1,2-Dichloroethene										1.900	190.000
trans-1,2-Dichloroethene										360	---
1,2-Dichloropropane										0.15	83.000
1,3-Dichloropropene, cis & trans isomers										20	1.100
Ethylbenzene							<b>4.92E-01</b>			1.000	100.000
2,4-Ethyltoluene (total)										0.1	---
Freon 13**										700	560.000
2-Hexanone*										9.5	950
Methylene Chloride	2.13E+00	1.90E+00	1.81E+00	2.13E+00	1.87E+00	1.61E+00	2.66E+00	1.08E+00	1.31E+00	27	41.000
4-Methyl-2-Pentanone*										480	48.000
Styrene										1.000	20.000
1,1,2,2-Tetrachloroethane										0.02	1.600
<b>Tetrachloroethene</b>	<b>3.91E+01</b>	<b>3.20E+00</b>	<b>2.21E+00</b>	6.09E-01	5.91E-01	8.06E-01		<b>2.17E+00</b>	<b>3.43E+01</b>	1.2	40.000
Toluene	3.35E+00	3.20E+00		1.83E+00	9.85E-01		2.66E+00		5.05E-01	400	45.000
1,1,1-Trichloroethane							8.86E-01		5.05E-01	1.000	450.000
1,1,2-Trichloroethane										0.06	13.000
<b>Trichloroethene</b>	<b>2.94E+00</b>									0.45	33.000
Trichlorofluoromethane	2.34E+00	3.00E+00	1.91E+00	2.03E+00	1.77E+00	2.22E+00	1.87E+00	1.77E+00	2.02E+00	700	560.000
Vinyl Chloride										0.02	1.300
Xylenes (Total)							2.26E+00			300	100.000

**TABLE 4.2**  
**(Concluded)**

**TOWN OF OYSTER BAY**  
**OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX**

**SOIL GAS VOST SAMPLE RESULTS**

**ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS**

**2001 Second Quarter**

SOIL GAS WELL ID	M13	M16	M21	M22	M28	M31	M34	M37	M39	Current
ADDITIONAL TIC LQL	5.08	2.50	2.52	2.54	2.46	2.52	2.46	2.46	2.53	Current
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	AGC
1,1-dichloro,1-fluoroethane								3.74E+00		(ug/m <sup>3</sup> )
Nonanal							3.15E+00			SGC
										(ug/m <sup>3</sup> )

**NOTES:**

- \* An 8 nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
- \*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
- All values are reported in micrograms per standard cubic meter (ug/std-m<sup>3</sup>).
- Blank values:
- Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).
- Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where less than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample.
- Values in shaded areas are at or exceed the level of the current (last revised October 16, 1995 and still current as of May 2001) and/or previous ambient air Annual Guideline Concentration (AGC) values.
- Less than values (<) are used where the Lower Quantitation Limit, the Target TIC Lower Quantitation Limit, or the Practical Quantitation Limit is averaged with the reported values.
- Freon 13 is listed as Chlorotrifluoromethane in the Analytical Results, Appendix C.
- (ug/std-m<sup>3</sup>): micrograms per standard cubic meter
- (ng): nanograms

TABLE 4.2

TOWN OF OYSTER BAY  
 OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

2001 Third Quarter

SOIL GAS WELL ID	F1	M2	M4	M5	M6	M9(10)	M9(20)	M9(30)	M9(40)	Current	Current
LOWER QUANTITATION LIMIT (LQL)	0.500	0.494	0.501	0.498	0.500	0.501	0.501	1.000	0.504	---	---
PRACTICAL QUANTITATION LIMIT (PQL)	0.799	0.790	0.801	0.797	0.800	0.801	0.801	1.600	0.81	---	---
TARGETED TIC LQL	2.50	2.47	2.50	2.49	2.50	2.50	2.50	5.00	2.52	---	---
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m3)	(ug/m3)
Acetone*										14.000	140.000
Benzaldehyde**											
<b>Benzene</b>				<b>5.98E-01</b>						0.12	32
Bromodichloromethane										0.02	---
Bromoform*										0.9	1,200
Bromomethane										5	4500
2-Butanone*										300	140,000
Carbon Disulfide		4.24E+00							7.06E-01	10	710
Carbon Tetrachloride										0.07	1,300
Chlorobenzene										20	11,000
Chloroethane										13,000	63,000
Chloroethyl Vinyl Ether**											
<b>Chloroform</b>	<b>1.30E+00</b>			<b>6.97E-01</b>		<b>5.01E-01</b>				0.04	980
Chloromethane										770	22,000
Dibromochloromethane										0.1	---
1,2-Dichlorobenzene (o)										200	36,000
1,3-Dichlorobenzene (m)										200	36,000
1,4-Dichlorobenzene (p)										700	14,000
1,1-Dichloroethane										500	96,000
1,1-Dichloroethane										0.039	950
cis-1,2-Dichloroethane										0.02	2,000
trans-1,2-Dichloroethane										1,900	190,000
1,2-Dichloropropane									1.61E+00	360	---
1,3-Dichloropropane, cis & trans isomers										0.15	83,000
Ethylbenzene										20	1,100
<b>2/4-Ethyltoluene (total)</b>				<b>8.9E-01</b>						1,000	100,000
Freon 13**										0.1	---
2-Hexanone*										700	560,000
<b>Methylene Chloride</b>				1.20E-00		7.01E-01		1.10E+00	1.11E+00	9.5	950
4-Methyl-2-Pentanone*			5.01E-01					< 4.25E+01		27	41,000
Styrene										480	48,000
1,1,2,2-Tetrachloroethane										1,000	20,000
<b>Tetrachloroethene</b>	<b>1.70E+01</b>	<b>2.67E+00</b>	<b>3.40E+00</b>	<b>3.88E+00</b>	<b>1.60E+00</b>	<b>2.90E+01</b>	<b>4.60E+01</b>	<b>&lt; 1.21E+02</b>	<b>1.81E+02</b>	0.02	1,600
Toluene				2.39E-00						400	45,000
1,1,1-Trichloroethane								9.01E-01	2.22E-01	1,000	450,000
1,1,2-Trichloroethane										0.06	13,000
<b>Trichloroethene</b>	<b>5.99E-01</b>								<b>3.02E+00</b>	0.45	33,000
Trichlorofluoromethane			1.30E+00	1.10E-00	1.10E-00	3.80E-00		9.60E-00	1.92E-01	700	560,000
Vinyl Chloride										0.02	1,300
Xylenes (Total)				1.59E-00				< 1.00E-00		300	100,000

TABLE 4.2  
(Continued)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS

2001 Third Quarter

SOIL GAS WELL ID	F1	M2	M4	M5	M6	M9(10)	M9(20)	M9(30)	M9(40)	Current AGC	Current SGC
ADDITIONAL TIC LQL	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m3)	(ug/m3)
VOC COMPOUND NAME											
Hexane	2.50	2.47	2.50	2.49	2.50	2.50	2.50	5.00	2.52		
<b>Decane</b>	<b>3.90E+00</b>										
Unknown RT = 3.30-14.57	1.10E+01	2.67E+00		3.09E+00		8.01E+00				0.1	
Dichlorodifluoromethane						4.80E+00	3.50E+00				
1-chloro,1-fluoroethane						3.80E+00	6.71E+00	3.35E+01	6.65E+01	200	1,200,000
1,1-dichloro,1-fluoroethane								7.80E+00			
Dichlorotetrafluoroethane								7.00E+00			
Ethane, 1,1,1,2-trichloro-1,2,2-trifluoro							2.60E+00	2.55E+01	6.45E+01	17,000	1,700,000
Trimethyl-isomer hexane	7.69E+00	3.95E+00						3.50E+01	7.66E+01		
Branched Alkane (RT = 5.86 - 13.73)	3.80E+00		4.10E+00	3.09E+00	3.00E+00	6.61E+00	3.40E+00				
2-butyl-1-octanol	5.49E+00	2.86E+00									
Straight-chain Alkane (RT = 12.79-15.04)											
Hexanal						1.01E+01	6.21E+00				
Octanal				3.29E+00							
Decanal				3.59E+00							
Nonanal				4.28E+00	2.90E+00						
				6.87E+00							

TABLE 4.2  
(Continued)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

2001 Third Quarter

SOIL GAS WELL ID	M13	M16	M21	M22	M28	M31	M34	M37	M39	Current	Current
LOWER QUANTIFICATION LIMIT (LQL)	0.997	0.498	0.503	0.506	0.510	0.512	0.511	0.516	0.512	AGC	SGC
PRACTICAL QUANTIFICATION LIMIT (PQL)	1.595	0.797	0.805	0.810	0.815	0.82	0.818	0.826	0.820	---	---
TARGETED TIC LQL	4.99	2.49	2.52	2.53	2.55	2.56	2.56	2.58	2.56	---	---
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Acetone*		4.88E+00		2.43E+00		1.23E+00	3.48E+00		1.54E+00	14,000	140,000
Benzaldehyde**											
Benzene							7.1E-01			0.12	32
Bromodichloromethane										0.02	---
Bromoforn*										0.9	1,200
Bromomethane										5	4,500
2-Butanone*	<	4.49E+00		2.63E+01		2.25E+00	2.97E+00			300	140,000
Carbon Disulfide		1.59E-01		1.42E+00						10	710
Carbon Tetrachloride				6.07E-01			5.11E-01			0.07	1,300
Chlorobenzene										20	11,000
Chloroethane										13,000	63,000
Chloroethyl Vinyl Ether**											
Chloroform	<	3.39E+00	1.31E+01	9.01E+00	1.22E+01			2.37E+00		0.04	980
Chloromethane		4.48E+00								770	22,000
Dibromochloromethane										0.1	---
1,2-Dichlorobenzene (o)										200	36,000
1,3-Dichlorobenzene (m)										200	36,000
1,4-Dichlorobenzene (p)										700	14,000
1,1-Dichloroethane	<	7.48E+00								500	96,000
1,2-Dichloroethane		1.29E+00								0.039	950
1,1-Dichloroethene										0.02	2,000
cis-1,2-Dichloroethene	<	1.50E+00								1,900	190,000
trans-1,2-Dichloroethene	<	1.89E+00								360	---
1,2-Dichloropropane										0.15	83,000
1,3-Dichloropropane, cis & trans isomers										20	1,100
Ethylbenzene										1,000	100,000
2,4-Ethyltoluene (total)				7.09E-01			6.13E-01			0.1	---
Freon 13**										700	560,000
2-Hexanone*										9.5	950
Methylene Chloride	1.20E+00	1.99E+00	1.11E+00	1.21E+00	1.12E+00	2.76E+00	4.81E+00	4.13E+00	4.61E+00	27	41,000
4-Methyl-2-Pentanone*										480	48,000
Styrene										1,000	20,000
1,1,2,2-Tetrachloroethane										0.02	1,600
Tetrachloroethene	<	8.33E+01	5.78E+00	2.43E+00	1.43E+00	6.14E-01	1.12E+00	5.16E+00	6.97E+01	1.2	40,000
Toluene		9.96E-01	7.09E-01	7.09E-01	7.09E-01	9.21E-01	2.04E+00	6.19E-01		400	45,000
1,1,1-Trichloroethane	<	1.45E+01	6.04E-01	1.52E+00						1,000	450,000
1,1,2-Trichloroethane										0.06	13,000
Trichloroethene	<	9.07E+00								0.45	33,000
Trichlorofluoromethane	<	5.68E+00	1.89E+00	1.11E+00	1.33E+00	7.16E-01	1.02E-00	9.29E-01	2.05E+00	700	560,000
Vinyl Chloride										0.02	1,300
Xylenes (Total)		8.96E-01		2.73E+00			1.33E-00			300	100,000

TABLE 4.2

TOWN OF OYSTER BAY

OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

2001 Fourth Quarter

SOIL GAS WELL ID	F1	M2	M4	M5	M6	M9(10)	M9(20)	M9(30)	M9(40)	Current AGC	Current SGC
LOWER QUANTIFICATION LIMIT (LQL)	0.521	0.522	0.521	0.524	0.522	0.522	0.522	1.045	0.530	---	---
PRACTICAL QUANTIFICATION LIMIT (PQL)	0.833	0.835	0.834	0.839	0.836	0.835	0.836	1.672	0.85	---	---
TARGETED TIC LQL	2.60	2.61	2.61	2.62	2.61	2.61	2.61	5.22	2.65	---	---
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m3)	(ug/m3)
Acetone*	1.35E+00	1.25E+00	1.67E+00	3.77E+00	1.88E+00			< 2.09E+00		14,000	140,000
Benzaldehyde**										0.12	32
<b>Benzene</b>				<b>6.29E-01</b>						0.02	---
Bromochloromethane										0.9	1,200
Bromoform*										5	4,500
Bromomethane						6.26E-01				300	140,000
2-Butanone*	1.88E+00									10	710
Carbon Disulfide						6.26E-01		< 5.02E+00	1.06E+00	20	11,000
<b>Carbon Tetrachloride</b>		<b>5.22E-01</b>								13,000	63,000
Chlorobenzene										0.04	980
Chloroethyl Vinyl Ether**										770	22,000
<b>Chloroform</b>	<b>1.04E+00</b>		<b>5.21E-01</b>	<b>6.29E-01</b>		<b>6.26E-01</b>	<b>7.31E-01</b>		<b>6.36E-01</b>	0.1	---
Chloromethane										200	36,000
Dibromochloromethane										200	36,000
1,2-Dichlorobenzene (o)										700	14,000
1,3-Dichlorobenzene (m)										500	96,000
1,4-Dichlorobenzene (p)								< 1.15E+00	9.54E-01	0.039	950
1,1-Dichloroethane								< 1.88E+00		0.02	2,000
<b>1,2-Dichloroethane</b>										1,900	190,000
1,1-Dichloroethene										360	---
cis-1,2-Dichloroethene								< 1.25E+00	1.59E+00	0.15	83,000
trans-1,2-Dichloroethene										20	1,100
1,2-Dichloropropane										1,000	100,000
1,3-Dichloropropene, cis & trans isomers										0.1	---
Ethylbenzene										700	560,000
<b>2/4-Ethyltoluene (total)</b>			<b>5.21E-01</b>							9.5	950
Freon 13**										480	48,000
2-Hexanone*										1,000	20,000
Methylene Chloride	1.98E+00	2.19E+00	1.46E+00	2.10E+00	1.25E+00	2.71E+00	1.78E+00	3.03E+00	1.59E+00	27	41,000
4-Methyl-2-Pentanone*										400	45,000
Styrene										0.02	1,600
<b>1,1,2,2-Tetrachloroethane</b>	<b>8.33E-01</b>									1.2	40,000
<b>Tetrachloroethene</b>	<b>1.88E+01</b>	<b>1.77E+00</b>	<b>2.82E+00</b>	<b>2.73E+00</b>	<b>1.67E+00</b>	<b>3.97E+01</b>	<b>1.04E+02</b>	<b>&lt; 1.57E+02</b>	<b>1.59E+02</b>	400	45,000
Toluene	6.25E-01			9.43E-01						1,000	20,000
1,1,1-Trichloroethane								< 1.10E+01	2.23E-01	0.06	13,000
1,1,2-Trichloroethane										0.45	33,000
<b>Trichloroethene</b>	<b>6.25E-01</b>							<b>&lt; 1.67E+00</b>	<b>3.39E+00</b>	700	560,000
Trichlorofluoromethane	3.13E+00	1.36E+00	1.46E+00	1.68E-00	1.57E-00	6.16E+00	8.15E-00	1.34E-01	2.12E+01	0.02	1,300
Vinyl Chloride										300	100,000
Xylenes (Total)											

TABLE 4.2  
(Continued)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS

2001 Fourth Quarter

SOIL GAS WELL ID	F1	M2	M4	M5	M6	M9(10)	M9(20)	M9(30)	M9(40)	Current AGC	Current SGC
ADDITIONAL TIC LQL	2.60	2.61	2.61	2.62	2.61	2.61	2.61	5.22	2.65	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Branched Alkane RT: 5.85-13.52	2.60E+00									830	830000
<b>Dimethyldisulfide</b>					<b>1.25E+01</b>					1	14
Hexane						5.95E+00				240	42,000
Dichlorodifluoromethane						9.39E+00	2.61E+01	4.61E+01	7.64E+01	200	1,200,000
1,1-dichloro-1-fluoroethane	5.52E+00										
Dichlorotetrafluoroethane						6.78E+00	2.09E+01	4.34E+01	8.48E+01	17,000	1,700,000
Ethane, 1,1,2-trichloro-1,2,2-trifluoro						7.52E+00	2.19E+01	2.87E+01	8.91E+01		



TABLE 4.2  
(Continued)

TOWN OF OYSTER BAY

OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

2001 Fourth Quarter

SOIL GAS WELL ID	M13	M16	M21	M22	M28	M31	M34	M37	M39	Current AGC	Current SGC
LOWER QUANTIFICATION LIMIT (LOL)	0.483	0.980	0.523	0.485	0.485	0.480	0.477	0.483	0.476	---	---
PRACTICAL QUANTIFICATION LIMIT (PQL)	0.772	1.569	0.837	0.776	0.776	0.77	0.763	0.772	0.761	---	---
TARGETED TIC LOL	2.41	4.90	2.62	2.42	2.42	2.40	2.39	2.41	2.38	---	---
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Acetone*	<	3.82E+00	4.39E+00		1.55E+00	1.34E+00	2.19E+00	4.25E+00	2.66E+00	14.000	140.000
Benzaldehyde**											
Benzene							6.68E-01	7.72E-01		0.12	32
Bromodichloromethane										0.02	---
Bromoform*										0.9	1,200
Bromomethane										5	4,500
2-Buonone*										300	140,000
Carbon Disulfide			9.41E-01							10	710
Carbon Tetrachloride				4.85E-01				4.83E-01		0.07	1,300
Chlorobenzene										20	11,000
Chloroethane										13,000	63,000
Chloroethyl Vinyl Ether**											
Chloroform	2.90E+00	< 3.33E+00	4.50E+00		2.23E+00	7.68E-01		1.35E+00		0.04	980
Chloromethane										770	22,000
Dibromochloromethane										0.1	---
1,2-Dichlorobenzene (o)										200	36,000
1,3-Dichlorobenzene (m)										200	36,000
1,4-Dichlorobenzene (p)										700	14,000
1,1-Dichloroethane	3.19E+00									500	96,000
1,2-Dichloroethane										0.039	950
1,1,1-Dichloroethane										0.02	2,000
cis-1,2-Dichloroethane	4.83E-01									1,900	190,000
trans-1,2-Dichloroethane	6.76E-01									360	---
1,2-Dichloropropane										0.15	85,000
1,3-Dichloropropane, cis & trans isomers										20	1,100
Ethylbenzene										1,000	100,000
2/4-Ethyltoluene (total)										0.1	---
Freon 13**										700	360,000
2-Hexanone*										9.5	950
Methylene Chloride	1.16E-00	7.94E-00	5.54E-00	4.75E-00	5.82E-00	5.18E+00	4.01E-00	3.86E+00	2.19E+00	27	41,000
4-Methyl-2-Pentanone*										480	48,000
Styrene										1,000	20,000
1,1,2,2-Tetrachloroethane										0.02	1,600
Tetrachloroethene	7.05E-01	< 3.82E+00	5.65E-00	2.62E+00	1.56E+00	1.06E-00	8.59E-01	1.93E+00	6.37E+01	1.2	40,000
Toluene				6.79E-01	4.85E-01	4.80E-01	1.24E+00	2.03E+00		400	45,000
1,1,1-Trichloroethane	9.46E-00		5.23E-01	5.82E-01						1,05E+00	450,000
1,1,2-Trichloroethane										0.06	13,000
Trichloroethene	6.18E+00									8.56E-01	33,000
Trichlorofluoromethane	4.73E-00	2.33E+01	1.78E-00	1.45E-00	1.36E-00	1.15E-00	1.43E-00	1.16E+00	2.47E+00	700	560,000
Vinyl Chloride										0.02	1,300
Xylenes (Total)										300	1,000,000

TABLE 4.2  
(Concluded)

TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS

ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS

2001 Fourth Quarter

SOIL GAS WELL ID	M13 (ug/std-m <sup>3</sup> )	M16 (ug/std-m <sup>3</sup> )	M21 (ug/std-m <sup>3</sup> )	M22 (ug/std-m <sup>3</sup> )	M28 (ug/std-m <sup>3</sup> )	M31 (ug/std-m <sup>3</sup> )	M34 (ug/std-m <sup>3</sup> )	M37 (ug/std-m <sup>3</sup> )	M39 (ug/std-m <sup>3</sup> )	Current AGC (ug/m <sup>3</sup> )	Current SGC (ug/m <sup>3</sup> )
ADDITIONAL TIC LQL	2.41	4.90	2.62	2.42	2.42	2.40	2.39	2.41	2.38		
VOC COMPOUND NAME	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/std-m <sup>3</sup> )	(ug/m <sup>3</sup> )	(ug/m <sup>3</sup> )
Undecane			4.71E+01						3.71E+00		
1r-alpha-pinene								5.02E+01			
Straight Chain Alcane			3.56E+00	2.62E+00						830	83,000
<b>Decane</b>			<b>1.99E+01</b>							0.10	0
Unknown RT: 4.12-14.18				5.43E+00							
Dichlorodifluoromethane		8.43E+00									
1,1-dichloro,1-fluoroethane											
beta-myrcene											
Nonanal			3.87E+00								
Tetradecane				6.40E+00							
Napthalene, methyl isomer RT: 13.57-14.26				1.27E+01							
Dichlorotetrafluoroethane										120	12,000
bicyclic compound unknown										17,000	1,700,000
d-limonene										210	

NOTES:

- \* An 8 nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.
- \*\* Targeted Tentatively Identified Compound (TIC). As reported by the laboratory. Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.
- All values are reported in micrograms per standard cubic meter (ug/std-m<sup>3</sup>).
- Blank values:
- Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit. Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Benzaldehyde, Chloroethyl Vinyl Ether and Freon 13).
- Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where less than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample.
- Values in shaded areas are at or exceed the level of the current (last revised October 16, 1995 and still current as of January 2000) and/or previous ambient air Annual Guideline Concentration (AGC) values.
- Less than values (<) are used where the Lower Quantitation Limit, the Target TIC Lower Quantitation Limit, or the Practical Quantitation Limit is averaged with the reported values.
- Freon 13 is listed as Chlorotrifluoromethane in the Analytical Results, Appendix C.
- (ug/std-m<sup>3</sup>): micrograms per standard cubic meter
- (ng): nanograms

**APPENDIX C**

**TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX  
EVALUATION OF VOLATILE ORGANIC COMPOUNDS IN  
AMBIENT AIR AND SOILS AND SOIL GAS PRESSURE READINGS**

**2001 ANNUAL SUMMARY REPORT**

**2001 QUARTERLY SOIL GAS PRESSURE DATA**

**TABLE 5.1**

**TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX**

**SUMMARY OF SOIL GAS PRESSURE TESTS**

**2001 First Quarter**

SAMPLE ID	DATE (m/d/yr)	TIME (EDT)	WELL ID	WELL LOCATION	WELL DEPTH (feet)	READINGS (INCHES H <sub>2</sub> O)
P1	3/23/01	1152	PW1	NW corner of the landfill on Haul Road	10	-0.05
P2	3/23/01	1152	PW1	NW corner of the landfill on Haul Road	20	-0.03
P3	3/23/01	1153	PW1	NW corner of the landfill on Haul Road	10	-0.05
P4	3/23/01	1153	PW1	NW corner of the landfill on Haul Road	20	-0.03
P5	3/23/01	1200	PW2	SE corner of the landfill NW of Well M2	10	0.00
P6	3/23/01	1200	PW2	SE corner of the landfill NW of Well M2	20	-0.14
P7	3/23/01	1201	PW2	SE corner of the landfill NW of Well M2	10	0.00
P8	3/23/01	1201	PW2	SE corner of the landfill NW of Well M2	20	-0.11
P9	3/23/01	1212	PW3	Fireman's Training Center	10	-0.02
P10	3/23/01	1212	PW3	Fireman's Training Center	20	-0.03
P11	3/23/01	1213	PW3	Fireman's Training Center	10	0.00
P12	3/23/01	1213	PW3	Fireman's Training Center	20	-0.02

NOTES:

- Measurements taken using a ten inch Dwyer inclined manometer.
- Leak checks were performed on manometer before testing each well.
- Data measurements were taken on March 23, 2001 between 1152 am - 1213 pm.

**TABLE 5.1**

**TOWN OF OYSTER BAY  
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX**

**SUMMARY OF SOIL GAS PRESSURE TESTS**

**2001 Second Quarter**

SAMPLE ID	DATE (m/d/yr)	TIME (EDT)	WELL ID	WELL LOCATION	WELL DEPTH (feet)	READINGS (INCHES H <sub>2</sub> O)
P1	5/20/01	1604	PW1	NW corner of the landfill on Haul Road	10	-0.06
P2	5/20/01	1604	PW1	NW corner of the landfill on Haul Road	20	-0.10
P3	5/20/01	1605	PW1	NW corner of the landfill on Haul Road	10	-0.06
P4	5/20/01	1605	PW1	NW corner of the landfill on Haul Road	20	-0.10
P5	5/20/01	1557	PW2	SE corner of the landfill NW of Well M2	10	0.00
P6	5/20/01	1557	PW2	SE corner of the landfill NW of Well M2	20	-0.15
P7	5/20/01	1558	PW2	SE corner of the landfill NW of Well M2	10	0.00
P8	5/20/01	1558	PW2	SE corner of the landfill NW of Well M2	20	-0.15
P9	5/21/01	0830	PW3	Fireman's Training Center	10	0.06
P10	5/21/01	0830	PW3	Fireman's Training Center	20	0
P11	5/21/01	0831	PW3	Fireman's Training Center	10	0.06
P12	5/21/01	0831	PW3	Fireman's Training Center	20	0

**NOTES:**

- Measurements taken using a ten inch Dwyer inclined manometer.
- Leak checks were performed on manometer before testing each well.
- Data measurements were taken on May 20, 2001 between 3:57 pm - 4:05 pm and on May 21, 2001 between 8:30 am - 8:31 am.

TABLE 5.1

TOWN OF OYSTER BAY  
 OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SUMMARY OF SOIL GAS PRESSURE TESTS

2001 Third Quarter

SAMPLE ID	DATE (m/d/yr)	TIME (EDT)	WELL ID	WELL LOCATION	WELL DEPTH (feet)	READINGS (INCHES H <sub>2</sub> O)
P1	8/6/01	1142	PW1	NW corner of the landfill on Haul Road	10	0.00
P2	8/6/01	1142	PW1	NW corner of the landfill on Haul Road	20	0.01
P3	8/6/01	1143	PW1	NW corner of the landfill on Haul Road	10	0.00
P4	8/6/01	1143	PW1	NW corner of the landfill on Haul Road	20	0.01
P5	8/6/01	1149	PW2	SE corner of the landfill NW of Well M2	10	0.00
P6	8/6/01	1149	PW2	SE corner of the landfill NW of Well M2	20	0.01
P7	8/6/01	1150	PW2	SE corner of the landfill NW of Well M2	10	0.00
P8	8/6/01	1150	PW2	SE corner of the landfill NW of Well M2	20	0.01
P9	8/6/01	1200	PW3	Fireman's Training Center	10	0.00
P10	8/6/01	1200	PW3	Fireman's Training Center	20	0.01
P11	8/6/01	1201	PW3	Fireman's Training Center	10	0.00
P12	8/6/01	1201	PW3	Fireman's Training Center	20	0.01

NOTES:

- Measurements taken using a ten inch Dwyer inclined manometer.
- Leak checks were performed on the manometer before testing each well.
- Data measurements were taken on August 6, 2001 between 1142 am - 1201 pm.

TABLE 5.1

TOWN OF OYSTER BAY  
 OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SUMMARY OF SOIL GAS PRESSURE TESTS

2001 Fourth Quarter

SAMPLE ID	DATE (m/d/yr)	TIME (EDT)	WELL ID	WELL LOCATION	WELL DEPTH (feet)	READINGS (INCHES H <sub>2</sub> O)
P1	9/27/01	0810	PW1	NW corner of the landfill on Haul Road	10	-0.03
P2	9/27/01	0810	PW1	NW corner of the landfill on Haul Road	20	-0.03
P3	9/27/01	0811	PW1	NW corner of the landfill on Haul Road	10	-0.03
P4	9/27/01	0811	PW1	NW corner of the landfill on Haul Road	20	-0.02
P5	9/27/01	0800	PW2	SE corner of the landfill NW of Well M2	10	0.00
P6	9/27/01	0800	PW2	SE corner of the landfill NW of Well M2	20	-0.03
P7	9/27/01	0801	PW2	SE corner of the landfill NW of Well M2	10	0.00
P8	9/27/01	0801	PW2	SE corner of the landfill NW of Well M2	20	-0.03
P9	9/27/01	0744	PW3	Fireman's Training Center	10	0.00
P10	9/27/01	0744	PW3	Fireman's Training Center	20	-0.05
P11	9/27/01	0745	PW3	Fireman's Training Center	10	0.00
P12	9/27/01	0745	PW3	Fireman's Training Center	20	-0.05

NOTES:

- Measurements taken using a ten inch Dwyer inclined manometer.
- Leak checks were performed on manometer before testing each well.
- Data measurements were taken on September 27, 2001 between 0744 am - 0811 am.

**APPENDIX C**

**ANNUAL SUMMARY  
OLD BETHPAGE LANDFILL  
QUARTERLY GROUNDWATER MONITORING PROGRAM  
JANUARY THROUGH DECEMBER 2001**

**Gannett Fleming Engineers and Architects, P.C.  
January 2002**



OLD BETHPAGE LANDFILL  
BETHPAGE, NEW YORK

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ANNUAL SUMMARY  
OLD BETHPAGE LANDFILL  
QUARTERLY GROUNDWATER  
MONITORING PROGRAM  
JANUARY THROUGH DECEMBER 2001

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PROJECT #37458  
JANUARY 2002

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*Office Location:*

GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C.  
480 Forest Avenue  
Locust Valley, New York 11560

*Office Contact:*

James M. Barish, CPG  
(516) 671-8440

Locations Nationwide

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## 1.0 INTRODUCTION

This report summarizes the quarterly groundwater monitoring database established during the period January 2001 through December 2001 at the Old Bethpage Solid Waste Disposal Complex (OBSWDC). The 2001 monitoring period covers the ninth year of operation of the Old Bethpage Landfill Groundwater Treatment Facility (GTF). Quarterly groundwater monitoring was performed in accordance with the requirements of the Remedial Action Plan (RAP) in Appendix I of the 1988 Record of Decision issued by the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA).

The OBSWDC groundwater remediation system began operating on April 1, 1992. Geraghty & Miller initiated monthly hydraulic monitoring approximately 30 days after system start-up, with the frequency reduced to quarterly beginning with the October 1993 round. The 2001 sampling program consisted of four synoptic rounds of water level measurements to assess the effectiveness of the hydraulic control created by the recovery well network, and four rounds of groundwater sampling at 16 monitoring wells to track changes in groundwater quality over time. At the request of Lockwood, Kessler and Bartlett (LKB), monitoring well MW-9D was also sampled during the third quarter sampling round. Well MW-9D was previously sampled during the third quarter of 2000.

## 2.0 WATER LEVEL MEASUREMENTS AND MAPPING

A synoptic round of water level measurements was taken in monitoring and recovery wells by Gannett Fleming at the start of each monitoring event. The depth to water and water level elevation data are summarized in Table 1 in Tabs A through D. These data were used to create the water table, shallow potentiometric, and deep potentiometric zone groundwater flow maps shown on Figures 1, 2 and 3 in Tabs A through D. Each map shows the water level elevation contours, limiting flow lines, and the approximate areal extent of the volatile organic compound (VOC) plume.

An audit of the sampling program was performed during the fourth quarter monitoring round, which indicated that the identifications for upgradient wells M-29A-R and -30B-R and wells M-29B and -30A had been transposed. Based on a review of historical field notes and water level elevation data, the well identifications were initially transposed during the fourth quarter 1998 sampling round. Three wells have historically been used to characterize upgradient water quality since the monitoring program began: LF-4, M-30B (now M-30B-R) and M-29A (now M-29A-R). The wells are in close proximity and the well screens are set at similar depths. A review of the established water quality database does not indicate any significant difference between the LF-4, M-30B and M-29A data. As a result, the well designation error has not compromised the validity or usefulness of the upgradient water quality database. The main consequence of this error is that, since the fourth quarter of 1998, well M-30B-R was sampled instead of well M-29A-R but the results were still reported as being from well M-29A-R. At the request of Lockwood, Kessler & Barttlet, well M-30B-R will continue to be sampled during subsequent monitoring rounds to characterize upgradient conditions, as the Consent Decree does not specify which recharge basin well must be sampled. For the purposes of this report, the water level elevation and sample references have been revised to reflect the correct well identifications.



Excluding well MW-9A, which was dry at the time the water level measurements were taken, water level elevations in the monitoring wells decreased an average of 1.12 feet during the monitoring period. Recovery wells RW-1 and RW-3 were the only recovery wells operating during the first and fourth quarter monitoring rounds. Based on the RW-1 and RW-3 data, water level elevations at the recovery wells increased an average of 0.57 feet. There was limited recovery well downtime during the 2001 monitoring period due to repairs and power outages, but the system pumpage was sufficient to control the VOC plume. The annual pumpage data are summarized in Table 2 in Tabs A through D.

Groundwater flow at the water table and in the shallow and deep potentiometric zones is southeasterly, except in the capture zone area where the shallow and deep potentiometric groundwater flows toward the recovery wells. The GTF effluent is discharged to Recharge Basin #1, which causes localized water table mounding beneath the basin. The mounding has not affected the overall hydraulic gradient or flow direction over the study area.

### 3.0 GROUNDWATER SAMPLING AND CONTAMINANT DISTRIBUTION

Gannett Fleming sampled monitoring wells M-30B-R, MW-5B, MW-6A, MW-6B, MW-6C, MW-6E, MW-6F, MW-7B, MW-8A, MW-8B, MW-9B, MW-9C, MW-11A, MW-11B, OBS-1 and LF-1 in February, May, July and October 2001 in accordance with the *Protocols for Sampling Groundwater Under the Old Bethpage Solid Waste Disposal Complex Remedial Action Plan* prepared by Geraghty & Miller. Field blanks, field duplicates, and trip blanks prepared by the laboratory were also analyzed for quality assurance/quality control purposes. All samples were analyzed by H<sub>2</sub>M Laboratories. The quarterly analytical results are summarized in Tables 3, 4, 5 and 6 in Tabs A through D. Raw laboratory data and well sampling logs are included in the following quarterly reports prepared by Gannett Fleming: First Quarter 2001 Results - January through March 2001, Second Quarter 2001 Results - April through June 2001, Third Quarter 2001 Results - July through October 2001, and Fourth Quarter 2001 Results -October through December 2001.

Dedicated submersible pumps, a two-inch Grundfos pump or a dedicated bailer were used to purge and sample the monitoring wells. All non-dedicated down well equipment was cleaned each day before use and after sampling each well by washing with laboratory grade detergent and rinsing with potable water to minimize the possibility of cross contamination.

Recovery well analytical data provided by the Town of Oyster Bay Department of Public Works are summarized in Table 7 in Tabs A, B and D and Table 9 in Tab C. The combined monitoring well and recovery well database was used to create the plume maps shown on Figures 3 through 6 in Tabs A through D.

### 3.1 Volatile Organic Compound Plume

The VOC group is divided into three components: volatile halogenated hydrocarbons (VHOs) excluding tetrachloroethene, volatile aromatic hydrocarbons, and tetrachloroethene. Changes in chemical constituent concentrations between the first and fourth quarter sampling rounds are discussed below.

#### 3.1.1 Volatile Halogenated Compounds

Eleven VHO compounds were detected during the 2001 monitoring period. The location and monitoring round during which the highest concentration of each compound was found is listed below.

<u>Compound</u>	<u>Concentration (ppb)</u>	<u>Quarter</u>	<u>Location</u>
1,1-Dichloroethane	9.6	Third	MW-9D
1,2-Dichloroethane	0.5	Third	MW-9D
1,1,1-Trichloroethane	1.1	Third	MW-9D
2-Chloroethylvinyl ether	3.1	Third	OBS-1
Chloroethane	9.7	Third	MW-9D
cis-1,2-Dichloroethene	8.6	Second	OBS-1
Dichlorodifluoromethane	14	Third	MW-9D
Methylene chloride*	0.6	Third	MW-9D
Trichloroethene	25	Second	MW-7B
Trichlorofluoromethane	1.6	Third	MW-9D
Vinyl chloride	4.1	Third	MW-9D

\* Probable laboratory artifact

Total VHO concentrations decreased at monitoring wells MW-8A (1.4 to 0.5 ppb), MW-9D (64 to 50 ppb [compared to third quarter of 2000]), and OBS-1 (7.8 to 1.9 ppb) and increased at MW-7B (22.1 to 24 ppb). VHO concentrations remained at less than the laboratory reporting limit at wells M-30B-R, MW-5B, -6A, -6B, -6C, -6E, -6F, -8B, -9B,-9C, -11A, and -11B during the first and

fourth quarter sampling rounds. Figure 4 in Tabs A through D shows the distribution of VHOs during the 2001 monitoring period.

### 3.1.2 Aromatic Hydrocarbons

Five aromatic hydrocarbons were detected during the 2001 monitoring period. The location and monitoring round during which the highest concentration of each compound was found is listed below.

<u>Compound</u>	<u>Concentration (ppb)</u>	<u>Quarter</u>	<u>Location</u>
Benzene	25	Second	OBS-1
Chlorobenzene	11	Second	MW-6B
p-dichlorobenzene	4.4	Third	MW-6C
o-dichlorobenzene	1.7	Second	MW-6B
o-xylene	9.9	Third	MW-9D

Aromatic hydrocarbon concentrations decreased at wells MW-6B (18.3 to 11.8 ppb), MW-6C (9.5 to 7.7 ppb), MW-9D (28 to 26.8 ppb [compared to third quarter 2000]) and OBS-1 (13.37 to 2.8 ppb). Aromatic hydrocarbons concentrations remained at less than the laboratory reporting limit at wells M-30B-R, MW-5B, -6A, -6E, -6F, -7B, -8A, -8B, -9B, -9C, -11A, and -11B during the first and fourth quarter sampling rounds. Figure 5 in Tabs A through D shows the distribution of aromatic hydrocarbons during the 2001 monitoring period.

### 3.1.3 Tetrachloroethene

The location and monitoring round during which the highest concentration of tetrachloroethene (PCE) was found is listed below.

<u>Compound</u>	<u>Concentration (ppb)</u>	<u>Quarter</u>	<u>Location</u>
PCE	250	Second	MW-7B

PCE concentrations decreased at monitoring wells MW-7B (170 to 120 ppb), MW-8A (20 to 13 ppb), MW-8B (0.5 ppb to non-detect), MW-9D (3 to 2.3 ppb [compared to third quarter 2000]), and OBS-1 (3.7 to 1.4 ppb). PCE was not found at a concentration exceeding the laboratory reporting limit in the samples from M-30B-R, MW-5B, -6A, -6B, -6C, -6E, -6F, -9B, -9C, -11A, and -11B, during the first and fourth quarter sampling rounds. Figure 6 in Tabs A through D shows the distribution of tetrachloroethene during the 2001 monitoring period.

### **3.2 Inorganic Compound Plume**

The 2001 inorganic compound data do not indicate significant change in the extent and concentration of leachate parameters over time. The highest leachate parameter concentrations were found in the samples from wells MW-6B, MW-6C, and MW-8B.

#### 4.0 FINDINGS AND CONCLUSIONS

1. The average system pumpage in 2001 was sufficient to control the VOC plume.
2. Localized water table mounding beneath Recharge Basin #1 was caused by the discharge of the GTF effluent to the basin.
3. Total VHO concentrations decreased at monitoring wells MW-8A, MW-9D (compared to third quarter of 2000), and OBS-1, and increased at MW-7B. VHO concentrations remained at less than the laboratory reporting limit at wells M-30B-R, MW-5B, -6A, -6B, -6C, -6E, -6F, -8B, -9B, -9C, -11A, and -11B during the first and fourth quarter sampling rounds.
4. Aromatic hydrocarbon concentrations decreased at wells MW-6B, MW-6C, MW-9D (compared to third quarter 2000), and OBS-1. Aromatic hydrocarbons concentrations remained at less than the laboratory reporting limit at wells M-30B-R, MW-5B, -6A, -6E, -6F, -7B, -8A, -8B, -9B, -9C, -11A, and -11B during the first and fourth quarter sampling rounds.
5. Tetrachloroethene concentrations decreased at monitoring wells MW-7B, MW-8A, MW-8B, MW-9D (compared to third quarter 2000), and OBS-1. Tetrachloroethene was not found at a concentration exceeding the laboratory reporting limit in the samples from M-30B-R, MW-5B, -6A, -6B, -6C, -6E, -6F, -9B, -9C, -11A, and -11B during the first and fourth quarter sampling rounds.
6. The distribution and concentration of inorganic compounds were consistent between the first and fourth quarter 2001 sampling rounds.

7. VHOs at low concentrations were sporadically detected at well MW-6C during the monitoring period. The highest total VHO concentrations did not exceed 5 ppb.
  
8. VHOs were not detected at concentrations exceeding the laboratory detection limits at well MW-11A during the 2001 monitoring period. VHOs were last detected at this well during the third quarter 2000 sampling round.

## **5.0 RECOMMENDATIONS**

1. Continue the quarterly groundwater monitoring program to track changes in water quality conditions over time and to assess the groundwater remediation system effectiveness.
2. Continue to evaluate trends in water levels and assess the need to replace monitoring wells which may become dry because the water table declined below the well screens, and reinstall pumps at greater depths because the water table declined below the pump intake.
3. Continue to evaluate VHO concentration trends at wells MW-6C and MW-11A during subsequent monitoring events.



**TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK**

**TABLE 1**

**WATER LEVEL MEASUREMENTS - FEBRUARY 12, 2001**

<b>WELL NUMBER</b>	<b>M.P. ELEVATION (feet above mean sea level)</b>	<b>DEPTH TO WATER FROM M.P. (feet):</b>	<b>G.W. ELEVATION (feet above mean sea level)</b>
5A	137.13	75.56	61.57
5B	138.43	75.62	62.81
6A	160.24	98.92	61.32
6B	160.39	99.32	61.07
6C	159.99	98.84	61.15
6D	160.39	99.09	61.30
6E	160.88	99.59	61.29
6F	159.88	99.10	60.78
7A	148.44	90.05	58.39
7B	147.94	90.79	57.15
8A	134.94	73.44	61.50
8B	134.24	72.42	61.82
8C	135.72	73.08	62.64
9A	153.35	Dry	Not Available
9B	153.28	94.85	58.43
9C	153.53	95.62	57.91
9D	152.95	95.08	57.87
10A	161.28	99.58	61.70
10B	161.12	99.74	61.38
10C	160.27	98.85	61.42
10D	161.17	99.80	61.37
11A	80.19	26.36	53.83
11B	79.91	27.96	51.95
M-29A-R	157.50	92.48	65.02
M-29B	157.41	90.63	66.78
M-30A	151.20	84.85	66.35
M-30B-R	154.51	88.46	66.05
N-9980 (N-9936)	80.46	33.01	47.45
N-9880	Not Available	Not Available	Not Available
TW-3-R	133.93	71.38	62.55
EW-1A	130.09	67.38	62.71
EW-1B	130.65	67.92	62.73
EW-1C	130.60	67.70	62.90
EW-2A	157.14	95.48	61.66
EW-2B	157.61	95.12	62.49
EW-2C	157.54	95.18	62.36
EW-3A	159.24	98.57	60.67
EW-3B	159.36	98.68	60.68
EW-3C	159.25	98.40	60.85
LF-1	111.40	48.74	62.66
LF-2	118.70	55.67	63.03
LF-3	126.50	59.89	66.61
LF-4	149.93	83.45	66.48
OBS-1	110.61	52.98	57.63
OBS-2	105.26	48.65	56.61
RW-1 (1)	110.94	62.50	48.44
RW-2	145.31	87.26	58.05
RW-3 (1)	120.92	78.20	42.72
RW-4	144.82	86.14	58.68
RW-5	149.74	89.42	60.32
TW-1	121.12	54.72	66.40
TW-2	117.52	54.44	63.08
Farmingdale 1-3	77.3	NA	NA
Farmingdale 2-2	104.2	NA	NA
Farmingdale 2-3	113.2	NA	NA

Note:

(1) - Pumping level

NA - Not available at time of report submittal

**TOWN OF OYSTER BAY  
 OLD BETHPAGE LANDFILL  
 OLD BETHPAGE, NEW YORK**

**TABLE 2**

**GROUNDWATER REMEDIATION SYSTEM PUMPAGE RECORDS**

**JANUARY THROUGH MARCH 2001**

<b>DATE</b>	<b>ESTIMATED AVERAGE SYSTEM FLOW (GPM)</b>	<b>COMMENTS</b>
January 1	0	GTF off-line for town holiday.
January 2 - January 4	887	RW-5 off-line for repairs.
January 15	746	GTF off-line 3 hrs. RW-2,3,and 4 off-line 1 hr. RW-5 offline for 21 hrs.
January 16	323	GTF off-line for 11 hrs. Rw-5 offline for 6 Hrs. RW-2,3,and 4 off-line for 7 hrs.
January 17	581	RW-2 and RW-5 off-line. Rw-3 off-line for 11 hrs. RW-4 offline for 16 hrs.
January 18 - February 1	542	RW-2,4 and 5 off-line
February 2	397	GTF off-line for 6 hrs. RW-2,4 and 5 off-line for 16 hrs.
February 3 - March 22	545	RW-2,4 and 5 off-line
March 23	390	RW-1 off-line for 10 hrs. RW-2,4 and 5 off-line.
March 24 - March 31	514	RW-2, 4 and 5 off-line

**TOWN OF OYSTER BAY OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK**

**TABLE 3**

**GROUNDWATER ANALYTICAL SAMPLING RESULTS- VOLATILE ORGANIC COMPOUNDS  
FIRST QUARTER SAMPLING ROUND - FEBRUARY 2001**

SAMPLE ID:  PARAMETERS (Units- $\mu\text{g/l}$ )	M-30B-R	MW-5B	MW-6A	MW-6B	MW-6C
<b>TOTAL VOCs</b>	0	0	0	18.26	9.5
<b>AROMATIC HYDROCARBONS</b>					
1,2-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	0.95	1.1
1,3-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	2.8	3.9
BENZENE	< 0.5	< 0.5	< 0.5	4.7	1.7
CHLOROBENZENE	< 0.5	< 0.5	< 0.5	9.2	2.8
ETHYLBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
M/P-XYLENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
O-XYLENE	< 0.5	< 0.5	< 0.5	0.61	< 0.5
TOLUENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
<b>VOLATILE HALOGENATED HYDROCARBONS</b>					
1,1,1-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-TETRACHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-DICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-DICHLOROPROPANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-CHLOROETHYL VINYL ETHER	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMODICHLOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMOFORM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMOMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CARBON TETRACHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLORODIBROMOMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROFORM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CIS-1,2-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CIS-1,3-DICHLOROPROPENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
DICHLORODIFLUOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
METHYLENE CHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRANS-1,2-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRANS-1,3-DICHLOROPROPENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRICHLOROFLUOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
VINYL CHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
<b>TETRACHLOROETHENE</b>					
TETRACHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

**TOWN OF OYSTER BAY OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK**

**TABLE 3**

**GROUNDWATER ANALYTICAL SAMPLING RESULTS- VOLATILE ORGANIC COMPOUNDS  
FIRST QUARTER SAMPLING ROUND - FEBRUARY 2001**

SAMPLE ID:  PARAMETERS (Units- ug/l)	MW-6F	MW-7B	MW-8A	MW-8B	MW-9B
<b>TOTAL VOCs</b>	0	192.1	21.4	0.53	0
<b>AROMATIC HYDROCARBONS</b>					
1,2-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
M/P-XYLENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
O-XYLENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TOLUENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
<b>VOLATILE HALOGENATED HYDROCARBONS</b>					
1,1,1-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-TETRACHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-DICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-DICHLOROPROPANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-CHLOROETHYL VINYL ETHER	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMODICHLOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMOFORM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMOMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CARBON TETRACHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLORODIBROMOMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROFORM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CIS-1,2-DICHLOROETHENE	< 0.5	2.1	< 0.5	< 0.5	< 0.5
CIS-1,3-DICHLOROPROPENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
DICHLORODIFLUOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
METHYLENE CHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRANS-1,2-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRANS-1,3-DICHLOROPROPENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRICHLOROETHENE	< 0.5	20	1.4	< 0.5	< 0.5
TRICHLOROFLUOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
VINYL CHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
<b>TETRACHLOROETHENE</b>					
TETRACHLOROETHENE	< 0.5	170	20	0.53	< 0.5

TOWN OF OYSTER BAY OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK

TABLE 3

GROUNDWATER ANALYTICAL SAMPLING RESULTS- VOLATILE ORGANIC COMPOUNDS  
FIRST QUARTER SAMPLING ROUND - FEBRUARY 2001

SAMPLE ID:  PARAMETERS (Units- ug/l)	MW-9B DUPLICATE	MW-9C	MW-11A	MW-11B	OBS-1
<b>TOTAL VOCs</b>	0	0	0	0	24.86
<b>AROMATIC HYDROCARBONS</b>					
1,2-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	0.54
1,3-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	1.1
BENZENE	< 0.5	< 0.5	< 0.5	< 0.5	11
CHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	0.73
ETHYLBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
M/P-XYLENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
O-XYLENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TOLUENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
<b>VOLATILE HALOGENATED HYDROCARBONS</b>					
1,1,1-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-TETRACHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-DICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-DICHLOROPROPANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-CHLOROETHYL VINYL ETHER	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMODICHLOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMOFORM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMOMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CARBON TETRACHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLORODIBROMOMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROFORM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CIS-1,2-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	7.1
CIS-1,3-DICHLOROPROPENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
DICHLORODIFLUOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
METHYLENE CHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRANS-1,2-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRANS-1,3-DICHLOROPROPENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	0.69
TRICHLOROFLUOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
VINYL CHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
<b>TETRACHLOROETHENE</b>					
TETRACHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	3.7

TOWN OF OYSTER BAY OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK

TABLE 3

GROUNDWATER ANALYTICAL SAMPLING RESULTS- VOLATILE ORGANIC COMPOUNDS  
FIRST QUARTER SAMPLING ROUND - FEBRUARY 2001

SAMPLE ID:  PARAMETERS (Units- $\mu\text{g/l}$ )	FIELD BLANK 2/13/01	TRIP BLANK #1 2/13/01	TRIP BLANK #2 2/14/01	TRIP BLANK #3 2/15/01	TRIP BLANK #4 2/16/01
<b>TOTAL VOCs</b>	0	0	0	0	0
<b>AROMATIC HYDROCARBONS</b>					
1,2-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-DICHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
M/P-XYLENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
O-XYLENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TOLUENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
<b>VOLATILE HALOGENATED HYDROCARBONS</b>					
1,1,1-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-TETRACHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-TRICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-DICHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-DICHLOROPROPANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-CHLOROETHYL VINYL ETHER	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMODICHLOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMOFORM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BROMOMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CARBON TETRACHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLORODIBROMOMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROFORM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CHLOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CIS-1,2-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
CIS-1,3-DICHLOROPROPENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
DICHLORODIFLUOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
METHYLENE CHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRANS-1,2-DICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRANS-1,3-DICHLOROPROPENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRICHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TRICHLOROFLUOROMETHANE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
VINYL CHLORIDE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
<b>PETRACHLOROETHENE</b>					
PETRACHLOROETHENE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

TABLE 4

GROUNDWATER SAMPLING ANALYTICAL RESULTS - TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS  
FIRST QUARTER SAMPLING ROUND - FEBRUARY 2001

SAMPLE ID: PARAMETERS (Units- mg/l)	M-30B-R	MW-5B	MW-6A	MW-6B	MW-6C	MW-6E	MW-6F	MW-7B	MW-8A	MW-8B
ALUMINUM	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.283	<0.2
AMMONIA (AS N)	<0.1	0.407	0.145	124	62.8	10.2	<0.1	<0.1	1.33	1.47
BARIIUM	<0.2	<0.2	<0.2	<0.2	<0.2	0.24	<0.2	<0.2	<0.2	<0.2
BICARBONATE (AS CaCO3)	16.4	44.9	7.20	989	784	47.2	<1	4.00	10.4	27.6
CALCIUM	16.2	10.8	1.35	22.2	51.4	27.2	26.9	4.38	10.8	36.1
CARBONATE (AS CaCO3)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
CHLORIDE	111	22.4	9.01	287	367	166	171	28.3	21.3	40.3
CHROMIUM	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
COPPER	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
HARDNESS	110	100	30.0	44.0	190	145	143	44.0	73.0	150
HEXA VALENT CHROMIUM	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
IRON	0.0466	0.140	0.0735	18.3	13.5	1.04	0.0654	0.389	0.0480	0.0779
KJELDAHL NITROGEN	0.317	0.876	0.249	156	26.4	15.4	0.204	<0.1	1.66	1.73
LEAD (Units - ug/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MAGNESIUM	8.22	11.8	1.52	19.7	13.5	12.1	10.9	2.44	4.59	12.8
MANGANESE	<0.02	2.22	0.0522	0.216	0.187	0.620	0.0506	0.0440	0.284	1.30
MERCURY (Units - ug/l)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
NICKEL	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
NITRATE (AS N)	2.79	0.219	1.96	<0.1	<0.1	<0.1	0.573	2.46	2.89	<0.1
POTASSIUM	9.10	8.45	5.79	127	106	26.7	2.78	0.975	49.1	20.3
SODIUM	47.8	51.2	5.94	244	364	38.9	44.2	13.0	72.5	82.6
SULFATE	23.1	16.0	<5	6.00	36.2	19.0	<5	<5	77.2	51.6
TOTAL ALKALINITY	16.4	44.9	7.20	989	784	47.2	<1	4.00	10.4	27.6
TOTAL CYANIDE (Units - ug/l)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TOTAL DISSOLVED SOLIDS	320	250	55.0	940	1,500	378	315	61	390	400
TOTAL PHENOLS (Units - ug/l)	<5	<5	<5	7.32	12.4	<5	<5	<5	<5	<5
ZINC	<0.02	<0.02	<0.02	<0.02	<0.02	0.0329	0.0276	<0.02	0.0258	0.0662

NOTES:

mg/l - milligrams per liter

ug/l - micrograms per liter

TABLE 4

GROUNDWATER SAMPLING ANALYTICAL RESULTS - TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS  
 FIRST QUARTER SAMPLING ROUND- FEBRUARY 2001

SAMPLE ID: PARAMETERS (Units- mg/l)	MW-9B	MW-9B DUPLICATE	MW-9C	MW-11A	MW-11B	OBS-1	LF-1	FIELD BLANK
ALUMINUM	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	< 0.2
AMMONIA (AS N)	0.494	0.514	16.2	< 0.1	< 0.1	1.47	NA	< 0.1
BARIUM	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	< 0.2
BICARBONATE (AS CaCO3)	8.00	8.20	61.8	2.00	1.60	46.0	126	< 1
CALCIUM	7.47	7.59	1.15	3.15	1.06	15.1	NA	< 0.2
CARBONATE (AS CaCO3)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CHLORIDE	39.5	37.3	95.2	6.58	4.04	99.8	149	< 2
CHROMIUM	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NA	< 0.01
COPPER	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	NA	< 0.02
HARDNESS	44.0	40.0	55.0	44.0	22.0	100	110	< 5
HEXAVALENT CHROMIUM	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
IRON	< 0.02	< 0.02	0.0852	0.0713	< 0.02	0.0807	NA	< 0.02
KJELDAHL NITROGEN	0.763	0.754	23.8	< 0.1	0.113	2.54	19.0	< 0.1
LEAD (Units - ug/l)	< 5	< 5	< 5	< 5	< 5	< 5	NA	< 5
MAGNESIUM	4.48	4.59	1.93	1.83	0.530	15.4	NA	< 0.2
MANGANESE	0.0938	0.0965	0.0365	< 0.02	< 0.02	0.706	NA	< 0.02
MERCURY (Units - ug/l)	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	< 0.2
NICKEL	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	NA	< 0.04
NITRATE (AS N)	5.11	5.14	0.102	2.89	0.738	0.948	< 0.1	< 0.1
POTASSIUM	5.88	6.16	24.4	1.04	0.552	6.56	NA	< 0.2
SODIUM	20.1	21.1	45.0	5.60	3.25	56.0	NA	< 0.2
SULFATE	14.3	14.5	18.1	< 5	< 5	46.0	19.4	< 5
TOTAL ALKALINITY	8.00	8.20	61.8	2.00	1.60	46.0	126	< 1
TOTAL CYANIDE (Units - ug/l)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TOTAL DISSOLVED SOLIDS	110	110	170	37	40	300	430	< 10
TOTAL PHENOLS (Units - ug/l)	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
ZINC	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	NA	< 0.02

NOTES:

mg/l - milligrams per liter

ug/l - micrograms per liter



TOWN OF OYSTER BAY  
 OLD BETHPAGE LANDFILL  
 OLD BETHPAGE, NEW YORK

TABLE 5

GROUNDWATER ANALYTICAL SAMPLING RESULTS- DISSOLVED (FILTERED) METALS AND LEACHATE INDICATORS  
 FIRST QUARTERLY SAMPLING ROUND - FEBRUARY 2001

SAMPLE ID:	M-30B-R	MW-5B	MW-6A	MW-6B	MW-6C	MW-6E	MW-6F	MW-7B	MW-8A
PARAMETERS (Units- mg/l)									
ALUMINIUM	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
BARIUM	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.22	< 0.2	< 0.2	< 0.2
CALCIUM	16	11	1.5	22	47	25	28	4.6	11
CHROMIUM	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
COPPER	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
HEXAVALENT CHROMIUM	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
IRON	< 0.02	0.028	< 0.02	0.063	0.11	< 0.02	0.053	< 0.02	< 0.02
LEAD (Units - ug/l)	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
MAGNESIUM	8.2	12	1.6	20	13	11	11	2.6	4.5
MANGANESE	< 0.02	2.3	0.054	0.20	0.17	0.57	0.054	0.047	0.30
MERCURY (Units - ug/l)	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
NICKEL	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
POTASSIUM	8.8	9.5	6.0	140	100	25	2.8	1.1	54
SODIUM	48	56	6.2	260	350	36	46	14	80
ZINC	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.024	0.028	< 0.02	< 0.02

NOTES:

mg/l - milligrams per liter  
 ug/l - micrograms per liter

TOWN OF OYSTER BAY  
 OLD BETHPAGE LANDFILL  
 OLD BETHPAGE, NEW YORK

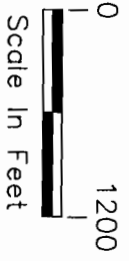
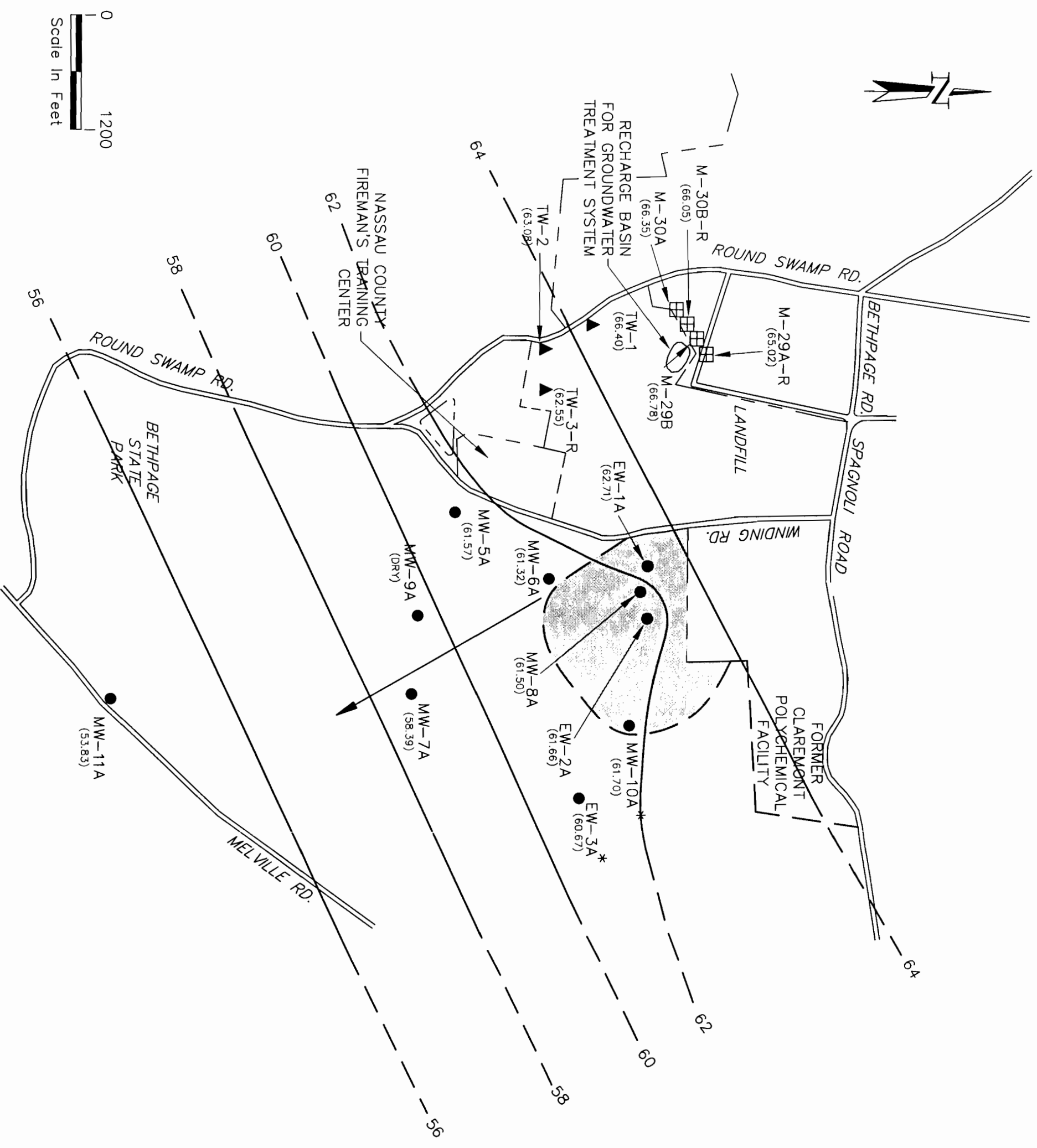
TABLE 5

GROUNDWATER ANALYTICAL SAMPLING RESULTS- DISSOLVED (FILTERED) METALS AND LEACHATE INDICATORS  
 FIRST QUARTERLY SAMPLING ROUND - FEBRUARY 2001

SAMPLE ID: PARAMETERS (Units- mg/l)	MW-8B	MW-9B	MW-9B DUPLICATE	MW-9C	MW-9D	MW-11A	MW-11B	OBS-1	FIELD BLANK
ALUMINUM	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
BARIUM	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
CALCIUM	34	7.9	8.5	1.1	2.8	1.3	15	< 0.2	< 0.20
CHROMIUM	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
COPPER	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
HEXAVALENT CHROMIUM	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
IRON	0.053	< 0.02	0.022	< 0.02	< 0.02	< 0.02	0.026	< 0.02	< 0.02
LEAD (Units - ug/l)	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
MAGNESIUM	12	4.8	5.2	1.9	1.7	0.63	16	< 0.2	< 0.2
MANGANESE	1.2	0.10	0.11	0.037	< 0.02	< 0.02	0.72	< 0.02	< 0.02
MERCURY (Units - ug/l)	< 0.2	< 0.2	< 0.04	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
NICKEL	< 0.04	< 0.04	7.2	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
POTASSIUM	20	6.3	22	25	0.88	0.66	7.0	< 0.2	< 0.2
SODIUM	82	21	< 0.02	47	4.9	3.8	60	0.23	0.23
ZINC	0.061	< 0.02	< 0.02	< 0.02	< 0.02	0.034	< 0.02	< 0.02	< 0.02

NOTES:

mg/l - milligrams per liter  
 ug/l - micrograms per liter



**LEGEND**

- MW-5A (61.57) Monitoring Well Location And Designation
- Water Level Elevation In Feet Above Mean Sea Level
- ▲ TW-2 Phase II Extension Well
- ▣ M-29A Upgradient Well
- Property Boundary
- Groundwater Flow Direction
- Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- Approximate Areal Extent Of The VOC Plume In Water Table Wells - February 2001
- \* Plume Extent Based On Third Quarter 1998 Data.

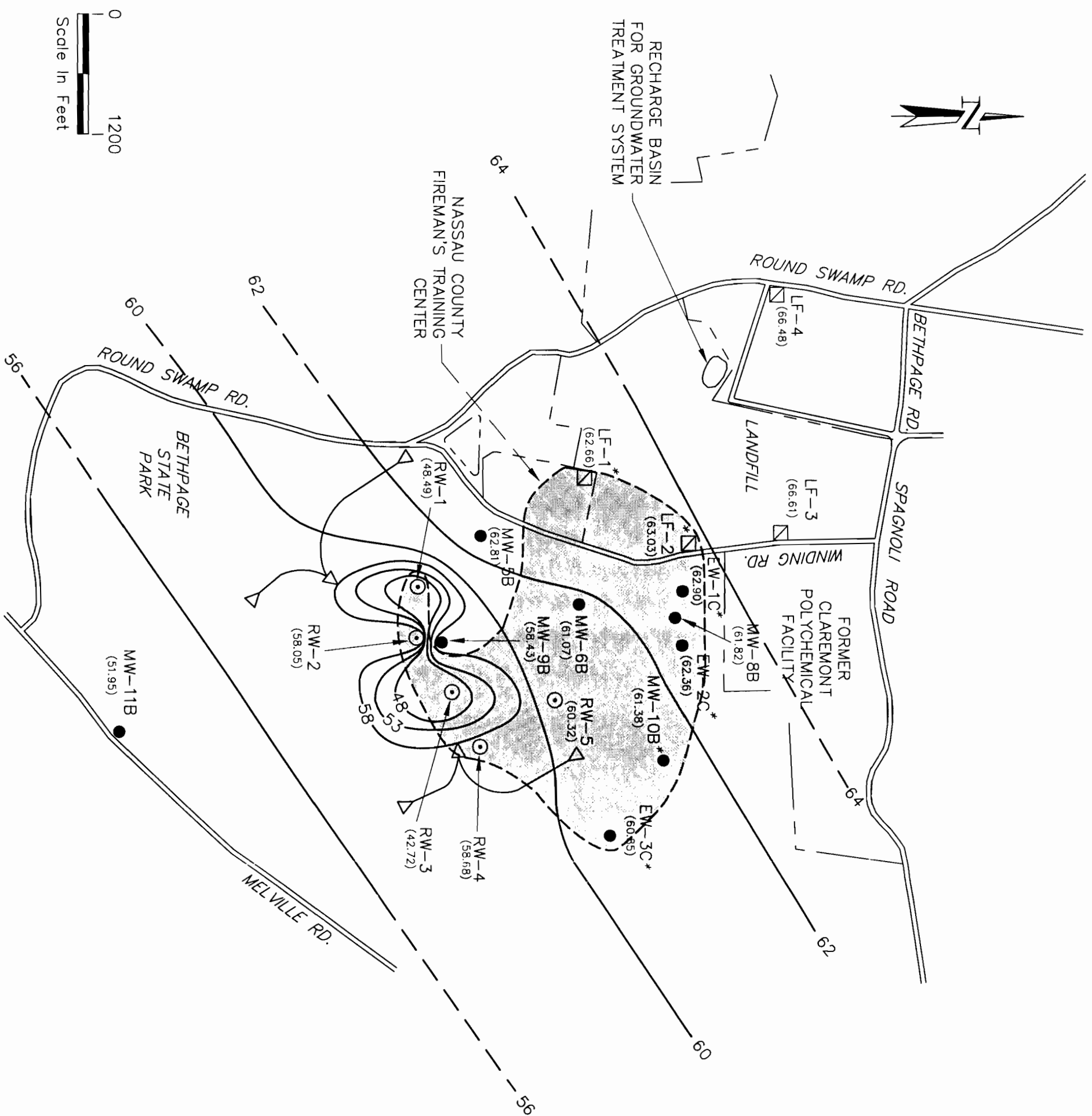
**WATER TABLE**

**FLOW MAP**

**FEBRUARY 12, 2001**

OLD BETHPAGE LANDFILL

TOWN OF NYCTED BAY

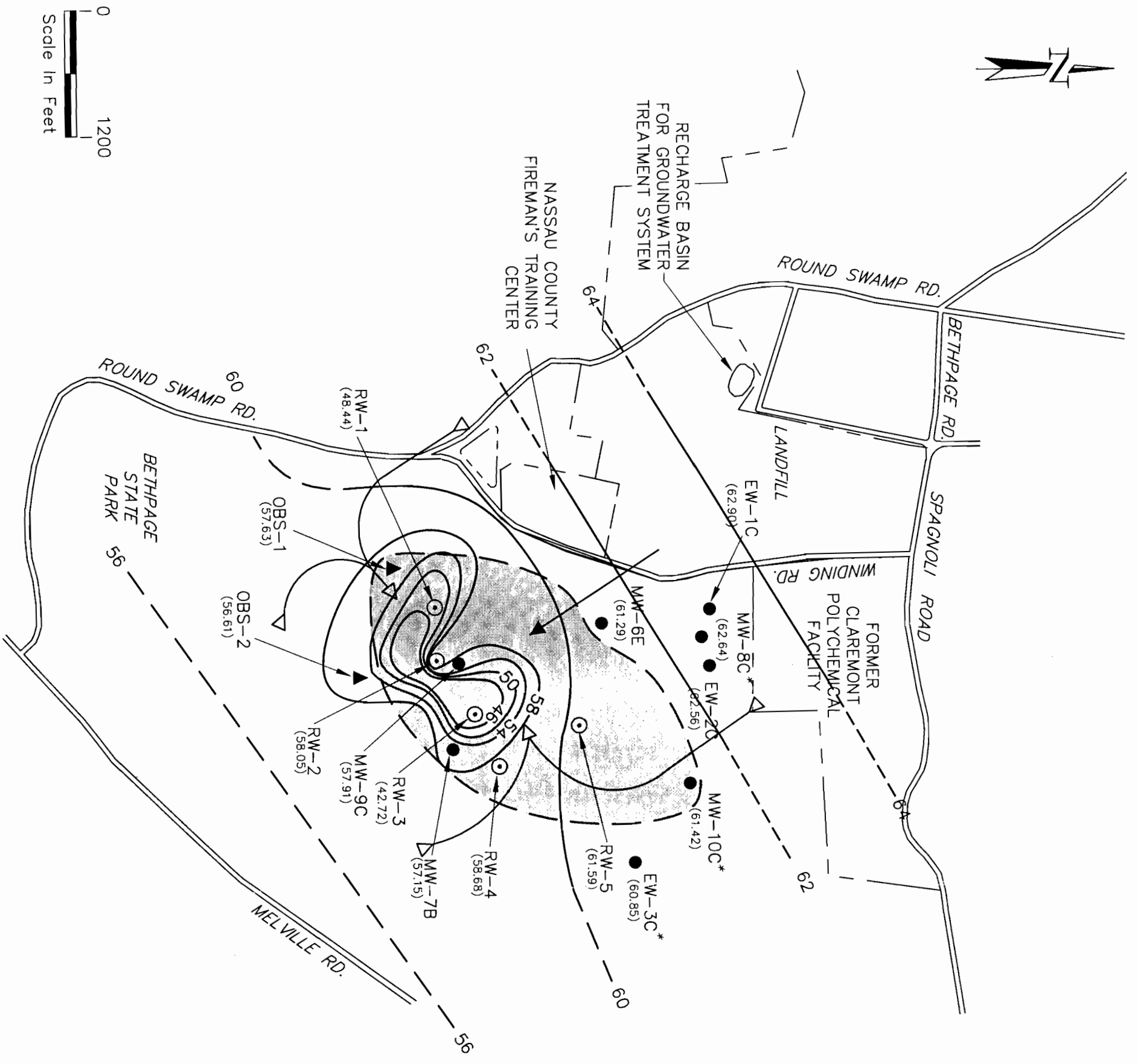


**LEGEND**

- MW-5B (62.70)  
 Monitoring Well Location And Designation  
 Water Level Elevation In Feet  
 Above Mean Sea Level
- RW-5  
 Recovery Well
- LF-2  
 Phase III Well
- Limiting Flow Lines Depicting Estimated  
 Effective Capture Zones
- Groundwater Flow Direction
- Line Of Equal Elevation Of The Water Table  
 In Feet Above Mean Sea Level (Dashed  
 Where Inferred)
- Property Boundary
- Approximate Areal Extent Of The  
 VOC Plume In Shallow Potentiometric Zone  
 February 2001.
- \* Plume Extent Based On Third Quarter 1998 Data.

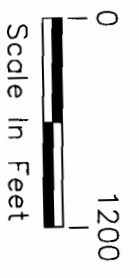
**SHALLOW POTENTIOMETRIC  
FLOW MAP**

**FEBRUARY 12, 2001**  
 OLD BETHPAGE LANDFILL  
 TOWN OF OYSTER BAY

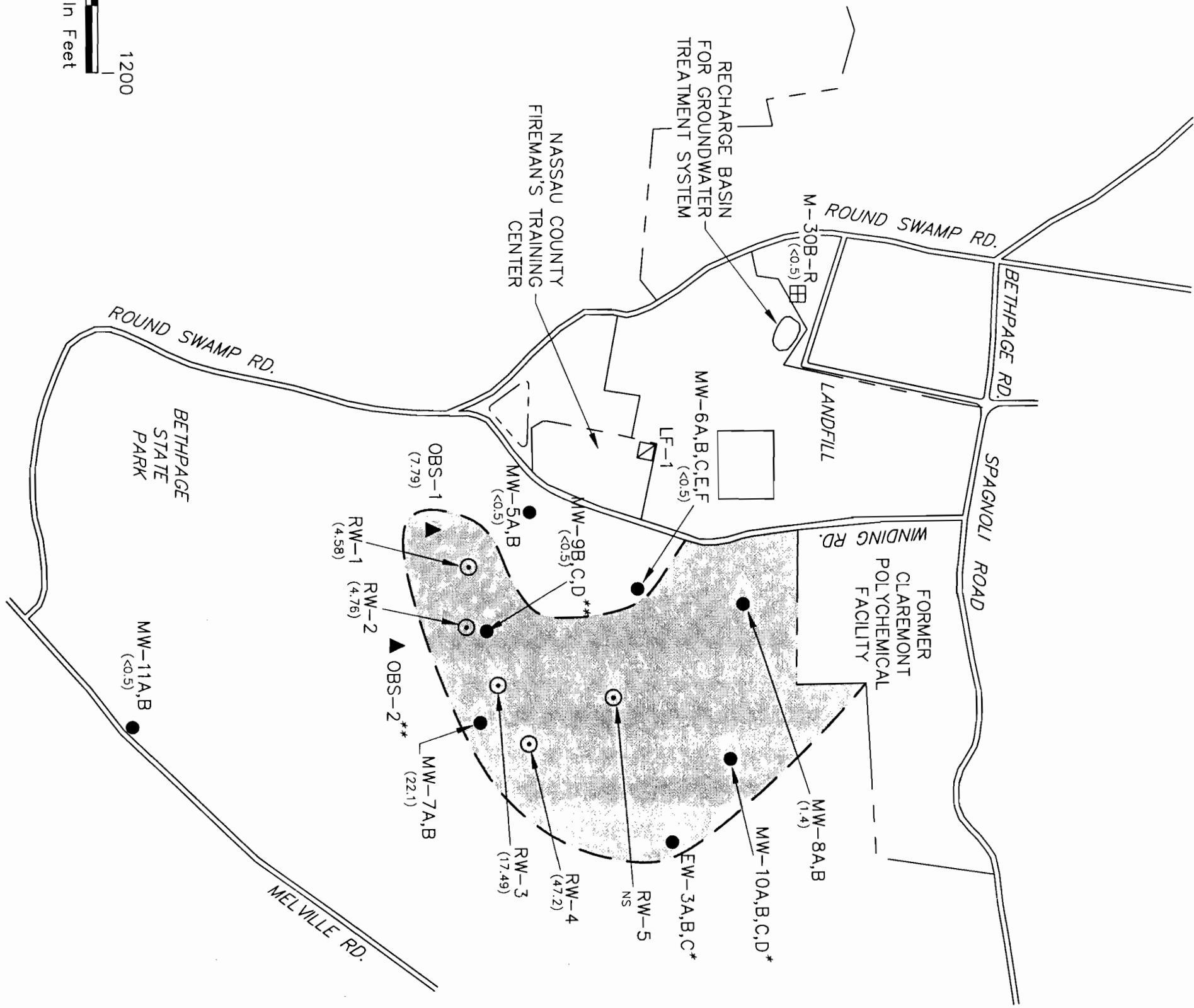


**LEGEND**

- MW-8C (62.64)  
Monitoring Well Location And Designation  
Water Level Elevation In Feet Above Mean Sea Level
- ⊙ RW-4  
Recovery Well
- ▲ OBS-2  
Phase II Extension Well
- Property Boundary
- Limiting Flow Lines Depicting Estimated Effective Capture Zone
- Groundwater Flow Direction
- Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- ⬢  
Approximate Areal Extent Of The VOC Plume In The Deep Potentiometric Zone - February 2001
- \*  
Plume Extent Based On Third Quarter 1998 Data



**DEEP POTENTIOMETRIC  
FLOW MAP**  
**FEBRUARY 12, 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**LEGEND**

- MW-5B (1) ● Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- RW-5 ○ Recovery Well
- OBS-2 ▲ Phase II Extension Well
- LF-1 □ Phase III Well
- M-29A-R ▣ Upgradient Well
- Property Boundary
- Approximate Areal Extent Of The Volatile Halogenated Organic Plume

**NOTE**

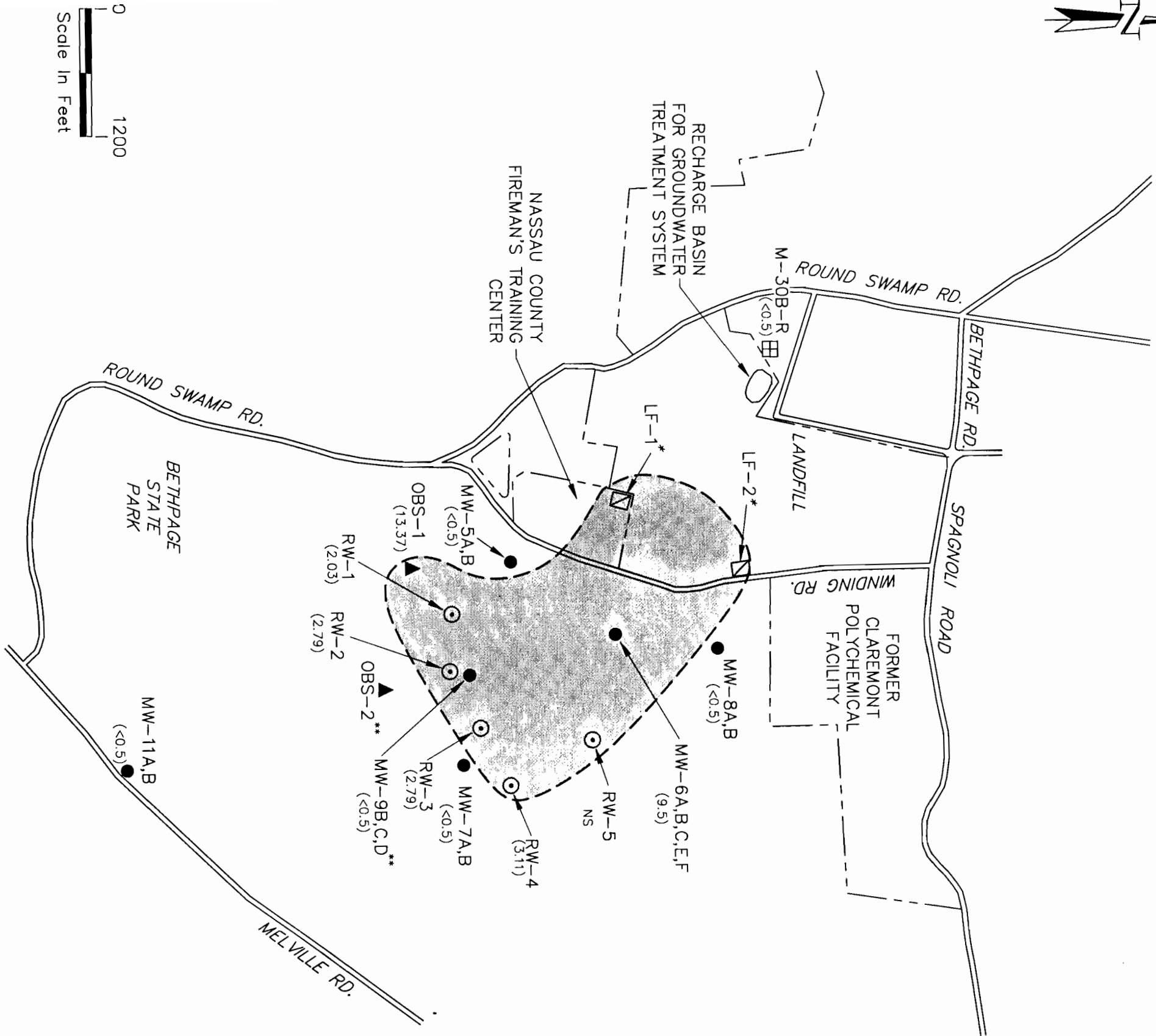
Plume Contour Is Based On Total Volatile Halogenated Organics Concentrations In The Monitoring And Recovery Wells.

- \* Plume Extent Based On Third Quarter 1998 Data.
- \*\* Plume Extent Based On Third Quarter 2000 Data.
- NS - Recovery Well Off-line When Samples Were Collected.



**APPROXIMATE EXTENT AND DISTRIBUTION OF TOTAL VOLATILE HALOGENATED ORGANICS FEBRUARY 2001**

OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**LEGEND**

- MW-5B ● Monitoring Well Location And Total Aromatic Hydrocarbon Concentration, ppb (<1)
- RW-4 ○ Recovery Well
- OBS-1 ▲ Phase II Extension Well
- LF-1 □ Phase III Well
- M-29A-R ▣ Upgradient Well
- Property Boundary
- Approximate Areal Extent Of The Aromatic Hydrocarbon Plume

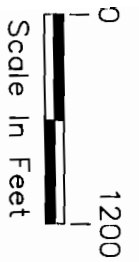
**NOTE**

Plume Contour is Based On Total Aromatic Hydrocarbon Concentrations In The Monitoring And Recovery Wells.

\* Plume Extent Based On Third Quarter 1998 Data

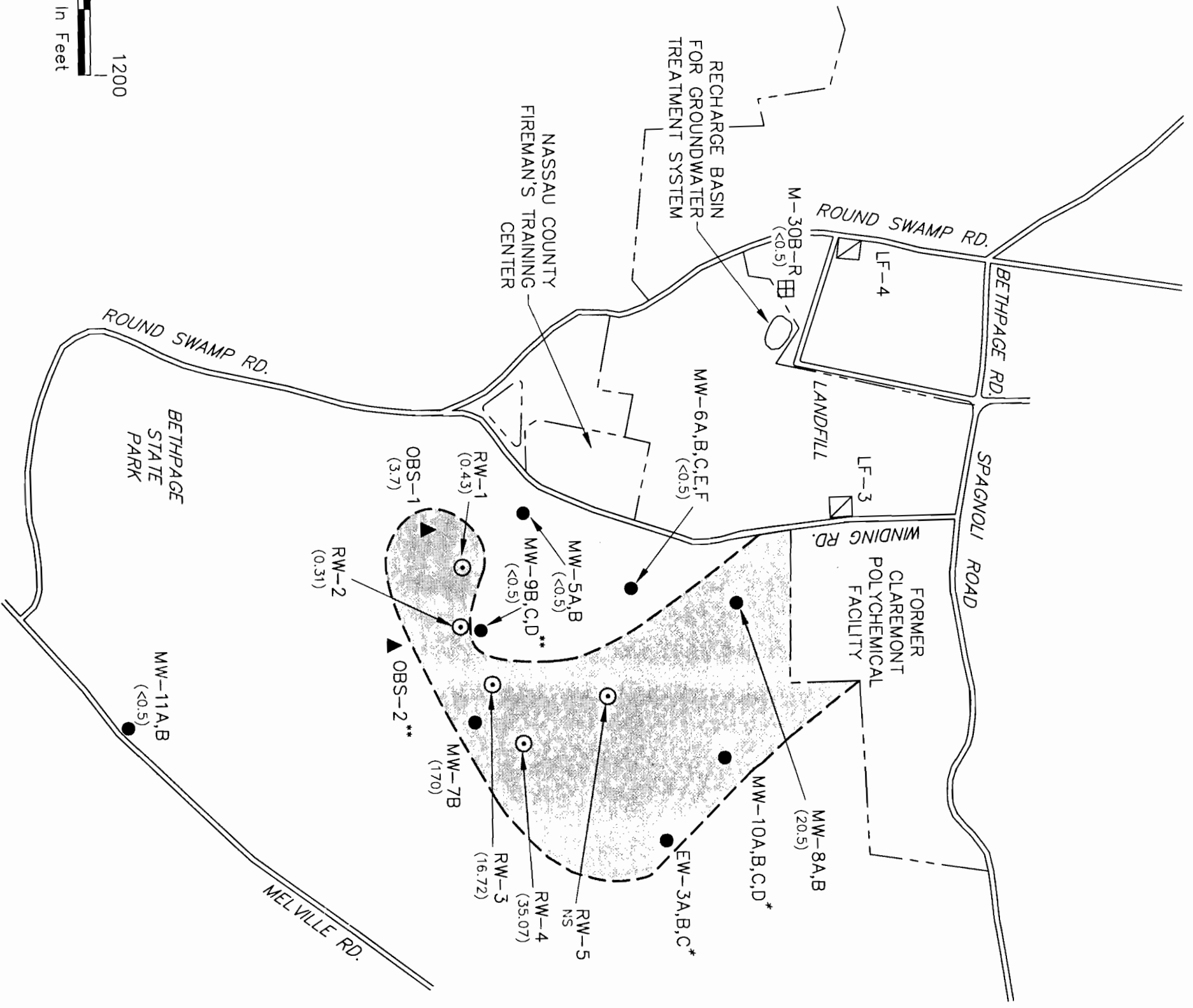
\*\* Plume Extent Based On Third Quarter 2000 Data

NS - Recovery Well Off-line When Samples Were Collected.



**APPROXIMATE EXTENT AND DISTRIBUTION OF TOTAL AROMATIC HYDROCARBONS**

**FEBRUARY 2001**  
 OLD BETHPAGE LANDFILL  
 TOWN OF NYCTER DAY



**LEGEND**

- MW-5B ● Monitoring Well Location And Tetrachloroethene Concentration, ppb
- RW-4 ⊙ Recovery Well
- OBS-1 ▲ Phase II Extension Well
- LF-3 ▣ Phase III Well
- M-29A-R ▤ Upgradient Well

- Property Boundary
- Approximate Areal Extent Of The Tetrachloroethene Plume

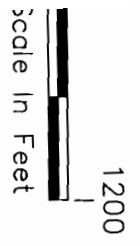
**NOTE**

Plume Contour Is Based On Tetrachloroethene Concentrations In The Monitoring And Recovery Wells.

\* Plume Extent Based On Third Quarter 1998 Data.

\*\* Plume Extent Based On Third Quarter 2000 Data.

NS - Recovery Well Off-line When Samples Were Collected.



**APPROXIMATE EXTENT  
AND DISTRIBUTION  
OF TETRACHLOROETHENE  
FEBRUARY 2001  
OLD BETHPAGE LANDFILL  
TOWN OF BETHPAGE, N.Y.**



TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - APRIL 30, 2001

PERIOD: From 02/12/2001 thru 04/30/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
LF-1	2/12/2001	111.40	00:00	48.74	NA	62.66
LF-1	4/30/2001	111.40	00:00	47.55	1.19	63.85
LF-2	2/12/2001	118.70	00:00	55.67	NA	63.03
LF-2	4/30/2001	118.70	00:00	54.86	0.81	63.84
LF-3	2/12/2001	126.50	00:00	59.89	NA	66.61
LF-3	4/30/2001	126.50	00:00	60.00	-0.11	66.50
LF-4	2/12/2001	149.93	00:00	83.45	NA	66.48
LF-4	4/30/2001	149.93	00:00	82.92	0.53	67.01
M-29A-R	2/12/2001	157.50	00:00	92.48	NA	65.02
M-29A-R	4/30/2001	157.50	00:00	91.97	0.51	65.53
M-29B	2/12/2001	157.41	00:00	90.63	NA	66.78
M-29B	4/30/2001	157.41	00:00	90.08	0.55	67.33
M-30A	2/12/2001	151.20	00:00	84.85	NA	66.35
M-30A	4/30/2001	151.20	00:00	83.90	0.95	67.30
M-30B-R	2/12/2001	154.51	00:00	88.46	NA	66.05
M-30B-R	4/30/2001	154.51	00:00	87.80	0.66	66.71
MW-05A	2/12/2001	137.13	00:00	75.56	NA	61.57
MW-05A	4/30/2001	137.13	00:00	74.71	0.85	62.42
MW-05B	2/12/2001	138.43	00:00	75.62	NA	62.81
MW-05B	4/30/2001	138.43	00:00	75.98	-0.36	62.45
MW-06A	2/12/2001	160.24	00:00	98.92	NA	61.32
MW-06A	4/30/2001	160.24	00:00	97.66	1.26	62.58
MW-06B	2/12/2001	160.39	00:00	99.32	NA	61.07
MW-06B	4/30/2001	160.39	00:00	98.10	1.22	62.29
MW-06C	2/12/2001	159.99	00:00	98.84	NA	61.15
MW-06C	4/30/2001	159.99	00:00	97.57	1.27	62.42
MW-06D	2/12/2001	160.39	00:00	99.09	NA	61.30
MW-06D	4/30/2001	160.39	00:00	97.82	1.27	62.57
MW-06E	2/12/2001	160.88	00:00	99.59	NA	61.29
MW-06E	4/30/2001	160.88	00:00	98.37	1.22	62.51
MW-06F	2/12/2001	159.88	00:00	99.10	NA	60.78
MW-06F	4/30/2001	159.88	00:00	97.64	1.46	62.24
MW-07A	2/12/2001	148.44	00:00	90.05	NA	58.39

RW-2, -4, -5 were not pumping on 2/12/01 and 4/30/01.  
D - Dry

TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - APRIL 30, 2001

PERIOD: From 02/12/2001 thru 06/30/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
MW-07A	4/30/2001	148.44	00:00	88.20	1.85	60.24
MW-07B	2/12/2001	147.94	00:00	90.79	NA	57.15
MW-07B	4/30/2001	147.94	00:00	89.05	1.74	58.89
MW-08A	2/12/2001	134.94	00:00	73.44	NA	61.50
MW-08A	4/30/2001	134.94	00:00	72.42	1.02	62.52
MW-08B	2/12/2001	134.24	00:00	72.42	NA	61.82
MW-08B	4/30/2001	134.24	00:00	71.32	1.10	62.92
MW-08C	2/12/2001	135.72	00:00	73.08	NA	62.64
MW-08C	4/30/2001	135.72	00:00	72.11	0.97	63.61
MW-09A	2/12/2001	153.35	00:00	D	NA	NA
MW-09A	4/30/2001	153.35	00:00	D	NA	NA
MW-09B	2/12/2001	153.28	00:00	94.85	NA	58.43
MW-09B	4/30/2001	153.28	00:00	93.25	1.60	60.03
MW-09C	2/12/2001	153.53	00:00	95.62	NA	57.91
MW-09C	4/30/2001	153.53	00:00	94.07	1.55	59.46
MW-09D	2/12/2001	152.95	00:00	95.08	NA	57.87
MW-09D	4/30/2001	152.95	00:00	94.35	0.73	58.60
MW-10A	2/12/2001	161.28	00:00	99.58	NA	61.70
MW-10A	4/30/2001	161.28	00:00	98.45	1.13	62.83
MW-10B	2/12/2001	161.12	00:00	99.74	NA	61.38
MW-10B	4/30/2001	161.12	00:00	98.54	1.20	62.58
MW-10C	2/12/2001	160.27	00:00	98.85	NA	61.42
MW-10C	4/30/2001	160.27	00:00	97.62	1.23	62.65
MW-10D	2/12/2001	161.17	00:00	99.80	NA	61.37
MW-10D	4/30/2001	161.17	00:00	99.63	0.17	61.54
MW-11A	2/12/2001	80.19	00:00	26.36	NA	53.83
MW-11A	4/30/2001	80.19	00:00	23.98	2.38	56.21
MW-11B	2/12/2001	79.91	00:00	27.96	NA	51.95
MW-11B	4/30/2001	79.91	00:00	23.86	4.10	56.05
N-9980	2/12/2001	80.46	00:00	33.01	NA	47.45
N-9980	4/30/2001	80.46	00:00	31.55	1.46	48.91
OBS-1	2/12/2001	110.61	00:00	52.98	NA	57.63
OBS-1	4/30/2001	110.61	00:00	52.12	0.86	58.49

RW-2, -4 and -5 were not pumping on 2/12/01 and 4/30/01.  
D - Dry

TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - APRIL 30, 2001

PERIOD: From 02/12/2001 thru 06/30/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
OBS-2	2/12/2001	105.26	00:00	48.65	NA	56.61
OBS-2	4/30/2001	105.26	00:00	46.89	1.76	58.37
RW-01	2/12/2001	110.94	00:00	62.50	NA	48.44
RW-01	4/30/2001	110.94	00:00	61.33	1.17	49.61
RW-02	2/12/2001	145.31	00:00	87.26	NA	58.05
RW-02	4/30/2001	145.31	00:00	85.35	1.91	59.96
RW-03	2/12/2001	120.92	00:00	78.20	NA	42.72
RW-03	4/30/2001	120.92	00:00	77.03	1.17	43.89
RW-04	2/12/2001	144.82	00:00	86.14	NA	58.68
RW-04	4/30/2001	144.82	00:00	84.49	1.65	60.33
RW-05	2/12/2001	149.74	00:00	89.42	NA	60.32
RW-05	4/30/2001	149.74	00:00	87.96	1.46	61.78
TW-1	2/12/2001	121.12	00:00	54.72	NA	66.40
TW-1	4/30/2001	121.12	00:00	52.84	1.88	68.28
TW-2	2/12/2001	117.52	00:00	54.44	NA	63.08
TW-2	4/30/2001	117.52	00:00	53.41	1.03	64.11
TW-3-R	2/12/2001	133.93	00:00	71.38	NA	62.55
TW-3-R	4/30/2001	133.93	00:00	70.31	1.07	63.62

RW-2, -4 and -5 were not pumping on 2/12/01 and 4/30/01.  
D - Dry

**TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK**

**TABLE 2**

**GROUNDWATER REMEDIATION SYSTEM PUMPAGE RECORDS**

**APRIL THROUGH JUNE 2001**

<b>DATE</b>	<b>ESTIMATED AVERAGE SYSTEM FLOW (GPM)</b>	<b>COMMENTS</b>
4/1 - 6/1	528	RW-2, -4 and -5 off-line
6/2	482	RW-2, -4 and -5 off-line; RW-1 off-line 9 hours
6/3 - 6/4	518	RW-2, -4 and -5 off-line
6/5	460	RW-2 off-line 11 hours; RW-4 and -5 off-line 17 hours; GTF off-line 7 hours
6/6	492	RW-4 and -5 off-line 10 hours; GTF off-line 9 hours; RW-5 off-line 5 hours
6/7 - 6/17	938	RW-5 off-line
6/18	776	RW-5 off-line 19 hours; GTF off-line 5 hours
6/19 - 6/21	926	RW-5 off-line
6/22	1,059	RW-5 off-line 14 hours; GTF off-line 6 hours
6/23 - 6/26	1,007	GTF on-line
6/27	1,068	RW-5 off-line 4 hours
6/27 - 6/30	1,156	GTF on-line

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	M-30B-R 05/01/2001 Primary	MW-05B 05/01/2001 Primary	MW-05B 05/01/2001 Duplicate 1	MW-06A 05/02/2001 Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-06B 05/02/2001 Primary	MW-06C 05/02/2001 Primary	MW-06E 05/02/2001 Primary	MW-06F 05/02/2001 Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00
---=Not analyzed					

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-07B	MW-08A	MW-08B	MW-09B
	DATE	05/01/2001	05/02/2001	05/02/2001	05/01/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	0.9	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	25	0.9	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	25.90	0.90	0.00	0.00

---=Not analyzed

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-09C 05/01/2001 Primary	MW-11A 05/02/2001 Primary	MW-11B 05/01/2001 Primary	OBS-1 05/03/2001 Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	8.6
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	1.1
Sum of Constituents	(ug/l)	0.00	0.00	0.00	10.20
---=Not analyzed					



TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 05/03/2001	TRIP BLANK 05/01/2001	TRIP BLANK 05/02/2001	TRIP BLANK 05/03/2001
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	RESULT TYPE	M-30B-R 05/01/2001 Primary	MW-05B 05/01/2001 Primary	MW-05B 05/01/2001 Duplicate 1	MW-06A 05/02/2001 Primary	MW-06B 05/02/2001 Primary	MW-06C 05/02/2001 Primary
1,2-Dichlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	1.7	1.4
1,3-Dichlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	4.3	3.9
Benzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	5.9	2.1
Chlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	11	3.4
Ethylbenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene	(ug/l)		--	--	--	--	--	--
Sum of Constituents	(ug/l)		0.00	0.00	0.00	0.00	22.90	10.80

---=Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-06E	MW-06F	MW-07B	MW-08A	MW-08B	MW-09B
	DATE	DATE	DATE	DATE	DATE	DATE	DATE
	RESULT TYPE	RESULT TYPE	RESULT TYPE	RESULT TYPE	RESULT TYPE	RESULT TYPE	RESULT TYPE
	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
o-Xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	0.00	0.00	0.00	0.00	0.50	0.00	0.00

---Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-09C	MW-11A	MW-11B	OBS-1
	DATE	05/01/2001	05/02/2001	05/01/2001	05/03/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
1,2-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	0.9
1,3-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	1.1
Benzene	(ug/l)	<0.5	<0.5	<0.5	25
Chlorobenzene	(ug/l)	<0.5	<0.5	<0.5	0.8
Ethylbenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Toluene	(ug/l)	<0.5	<0.5	<0.5	<0.5
m/p-xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	27.80

----=Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 05/03/2001	TRIP BLANK 05/01/2001	TRIP BLANK 05/02/2001	TRIP BLANK 05/03/2001
1,2-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
† Benzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Toluene	(ug/l)	<0.5	<0.5	<0.5	<0.5
m/p-xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE	M-30B-R	MW-05B	MW-05B	MW-06A	MW-06B	MW-06C
	DATE	05/01/2001	05/01/2001	05/01/2001	05/02/2001	05/02/2001	05/02/2001
	RESULT TYPE	Primary	Primary	Duplicate 1	Primary	Primary	Primary
	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	(ug/l)	0.00	0.00	0.00	0.00	0.00	0.00
Tetrachloroethylene							
Sum of Constituents							

---=Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE	DATE	RESULT TYPE	RESULT	UNIT	DATE	RESULT TYPE	RESULT	UNIT
Tetrachloroethylene	MW-06E	05/02/2001	Primary	<0.5	(ug/l)	MW-07B	05/01/2001	Primary	250
Sum of Constituents	MW-06F	05/02/2001	Primary	0.00	(ug/l)	MW-08A	05/02/2001	Primary	14.00
	MW-08B	05/02/2001	Primary	<0.5		MW-08B	05/02/2001	Primary	<0.5
	MW-09B	05/01/2001	Primary	0.00		MW-09B	05/01/2001	Primary	0.00

---=Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-09C	MW-11A	MW-11B	OBS-1
	DATE	05/01/2001	05/02/2001	05/01/2001	05/03/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
	(ug/l)	<0.5	<0.5	<0.5	3.6
Sum of Constituents	(ug/l)	0.00	0.00	0.00	3.60
Tetrachloroethylene					
Sum of Constituents					

---=Not analyzed



TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 05/03/2001	TRIP BLANK 05/01/2001	TRIP BLANK 05/02/2001	TRIP BLANK 05/03/2001
Tetrachloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00
---=Not analyzed					

**TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK**

**TABLE 6**

**RECOVERY WELL SAMPLING RESULTS - VOLATILE ORGANIC COMPOUNDS  
SECOND QUARTER SAMPLING ROUND - APRIL 2001**

<b>SAMPLE DESIGNATION:</b>	<b>RW-1</b>	<b>RW-2</b>	<b>RW-3</b>	<b>RW-4</b>	<b>RW-5</b>
<b>SAMPLE COLLECTION DATE:</b>	<b>04/24/2001</b>		<b>04/24/2001</b>		
Benzene	0.57	*	1.44	*	*
Bromodichloromethane	ND	*	ND	*	*
Bromoform	ND	*	ND	*	*
Carbon tetrachloride	ND	*	ND	*	*
Chlorobenzene	0.91	*	1.19	*	*
Chlorodibromomethane	ND	*	ND	*	*
Chloroethane	ND	*	ND	*	*
Chloroform	ND	*	ND	*	*
o,p-Dichlorobenzene	2.88	*	2.57	*	*
m,o,p-Dichlorobenzene	2.88	*	2.57	*	*
1,1-Dichloroethane	0.71	*	2.11	*	*
1,2-Dichloroethane	ND	*	ND	*	*
1,1-Dichloroethene	ND	*	ND	*	*
cis-1,2-Dichloroethene	2.15	*	14.62	*	*
trans-1,2-Dichloroethene	ND	*	ND	*	*
1,2-Dichloropropane	ND	*	ND	*	*
Ethylbenzene	ND	*	ND	*	*
Methylene chloride	ND	*	ND	*	*
Tetrachloroethene	0.54	*	23.58	*	*
Toluene	ND	*	ND	*	*
1,1,1-Trichloroethane	ND	*	ND	*	*
Trichloroethylene	ND	*	2.62	*	*
Vinyl chloride	0.61	*	0.65	*	*
o-Xylene	ND	*	ND	*	*
m+p-Xylene	ND	*	ND	*	*
Xylenes (total)	ND	*	ND	*	*
Dichlorodifluoromethane	ND	*	0.59	*	*
Isopropylbenzene	ND	*	ND	*	*
n-Butylbenzene	ND	*	ND	*	*
tert-Butylbenzene	ND	*	ND	*	*
Total VOCs	8.37	*	49.37	*	*

Notes:

All concentrations in ppb.

ND - Not detected

\* RW-2, RW-4 and RW-5 were off-line when samples were collected.

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	LF-1 05/03/2001 Primary	M-30B-R 05/01/2001 Primary	MW-05B 05/01/2001 Primary	MW-05B 05/01/2001 Duplicate 1
Alkalinity	(mg/l)	114	20.5	42.6	44.3
Aluminum	(mg/l)	---	<0.2	<0.2	<0.2
Ammonia (as N)	(mg/l)	---	0.337	0.242	0.24
Barium	(mg/l)	---	<0.2	<0.2	<0.2
Bicarbonate (as CaCO3)	(mg/l)	114	---	42.6	44.3
Calcium	(mg/l)	---	18.7	12.1	11.7
Carbonate (as CaCO3)	(mg/l)	<1	---	<1	<1
Chloride	(mg/l)	142	117	116	114
Chromium	(mg/l)	---	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	---	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	114	72	84	84
Iron	(mg/l)	---	0.0645	0.128	0.123
Lead	(ug/l)	---	<5	<5	<5
Magnesium	(mg/l)	---	9.04	13.7	13.3
Manganese	(mg/l)	---	<0.02	2.54	2.47
Mercury	(ug/l)	---	<0.2	<0.2	<0.2
Nickel	(mg/l)	---	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	<0.1	2.4	<0.1	<0.1
Potassium	(mg/l)	---	9.71	8.71	8.45
Sodium	(mg/l)	---	53.1	57.6	56
Sulfate	(mg/l)	13.2	19.3	10.6	13.5
Total dissolved solids (TDS)	(mg/l)	374	---	274	286
Total Kjeldahl nitrogen (as N)	(mg/l)	16.5	---	0.251	<0.2
Total Phenols	(mg/l)	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	(mg/l)	---	<0.02	<0.02	<0.02

---=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-06A 05/02/2001 Primary	MW-06B 05/02/2001 Primary	MW-06C 05/02/2001 Primary	MW-06E 05/02/2001 Primary
Alkalinity	(mg/l)	6.2	900	822	32
Aluminum	(mg/l)	<0.2	<0.2	<0.2	<0.2
Ammonia (as N)	(mg/l)	<0.1	109	77.2	7.52
Barium	(mg/l)	<0.2	<0.2	<0.2	0.301
Bicarbonate (as CaCO3)	(mg/l)	6.2	900	822	32
Calcium	(mg/l)	2.77	22.3	58.3	31.4
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	10.3	294	439	149
Chromium	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	<0.02	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	14	130	240	130
Iron	(mg/l)	<0.02	18.9	17.8	1.55
Lead	(ug/l)	<5	<5	<5	<5
Magnesium	(mg/l)	3.08	21.5	16.9	13.7
Manganese	(mg/l)	0.118	0.221	0.262	0.688
Mercury	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel	(mg/l)	<0.04	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	3.78	<0.1	<0.1	<0.1
Potassium	(mg/l)	5.71	122	116	26.6
Sodium	(mg/l)	7.64	288	432	38.6
Sulfate	(mg/l)	<5	12.8	38	11.2
Total dissolved solids (TDS)	(mg/l)	102	1010	1370	413
Total Kjeldahl nitrogen (as N)	(mg/l)	<0.1	108	174	6.98
Total Phenols	(mg/l)	<0.0050	0.0064	<0.0050	<0.0050
Zinc	(mg/l)	<0.02	<0.02	0.0226	0.0314

---=Not analyzed

TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-06F 05/02/2001 Primary	MW-07B 05/01/2001 Primary	MW-08A 05/02/2001 Primary	MW-08B 05/02/2001 Primary
Alkalinity	(mg/l)	<1	3.4	15.2	13.5
Aluminum	(mg/l)	<0.2	<0.2	<0.2	<0.2
Ammonia (as N)	(mg/l)	0.136	<0.1	1.59	1.71
Barium	(mg/l)	<0.2	<0.2	<0.2	0.2
Bicarbonate (as CaCO3)	(mg/l)	<1	3.4	15.2	13.5
Calcium	(mg/l)	30.2	3.63	8.64	35.4
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	163	22.1	109	255
Chromium	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	<0.02	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	106	16	26	140
Iron	(mg/l)	0.0309	0.0847	<0.02	0.0639
Lead	(ug/l)	<5	<5	<5	<5
Magnesium	(mg/l)	12.2	2.07	3.85	14.3
Manganese	(mg/l)	0.0564	0.0377	0.226	1.49
Mercury	(ug/l)	0.22	<0.2	<0.2	<0.2
Nickel	(mg/l)	<0.04	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	0.565	2.03	6.57	0.13
Potassium	(mg/l)	3.07	0.944	53.1	22.4
Sodium	(mg/l)	49.4	12.6	102	102
Sulfate	(mg/l)	<5	<5	63	16.8
Total dissolved solids (TDS)	(mg/l)	384	86	435	507
Total Kjeldahl nitrogen (as N)	(mg/l)	0.6	<0.1	1.75	1.43
Total Phenols	(mg/l)	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	(mg/l)	<0.02	<0.02	<0.02	0.0784
---=Not analyzed					

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-09B 05/01/2001 Primary	MW-09C 05/01/2001 Primary	MW-11A 05/02/2001 Primary	MW-11B 05/01/2001 Primary
Alkalinity	(mg/l)	7.5	63.9	1.4	1
Aluminum	(mg/l)	<0.2	<0.2	<0.2	<0.2
Ammonia (as N)	(mg/l)	0.436	16.1	<0.1	<0.1
Barium	(mg/l)	<0.2	<0.2	<0.2	<0.2
Bicarbonate (as CaCO3)	(mg/l)	7.5	63.9	1.4	1
Calcium	(mg/l)	7.35	1.21	3.47	1.1
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	34.5	95.6	6.42	3.56
Chromium	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	<0.02	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	32	8	14	8
Iron	(mg/l)	<0.02	0.0406	<0.02	0.0207
Lead	(ug/l)	<5	<5	<5	<5
Magnesium	(mg/l)	4.34	1.99	2.02	0.548
Manganese	(mg/l)	0.0864	0.0415	<0.02	<0.02
Mercury	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel	(mg/l)	<0.04	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	4.3	0.113	4.43	0.826
Potassium	(mg/l)	6.39	27	1.03	0.618
Sodium	(mg/l)	22	51.5	5.49	3.56
Sulfate	(mg/l)	11.1	14.8	<5	<5
Total dissolved solids (TDS)	(mg/l)	118	203	151	69
Total Kjeldahl nitrogen (as N)	(mg/l)	0.668	16.6	<0.1	<0.1
Total Phenols	(mg/l)	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	(mg/l)	<0.02	<0.02	<0.02	<0.02

---=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	OBS-1 05/03/2001 Primary
Alkalinity	(mg/l)	42.4
Aluminum	(mg/l)	<0.2
Ammonia (as N)	(mg/l)	1.35
Barium	(mg/l)	<0.2
Bicarbonate (as CaCO3)	(mg/l)	42.4
Calcium	(mg/l)	15.8
Carbonate (as CaCO3)	(mg/l)	<1
Chloride	(mg/l)	114
Chromium	(mg/l)	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02
Copper	(mg/l)	<0.02
Cyanide	(ug/l)	<10
Hardness (as CaCO3)	(mg/l)	94
Iron	(mg/l)	0.112
Lead	(ug/l)	<5
Magnesium	(mg/l)	16.1
Manganese	(mg/l)	0.818
Mercury	(ug/l)	<0.2
Nickel	(mg/l)	<0.04
Nitrate (as N)	(mg/l)	0.332
Potassium	(mg/l)	6.96
Sodium	(mg/l)	64
Sulfate	(mg/l)	46
Total dissolved solids (TDS)	(mg/l)	312
Total Kjeldahl nitrogen (as N)	(mg/l)	1.11
Total Phenols	(mg/l)	<0.0050
Zinc	(mg/l)	0.0244

---=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 05/03/2001
Alkalinity	(mg/l)	<1
Aluminum	(mg/l)	<0.2
Ammonia (as N)	(mg/l)	<0.1
Barium	(mg/l)	<0.2
Bicarbonate (as CaCO3)	(mg/l)	<1
Calcium	(mg/l)	<0.2
Carbonate (as CaCO3)	(mg/l)	<1
Chloride	(mg/l)	<2
Chromium	(mg/l)	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02
Copper	(mg/l)	<0.02
Cyanide	(ug/l)	<10
Hardness (as CaCO3)	(mg/l)	<5
Iron	(mg/l)	<0.02
Lead	(ug/l)	<5
Magnesium	(mg/l)	<0.2
Manganese	(mg/l)	<0.02
Mercury	(ug/l)	<0.2
Nickel	(mg/l)	<0.04
Nitrate (as N)	(mg/l)	<0.1
Potassium	(mg/l)	<0.2
Sodium	(mg/l)	<0.2
Sulfate	(mg/l)	<5
Total dissolved solids (TDS)	(mg/l)	<10
Total Kjeldahl nitrogen (as N)	(mg/l)	<0.1
Total Phenols	(mg/l)	<0.0050
Zinc	(mg/l)	<0.02

---=Not analyzed



TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
DISSOLVED (FILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	M-30B-R	MW-05B	MW-05B	MW-06A
	DATE	05/01/2001	05/01/2001	05/01/2001	05/02/2001
	RESULT TYPE	Primary	Primary	Duplicate 1	Primary
Aluminum (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Barium (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Calcium (Dissolved)	(mg/l)	15.7	11.6	10.8	2.32
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Iron (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Lead (Dissolved)	(ug/l)	<5	<5	<5	<5
Magnesium (Dissolved)	(mg/l)	7.75	13.2	12	2.63
Manganese (Dissolved)	(mg/l)	<0.02	2.56	2.32	0.106
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	9.05	8.69	7.25	5.11
Sodium (Dissolved)	(mg/l)	49.8	57	49.4	6.96
Zinc (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02

---=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
DISSOLVED (FILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-06B 05/02/2001 Primary	MW-06C 05/02/2001 Primary	MW-06E 05/02/2001 Primary	MW-06F 05/02/2001 Primary
Aluminum (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Barium (Dissolved)	(mg/l)	<0.2	<0.2	0.305	<0.2
Calcium (Dissolved)	(mg/l)	20.2	54.4	29.3	29
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Iron (Dissolved)	(mg/l)	0.0625	0.105	1.32	0.0501
Lead (Dissolved)	(ug/l)	<5	<5	<5	<5
Magnesium (Dissolved)	(mg/l)	19.4	15.8	13.1	11.6
Manganese (Dissolved)	(mg/l)	0.182	0.252	0.678	0.057
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	106	109	27.5	2.88
Sodium (Dissolved)	(mg/l)	254	408	38.2	46.2
Zinc (Dissolved)	(mg/l)	<0.02	<0.02	0.0305	0.0205

---=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
DISSOLVED (FILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-07B	MW-08A	MW-08B	MW-09B
	DATE	05/01/2001	05/02/2001	05/02/2001	05/01/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
Aluminum (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Barium (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Calcium (Dissolved)	(mg/l)	3.52	7.45	32.8	7.93
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Iron (Dissolved)	(mg/l)	<0.02	<0.02	0.046	<0.02
Lead (Dissolved)	(ug/l)	<5	<5	<5	<5
Magnesium (Dissolved)	(mg/l)	2.01	3.26	13.4	4.56
Manganese (Dissolved)	(mg/l)	0.0382	0.204	1.45	0.0962
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	0.952	46	21.7	6.66
Sodium (Dissolved)	(mg/l)	12.6	87.5	97.3	21.4
Zinc (Dissolved)	(mg/l)	<0.02	<0.02	0.083	<0.02

---=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
DISSOLVED (FILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-09C 05/01/2001 Primary	MW-11A 05/02/2001 Primary	MW-11B 05/01/2001 Primary	OBS-1 05/03/2001 Primary
Aluminum (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Barium (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Calcium (Dissolved)	(mg/l)	1.04	3.36	1.06	15.7
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Iron (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	0.0771
Lead (Dissolved)	(ug/l)	<5	<5	<5	<5
Magnesium (Dissolved)	(mg/l)	1.72	1.89	0.547	15.9
Manganese (Dissolved)	(mg/l)	0.0376	<0.02	<0.02	0.808
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	24.2	1.05	0.615	6.58
Sodium (Dissolved)	(mg/l)	45.9	5.45	3.38	61.8
Zinc (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02

---=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

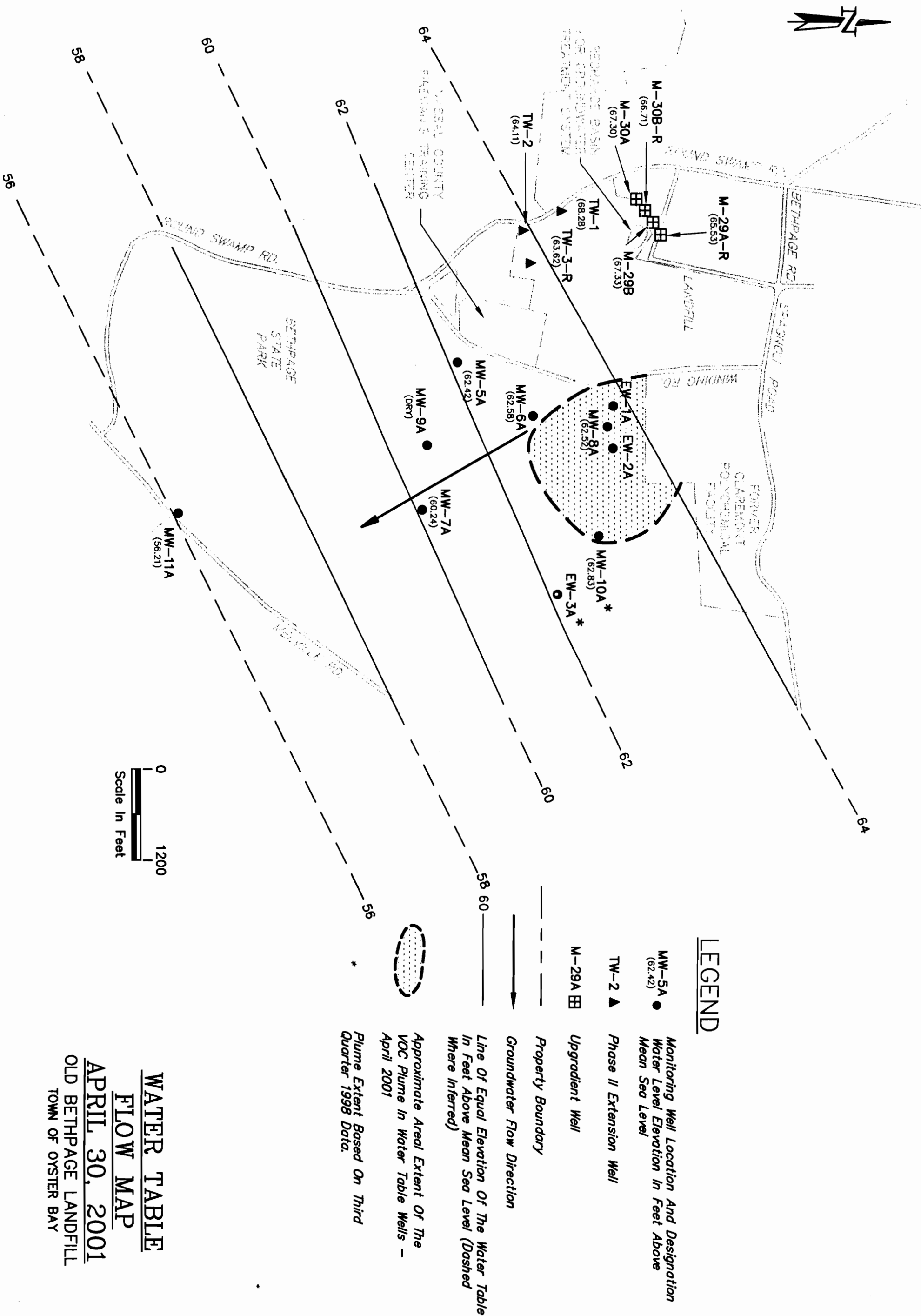
GROUNDWATER ANALYTICAL RESULTS - MAY 2001  
DISSOLVED (FILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 04/01/2001 thru 06/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 05/03/2001
Aluminum (Dissolved)	(mg/l)	<0.2
Barium (Dissolved)	(mg/l)	<0.2
Calcium (Dissolved)	(mg/l)	0.827
Chromium (Dissolved)	(mg/l)	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02
Copper (Dissolved)	(mg/l)	<0.02
Iron (Dissolved)	(mg/l)	<0.02
Lead (Dissolved)	(ug/l)	<5
Magnesium (Dissolved)	(mg/l)	0.801
Manganese (Dissolved)	(mg/l)	0.041
Nickel (Dissolved)	(mg/l)	<0.04
Potassium (Dissolved)	(mg/l)	0.318
Sodium (Dissolved)	(mg/l)	3.39
Zinc (Dissolved)	(mg/l)	<0.02

---=Not analyzed

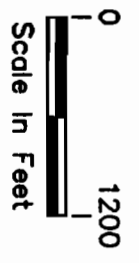
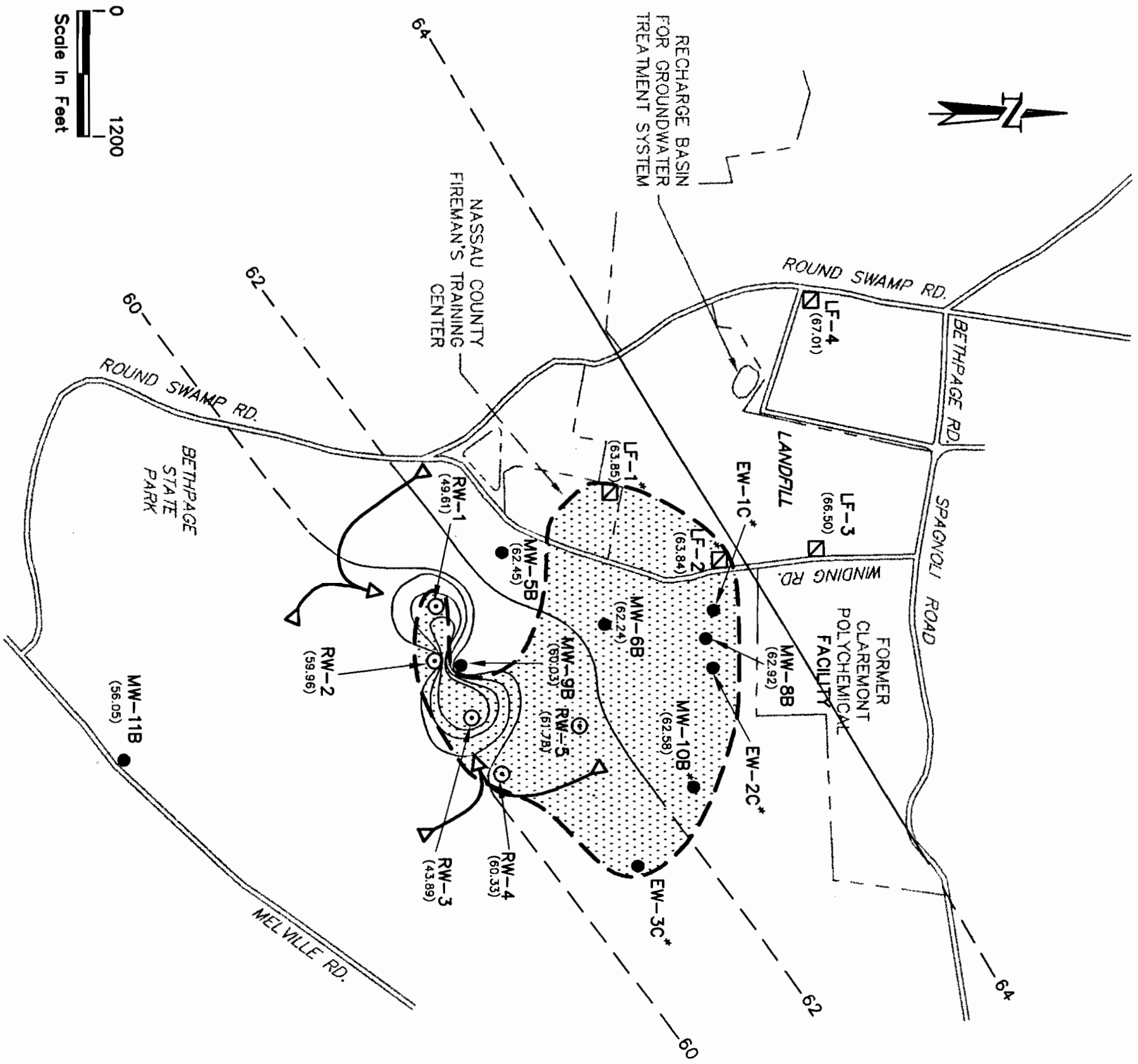


**LEGEND**

- MW-5A ● Monitoring Well Location And Designation
- (62.42) Water Level Elevation In Feet Above Mean Sea Level
- TW-2 ▲ Phase II Extension Well
- M-29A ▤ Upgradient Well
- Property Boundary
- Groundwater Flow Direction
- - - Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- ⊖ Approximate Areal Extent Of The VOC Plume In Water Table Wells - April 2001
- \* Plume Extent Based On Third Quarter 1998 Data.



**WATER TABLE  
FLOW MAP**  
**APRIL 30, 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY

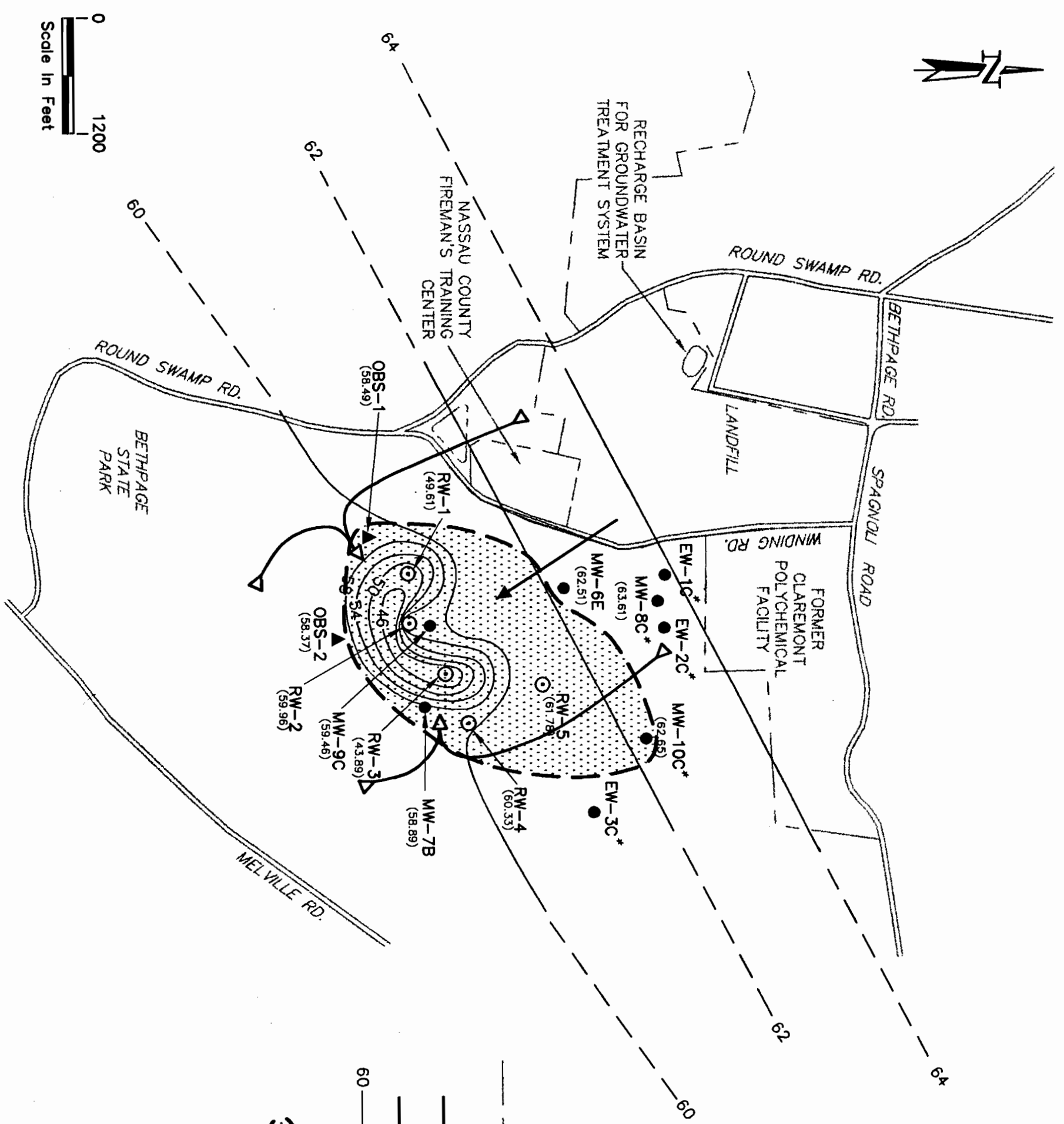


**LEGEND**

- MW-5B ● Monitoring Well Location And Designation
- (62.45) Water Level Elevation In Feet
- Above Mean Sea Level
- RW-5 ○ Recovery Well
- LF-2 □ Phase III Well
- Limiting Flow Lines Depicting Estimated Effective Capture Zones
- Groundwater Flow Direction
- Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- Property Boundary
- Approximate Areal Extent Of The VOC Plume In Shallow Potentiometric Zone April 2001.
- \* Plume Extent Based On Third Quarter 1998 Data

**SHALLOW POTENTIOMETRIC FLOW MAP**

APRIL 30, 2001  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**LEGEND**

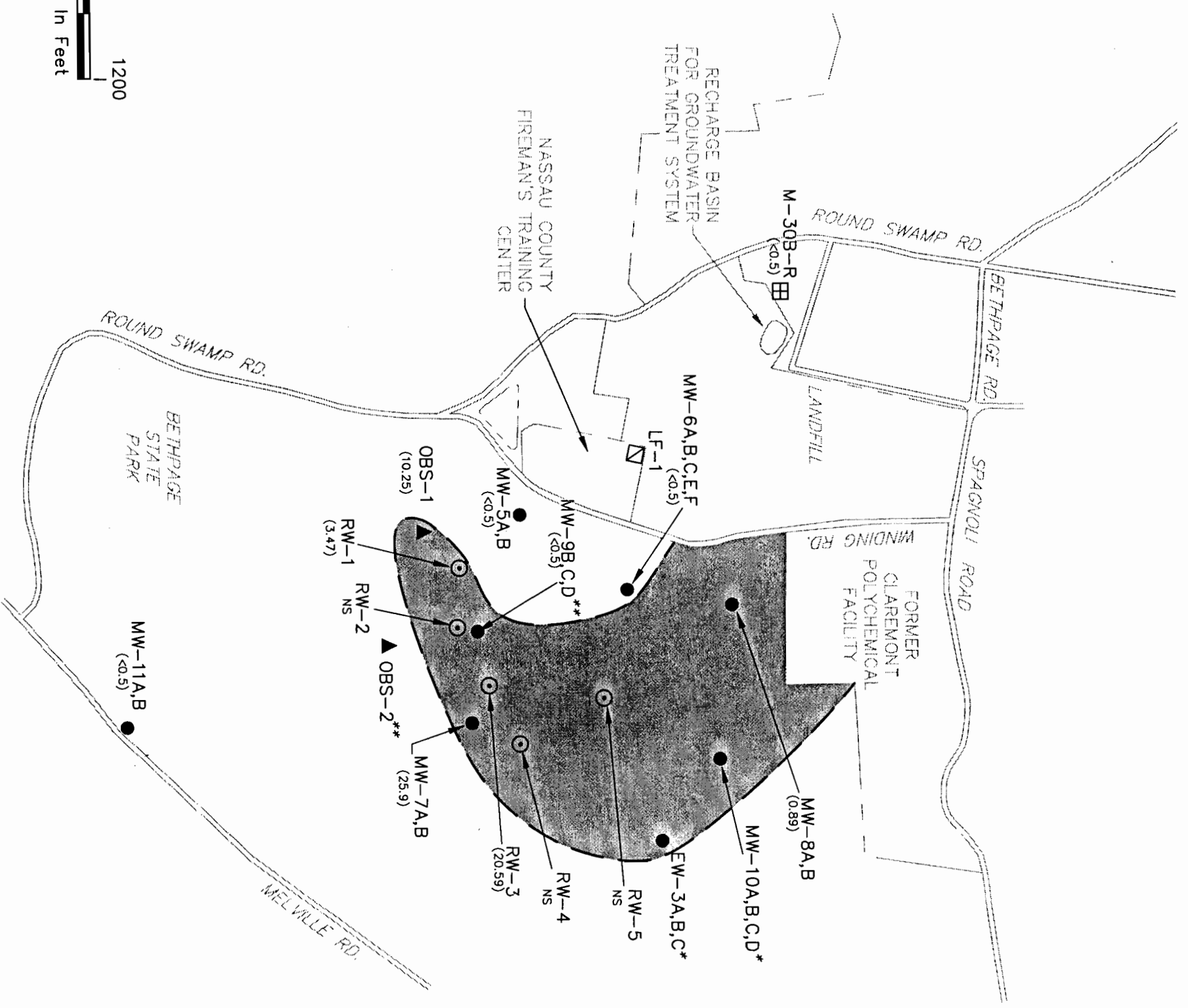
- MW-8C (63.61) Monitoring Well Location And Designation
- MW-6E (62.51) Water Level Elevation In Feet Above Mean Sea Level
- RW-4 (60.33) Recovery Well
- ▲ OBS-2 (58.37) Phase II Extension Well
- Property Boundary
- Limiting Flow Lines Depicting Estimated Effective Capture Zone
- Groundwater Flow Direction
- - - Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- Approximate Areal Extent Of The VOC Plume In The Deep Potentiometric Zone - April 2001
- \* Plume Extent Based On Third Quarter 1998 Data



**DEEP POTENTIOMETRIC FLOW MAP**

**APRIL 30, 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



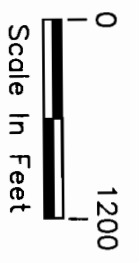


**LEGEND**

- MW-5B ● Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- RW-5 ⊙ Recovery Well
- OBS-2 ▲ Phase II Extension Well
- LF-1 ▣ Phase III Well
- M-29A-R ⊞ Upgradient Well
- Property Boundary
- ⬤ Approximate Areal Extent Of The Volatile Halogenated Organic Plume

**NOTE**

- \* Plume Extent Based On Third Quarter 1998 Data.
- \*\* Plume Extent Based On Third Quarter 2000 Data.
- NS - Recovery Well Off-line When Samples Were Collected.



**APPROXIMATE EXTENT  
AND DISTRIBUTION OF TOTAL  
VOLATILE HALOGENATED ORGANICS  
MAY 2001**

OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY

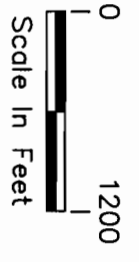


**LEGEND**

- MW-5B ● Monitoring Well Location And Total Aromatic Hydrocarbon Concentration, ppb (<1)
- RW-4 ○ Recovery Well
- OBS-1 ▲ Phase II Extension Well
- LF-1 ▣ Phase III Well
- M-29A-R ▤ Upgradient Well
- Property Boundary
- ◐ Approximate Areal Extent Of The Aromatic Hydrocarbon Plume

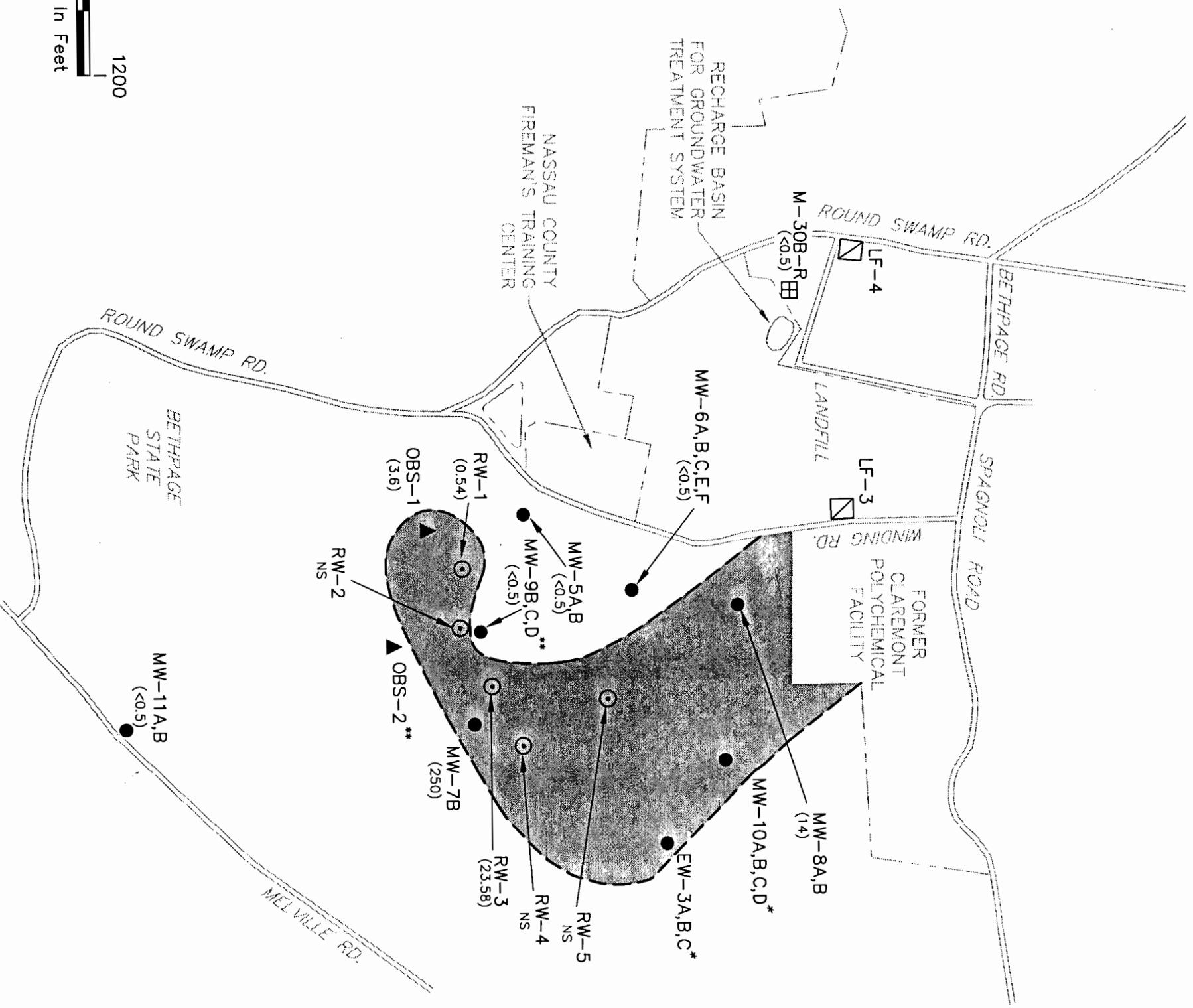
**NOTE**

- Plume Contour Is Based On Total Aromatic Hydrocarbon Concentrations In The Monitoring And Recovery Wells.
- \* Plume Extent Based On Third Quarter 1998 Data
- \*\* Plume Extent Based On Third Quarter 2000 Data
- NS - Recovery Well Off-line When Samples Were Collected.



**APPROXIMATE EXTENT AND DISTRIBUTION OF TOTAL AROMATIC HYDROCARBONS**

MAY 2001  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**Gannett Fleming**  
FIGURE 6

**LEGEND**

- MW-5B ● Monitoring Well Location And Tetrachloroethene Concentration, ppb (<0.5)
- RW-4 ⊙ Recovery Well
- OBS-1 ▲ Phase II Extension Well
- LF-3 ▣ Phase III Well
- M-29A-R ▤ Upgradient Well

- - - - - Property Boundary
- Approximate Areal Extent Of The Tetrachloroethene Plume

**NOTE**

Plume Contour Is Based On Tetrachloroethene Concentrations In The Monitoring And Recovery Wells.  
 \* Plume Extent Based On Third Quarter 1998 Data.  
 \*\* Plume Extent Based On Third Quarter 2000 Data.  
 NS - Recovery Well Off-line When Samples Were Collected.

**APPROXIMATE EXTENT AND DISTRIBUTION OF TETRACHLOROETHENE**

**MAY 2001**  
 OLD BETHPAGE LANDFILL  
 TOWN OF OYSTER BAY

TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - JULY 2, 2001

PERIOD: From 04/30/2001 thru 07/02/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
EW-02A	7/2/2001	157.14	00:00	94.03	NA	63.11
EW-02B	7/2/2001	157.61	00:00	94.35	NA	63.26
EW-02C	7/2/2001	157.54	00:00	94.35	NA	63.19
EW-03A	7/2/2001	159.24	00:00	97.89	NA	61.35
EW-03B	7/2/2001	159.36	00:00	98.20	NA	61.16
EW-03C	7/2/2001	159.25	00:00	98.05	NA	61.20
LF-1	4/30/2001	111.40	00:00	47.55	NA	63.85
LF-1	7/2/2001	111.40	00:00	48.14	-0.59	63.26
LF-2	4/30/2001	118.70	00:00	54.86	NA	63.84
LF-2	7/2/2001	118.70	00:00	54.98	-0.12	63.72
LF-3	4/30/2001	126.50	00:00	60.00	NA	66.50
LF-3	7/2/2001	126.50	00:00	60.40	-0.40	66.10
LF-4	4/30/2001	149.93	00:00	82.92	NA	67.01
LF-4	7/2/2001	149.93	00:00	83.26	-0.34	66.67
M-29A-R	4/30/2001	157.50	00:00	91.97	NA	65.53
M-29A-R	7/2/2001	157.50	00:00	92.54	-0.57	64.96
M-29B	4/30/2001	157.41	00:00	90.08	NA	67.33
M-29B	7/2/2001	157.41	00:00	90.62	-0.54	66.79
M-30A	4/30/2001	151.20	00:00	83.90	NA	67.30
M-30A	7/2/2001	151.20	00:00	84.25	-0.35	66.95
M-30B-R	4/30/2001	154.51	00:00	87.80	NA	66.71
M-30B-R	7/2/2001	154.51	00:00	88.25	-0.45	66.26
MW-05A	4/30/2001	137.13	00:00	74.71	NA	62.42
MW-05A	7/2/2001	137.13	00:00	75.20	-0.49	61.93
MW-05B	4/30/2001	138.43	00:00	75.98	NA	62.45
MW-05B	7/2/2001	138.43	00:00	76.48	-0.50	61.95
MW-06A	4/30/2001	160.24	00:00	97.66	NA	62.58
MW-06A	7/2/2001	160.24	00:00	98.33	-0.67	61.91
MW-06B	4/30/2001	160.39	00:00	98.10	NA	62.29
MW-06B	7/2/2001	160.39	00:00	98.68	-0.58	61.71
MW-06C	4/30/2001	159.99	00:00	97.57	NA	62.42
MW-06C	7/2/2001	159.99	00:00	100.01	-2.44	59.98

RW-2, -4, -5 were not pumping 4/30/01.  
D - Dry

TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - JULY 2, 2001

PERIOD: From 04/01/2001 thru 09/30/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
MW-06D	4/30/2001	160.39	00:00	97.82	NA	62.57
MW-06D	7/2/2001	160.39	00:00	98.52	-0.70	61.87
MW-06E	4/30/2001	160.88	00:00	98.37	NA	62.51
MW-06E	7/2/2001	160.88	00:00	99.15	-0.78	61.73
MW-06F	4/30/2001	159.88	00:00	97.64	NA	62.24
MW-06F	7/2/2001	159.88	00:00	98.48	-0.84	61.40
MW-07A	4/30/2001	148.44	00:00	88.20	NA	60.24
MW-07A	7/2/2001	148.44	00:00	89.32	-1.12	59.12
MW-07B	4/30/2001	147.94	00:00	89.05	NA	58.89
MW-07B	7/2/2001	147.94	00:00	90.70	-1.65	57.24
MW-08A	4/30/2001	134.94	00:00	72.42	NA	62.52
MW-08A	7/2/2001	134.94	00:00	71.98	0.44	62.96
MW-08B	4/30/2001	134.24	00:00	71.32	NA	62.92
MW-08B	7/2/2001	134.24	00:00	71.15	0.17	63.09
MW-08C	4/30/2001	135.72	00:00	72.11	NA	63.61
MW-08C	7/2/2001	135.72	00:00	72.70	-0.59	63.02
MW-09A	4/30/2001	153.35	00:00	D	NA	NA
MW-09A	7/2/2001	153.35	00:00	D	NA	NA
MW-09B	4/30/2001	153.28	00:00	93.25	NA	60.03
MW-09B	7/2/2001	153.28	00:00	94.80	-1.55	58.48
MW-09C	4/30/2001	153.53	00:00	94.07	NA	59.46
MW-09C	7/2/2001	153.53	00:00	96.05	-1.98	57.48
MW-09D	4/30/2001	152.95	00:00	94.35	NA	58.60
MW-09D	7/2/2001	152.95	00:00	94.75	-0.40	58.20
MW-10A	4/30/2001	161.28	00:00	98.45	NA	62.83
MW-10A	7/2/2001	161.28	00:00	98.96	-0.51	62.32
MW-10B	4/30/2001	161.12	00:00	98.54	NA	62.58
MW-10B	7/2/2001	161.12	00:00	99.30	-0.76	61.82
MW-10C	4/30/2001	160.27	00:00	97.62	NA	62.65
MW-10C	7/2/2001	160.27	00:00	98.50	-0.88	61.77
MW-10D	4/30/2001	161.17	00:00	99.63	NA	61.54
MW-10D	7/2/2001	161.17	00:00	99.62	0.01	61.55

RW-2, RW-4 and RW-5 were not pumping on 4/30/01.  
D - Dry

TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - JULY 2, 2001

PERIOD: From 04/01/2001 thru 09/30/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
MW-11A	4/30/2001	80.19	00:00	23.98	NA	56.21
MW-11A	7/2/2001	80.19	00:00	25.16	-1.18	55.03
MW-11B	4/30/2001	79.91	00:00	23.86	NA	56.05
MW-11B	7/2/2001	79.91	00:00	25.02	-1.16	54.89
N-9980	4/30/2001	80.46	00:00	31.55	NA	48.91
N-9980	7/2/2001	80.46	00:00	32.45	-0.90	48.01
OBS-1	4/30/2001	110.61	00:00	52.12	NA	58.49
OBS-1	7/2/2001	110.61	00:00	52.85	-0.73	57.76
OBS-2	4/30/2001	105.26	00:00	46.89	NA	58.37
OBS-2	7/2/2001	105.26	00:00	48.15	-1.26	57.11
RW-01	4/30/2001	110.94	00:00	61.33	NA	49.61
RW-01	7/2/2001	110.94	00:00	60.32	1.01	50.62
RW-02	4/30/2001	145.31	00:00	85.35	NA	59.96
RW-02	7/2/2001	145.31	00:00	96.65	-11.30	48.66
RW-03	4/30/2001	120.92	00:00	77.03	NA	43.89
RW-03	7/2/2001	120.92	00:00	74.28	2.75	46.64
RW-04	4/30/2001	144.82	00:00	84.49	NA	60.33
RW-04	7/2/2001	144.82	00:00	93.30	-8.81	51.52
RW-05	4/30/2001	149.74	00:00	87.96	NA	61.78
RW-05	7/2/2001	149.74	00:00	97.83	-9.87	51.91
TW-1	4/30/2001	121.12	00:00	52.84	NA	68.28
TW-1	7/2/2001	121.12	00:00	53.40	-0.56	67.72
TW-2	4/30/2001	117.52	00:00	53.41	NA	64.11
TW-2	7/2/2001	117.52	00:00	53.99	-0.58	63.53
TW-3-R	4/30/2001	133.93	00:00	70.31	NA	63.62
TW-3-R	7/2/2001	133.93	00:00	70.88	-0.57	63.05

RW-2, RW-4 and RW-5 were not pumping on 4/30/01.  
D - Dry

**TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK**

**TABLE 2**

**GROUNDWATER REMEDIATION SYSTEM PUMPAGE RECORDS**

**JULY THROUGH SEPTEMBER 2001**

<b>DATE</b>	<b>ESTIMATED AVERAGE SYSTEM FLOW (GPM)</b>	<b>COMMENTS</b>
July 1	827	RW-5 offline.
July 7	1013	RW-5 offline for 11 hours.
July 3 - September 30	1045	GTF on-line.

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	M-30B-R	MW-05B	MW-06A	MW-06B
	DATE	07/02/2001	07/05/2001	07/03/2001	07/03/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed



TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-06C 07/05/2001 Primary	MW-06C 07/05/2001 Duplicate 1	MW-06E 07/03/2001 Primary	MW-06F 07/03/2001 Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-07B 07/03/2001 Primary	MW-08A 07/05/2001 Primary	MW-08B 07/05/2001 Primary	MW-09B 07/03/2001 Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	19	0.60	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	19.00	0.60	0.00	0.00
---Not analyzed					

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-09C	MW-09D	MW-11A	MW-11B
	DATE	07/03/2001	07/05/2001	07/02/2001	07/02/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	1.1	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	9.6	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	9.7	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	7.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	14	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	0.6	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	1.3	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	1.6	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	4.1	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	50.00	0.00	0.00

---=Not analyzed

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	OBS-1 07/06/2001 Primary
1,1,1-Trichloroethane	(ug/l)	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5
1,1-Dichloroethane	(ug/l)	<0.5
1,1-Dichloroethene	(ug/l)	<0.5
1,2-Dichloroethane	(ug/l)	<0.5
1,2-Dichloropropane	(ug/l)	<0.5
2-Chloroethylvinyl ether	(ug/l)	3.1
Bromodichloromethane	(ug/l)	<0.5
Bromoform	(ug/l)	<0.5
Bromomethane	(ug/l)	<0.5
Carbon tetrachloride	(ug/l)	<0.5
Chlorodibromomethane	(ug/l)	<0.5
Chloroethane	(ug/l)	<0.5
Chloroform	(ug/l)	<0.5
Chloromethane	(ug/l)	<0.5
cis-1,2-Dichloroethene	(ug/l)	1.6
cis-1,3-Dichloropropene	(ug/l)	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5
Methylene chloride	(ug/l)	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5
Trichloroethylene	(ug/l)	<0.5
Trichlorofluoromethane	(ug/l)	<0.5
Vinyl chloride	(ug/l)	<0.5
Sum of Constituents	(ug/l)	4.70

---=Not analyzed

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 07/06/2001	TRIP BLANK 07/03/2001	TRIP BLANK 07/05/2001	TRIP BLANK 07/06/2001
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	M-30B-R 07/02/2001 Primary	MW-05B 07/05/2001 Primary	MW-06A 07/03/2001 Primary	MW-06B 07/03/2001 Primary	MW-06C 07/05/2001 Primary	MW-06C 07/05/2001 Duplicate 1
1,2-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	1.5	1.5	1.6
1,3-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	3.1	4.3	4.4
Benzene	(ug/l)	<0.5	<0.5	<0.5	3.6	1.9	2.0
Chlorobenzene	(ug/l)	<0.5	<0.5	<0.5	8.4	3.5	3.5
Ethylbenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	16.60	11.20	11.50

---=Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	RESULT TYPE	MW-06E 07/03/2001 Primary	MW-06F 07/03/2001 Primary	MW-07B 07/03/2001 Primary	MW-08A 07/05/2001 Primary	MW-08B 07/05/2001 Primary	MW-09B 07/03/2001 Primary
1,2-Dichlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Benzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)		0.00	0.00	0.00	0.00	0.00	0.00

---Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	MW-09C 07/03/2001	MW-09D 07/05/2001	MW-11A 07/02/2001	MW-11B 07/02/2001	OBS-1 07/06/2001
1,2-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5	0.6
1,3-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5	0.6
Benzene	(ug/l)	<0.5	13	<0.5	<0.5	<0.5
Chlorobenzene	(ug/l)	<0.5	3.9	<0.5	<0.5	0.5
Ethylbenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)	<0.5	9.9	<0.5	<0.5	<0.5
Toluene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	26.80	0.00	0.00	1.70

---=Not analyzed



TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 07/06/2001	TRIP BLANK 07/03/2001	TRIP BLANK 07/05/2001	TRIP BLANK 07/06/2001
1,2-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1 Benzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Toluene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE	DATE	RESULT TYPE	RESULT	DATE	RESULT TYPE	RESULT
Tetrachloroethylene	M-30B-R	07/02/2001	Primary	<0.5	07/03/2001	Primary	<0.5
Sum of Constituents	MW-05B	07/05/2001	Primary	0.00	07/03/2001	Primary	0.00
	MW-06A	07/03/2001	Primary	<0.5	07/03/2001	Primary	<0.5
	MW-06B	07/03/2001	Primary	<0.5	07/05/2001	Primary	<0.5
	MW-06C	07/05/2001	Primary	<0.5	07/05/2001	Duplicate 1	<0.5
				0.00			0.00

---=Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-06E	MW-06F	MW-07B	MW-08A	MW-08B	MW-09B
	DATE	07/03/2001	07/03/2001	07/03/2001	07/05/2001	07/05/2001	07/03/2001
	RESULT TYPE	Primary	Primary	Primary	Primary	Primary	Primary
	(ug/l)	<0.5	<0.5	150	11	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	150.00	11.00	0.00	0.00
Tetrachloroethylene (PCE)							

---=Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-09C	MW-09D	MW-11A	MW-11B	OBS-1
	DATE	07/03/2001	07/05/2001	07/02/2001	07/02/2001	07/06/2001
	(ug/l)	<0.5	2.3	<0.5	<0.5	0.8
Sum of Constituents	(ug/l)	0.00	2.30	0.00	0.00	0.80
Tetrachloroethylene (PCE)						
Sum of Constituents						

---Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 07/06/2001	TRIP BLANK 07/03/2001	TRIP BLANK 07/05/2001	TRIP BLANK 07/06/2001
Tetrachloroethylene (PCE)	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00
----Not analyzed					

**TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK**

**TABLE 6**

**RECOVERY WELL SAMPLING RESULTS - VOLATILE ORGANIC COMPOUNDS  
THIRD QUARTER SAMPLING ROUND - JULY 2001**

<b>SAMPLE DESIGNATION:</b>	<b>RW-1</b>	<b>RW-2</b>	<b>RW-3</b>	<b>RW-4</b>	<b>RW-5</b>
<b>SAMPLE COLLECTION DATE:</b>	<b>07/03/2001</b>	<b>07/03/2001</b>	<b>07/03/2001</b>	<b>07/03/2001</b>	<b>07/03/2001</b>
Benzene	0.52	0.69	1.30	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
Chlorobenzene	0.92	0.76	1.22	ND	ND
Chlorodibromomethane	ND	ND	ND	ND	ND
Chloroethane	ND	ND	0.56	ND	ND
Chloroform	ND	ND	ND	0.84	ND
o,p-Dichlorobenzene	3.10	2.15	2.93	ND	ND
m,o,p-Dichlorobenzene	3.10	2.15	2.93	ND	ND
1,1-Dichloroethane	0.71	0.54	1.78	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	2.56
1,1-Dichloroethene	ND	ND	ND	0.70	1.26
cis-1,2-Dichloroethene	1.92	1.32	12.15	8.22	136
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	23.28	30.54	515
Toluene	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	1.88	3.78
Trichloroethylene	ND	ND	2.58	38.87	124
Vinyl chloride	0.66	ND	1.05	ND	ND
o-Xylene	ND	ND	ND	ND	ND
m+p-Xylene	ND	ND	ND	ND	ND
Xylenes (total)	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND	ND
<b>Total VOCs</b>	<b>7.83</b>	<b>5.46</b>	<b>46.85</b>	<b>81.05</b>	<b>782.60</b>

Notes:

All concentrations in ug/L.

ND - Not detected

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	LF-1	M-30B-R	MW-05B	MW-06A
	DATE	07/06/2001	07/02/2001	07/05/2001	07/03/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
Alkalinity	(mg/l)	137	20.8	45.4	32.6
Aluminum	(mg/l)	---	<0.2	<0.2	<0.2
Ammonia (as N)	(mg/l)	11.3	<0.1	<0.1	<0.1
Barium	(mg/l)	---	<0.2	<0.2	<0.2
Bicarbonate (as CaCO3)	(mg/l)	137	20.8	45.4	32.6
Calcium	(mg/l)	---	14.4	10.7	1.56
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	148	104	89.6	8.2
Chromium	(mg/l)	---	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	---	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	56.0	72.0	84.0	12.0
Iron	(mg/l)	---	0.04	0.20	<0.02
Lead	(ug/l)	---	<5.0	<5.0	<5.0
Magnesium	(mg/l)	---	6.94	12.2	1.74
Manganese	(mg/l)	---	<0.02	2.31	0.07
Mercury	(ug/l)	---	<0.2	<0.2	<0.2
Nickel	(mg/l)	---	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	0.19	2.10	<0.1	1.80
Potassium	(mg/l)	---	8.58	7.73	3.05
Sodium	(mg/l)	---	46.6	51.9	5.00
Sulfate	(mg/l)	25.5	37.6	29.8	<5
Total Dissolved Solids	(mg/l)	810	313	346	57
Total Kjeldahl nitrogen (as N)	(mg/l)	11.9	<0.1	<0.1	<0.1
Total Phenols	(mg/l)	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	(mg/l)	---	<0.02	<0.02	<0.02

---=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-06B	MW-06C	MW-06C	MW-06E
	DATE	07/03/2001	07/05/2001	07/05/2001	07/03/2001
	RESULT TYPE	Primary	Primary	Duplicate 1	Primary
Alkalinity	(mg/l)	912	813	812	128
Aluminum	(mg/l)	<0.2	<0.2	<0.2	<0.2
Ammonia (as N)	(mg/l)	115	82.1	82.9	24.4
Barium	(mg/l)	<0.2	<0.2	<0.2	<0.2
Bicarbonate (as CaCO3)	(mg/l)	912	813	812	128
Calcium	(mg/l)	19.9	56.2	57.0	24.4
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	239	529	520	140
Chromium	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	<0.02	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	120	224	216	102
Iron	(mg/l)	17.9	14.4	14.6	0.86
Lead	(ug/l)	<5.0	<5.0	<5.0	<5.0
Magnesium	(mg/l)	20.1	16.1	16.3	11.9
Manganese	(mg/l)	0.20	0.23	0.23	0.60
Mercury	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel	(mg/l)	<0.04	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	0.16	<0.1	<0.1	<0.1
Potassium	(mg/l)	118	118	120	38.8
Sodium	(mg/l)	244	417	422	59.4
Sulfate	(mg/l)	9.3	49.5	51.2	29.3
Total Dissolved Solids	(mg/l)	73	1650	1730	449
Total Kjeldahl nitrogen (as N)	(mg/l)	124	74.0	99.3	23.5
Total Phenols	(mg/l)	0.0055	0.0069	0.0055	<0.0050
Zinc	(mg/l)	<0.02	<0.02	<0.02	0.02

---=Not analyzed



TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-06F	MW-07B	MW-08A	MW-08B
	DATE	07/03/2001	07/03/2001	07/05/2001	07/05/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
Alkalinity	(mg/l)	<1	3.9	32.3	11.8
Aluminum	(mg/l)	<0.2	<0.2	<0.2	<0.2
Ammonia (as N)	(mg/l)	0.16	<0.1	3.11	1.79
Barium	(mg/l)	<0.2	<0.2	<0.2	<0.2
Bicarbonate (as CaCO3)	(mg/l)	<1	3.9	32.3	11.8
Calcium	(mg/l)	27.5	3.98	8.45	36.2
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	152	26.7	80.0	295
Chromium	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	<0.02	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	102	20.0	40.0	146
Iron	(mg/l)	0.05	0.06	0.04	0.52
Lead	(ug/l)	<5.0	<5.0	<5.0	<5.0
Magnesium	(mg/l)	11.3	2.25	3.79	13.9
Manganese	(mg/l)	0.06	0.03	0.21	1.57
Mercury	(ug/l)	0.22	<0.2	<0.2	<0.2
Nickel	(mg/l)	<0.04	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	0.55	2.20	0.87	0.19
Potassium	(mg/l)	3.13	1.01	54.1	22.1
Sodium	(mg/l)	46.6	14.3	113	134
Sulfate	(mg/l)	<5	<5	168	70.0
Total Dissolved Solids	(mg/l)	522	99	507	803
Total Kjeldahl nitrogen (as N)	(mg/l)	0.30	<0.1	3.18	2.09
Total Phenols	(mg/l)	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	(mg/l)	19.4	<0.02	<0.02	0.08

--=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	MW-09B 07/03/2001	MW-09C 07/03/2001	MW-09D 07/05/2001	MW-11A 07/02/2001
Alkalinity	(mg/l)	10.4	16.2	<1	1.3
Aluminum	(mg/l)	<0.2	<0.2	0.96	<0.2
Ammonia (as N)	(mg/l)	0.45	14.0	1.77	<0.1
Barium	(mg/l)	<0.2	<0.2	0.30	<0.2
Bicarbonate (as CaCO3)	(mg/l)	10.4	16.2	<1	1.3
Calcium	(mg/l)	6.81	1.32	23.8	3.3
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	33.2	75.5	303	6.6
Chromium	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	0.03	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	35.0	13.0	140	15.0
Iron	(mg/l)	<0.02	0.07	1.25	0.02
Lead	(ug/l)	<5.0	<5.0	<5.0	<5.0
Magnesium	(mg/l)	3.75	2.00	18.2	1.89
Manganese	(mg/l)	0.09	0.05	0.16	<0.02
Mercury	(ug/l)	<0.2	<0.2	3.8	<0.2
Nickel	(mg/l)	<0.04	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	4.50	2.30	0.11	4.60
Potassium	(mg/l)	6.47	21.9	5.51	1.00
Sodium	(mg/l)	21.3	43.5	114	5.31
Sulfate	(mg/l)	23.2	29.3	<5	<5
Total Kjeldahl nitrogen (as N)	(mg/l)	0.59	17.5	1.96	<0.1
Total Phenols	(mg/l)	<0.0050	<0.0050	0.0055	<0.0050
Zinc	(mg/l)	<0.02	<0.02	0.08	<0.02

---=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	MW-11B 07/02/2001	OBS-1 07/06/2001
Alkalinity	(mg/l)	<1	45.7
Aluminum	(mg/l)	<0.2	<0.2
Ammonia (as N)	(mg/l)	<0.1	2.65
Barium	(mg/l)	<0.2	<0.2
Bicarbonate (as CaCO3)	(mg/l)	<1	45.7
Calcium	(mg/l)	1.09	15.5
Carbonate (as CaCO3)	(mg/l)	<1	<1
Chloride	(mg/l)	4.0	100
Chromium	(mg/l)	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02
Copper	(mg/l)	<0.02	<0.02
Cyanide	(ug/l)	<10	<10
Hardness (as CaCO3)	(mg/l)	5.0	110
Iron	(mg/l)	<0.02	0.04
Lead	(ug/l)	<5.0	<5.0
Magnesium	(mg/l)	0.55	13.4
Manganese	(mg/l)	<0.02	0.88
Mercury	(ug/l)	<0.2	<0.2
Nickel	(mg/l)	<0.04	<0.04
Nitrate (as N)	(mg/l)	0.95	0.24
Potassium	(mg/l)	0.63	8.70
Sodium	(mg/l)	3.47	78.6
Sulfate	(mg/l)	<5	77.5
Total Kjeldahl nitrogen (as N)	(mg/l)	<0.1	2.96
Total Phenols	(mg/l)	<0.0050	<0.0050
Zinc	(mg/l)	<0.02	<0.02

---Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 07/06/2001
Alkalinity	(mg/l)	<1
Aluminum	(mg/l)	<0.2
Ammonia (as N)	(mg/l)	<0.1
Barium	(mg/l)	<0.2
Bicarbonate (as CaCO3)	(mg/l)	<1
Calcium	(mg/l)	<0.2
Carbonate (as CaCO3)	(mg/l)	<1
Chloride	(mg/l)	<2
Chromium	(mg/l)	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02
Copper	(mg/l)	<0.02
Cyanide	(ug/l)	<10
Hardness (as CaCO3)	(mg/l)	<5
Iron	(mg/l)	<0.02
Lead	(ug/l)	<5.0
Magnesium	(mg/l)	<0.2
Manganese	(mg/l)	<0.02
Mercury	(ug/l)	<0.2
Nickel	(mg/l)	<0.04
Nitrate (as N)	(mg/l)	<0.1
Potassium	(mg/l)	<0.2
Sodium	(mg/l)	<0.2
Sulfate	(mg/l)	<5
Total Dissolved Solids	(mg/l)	10
Total Kjeldahl nitrogen (as N)	(mg/l)	<0.1
Total Phenols	(mg/l)	<0.0050
Zinc	(mg/l)	<0.02

---=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	M-30B-R 07/02/2001 Primary	MW-05B 07/05/2001 Primary	MW-06A 07/03/2001 Primary	MW-06B 07/03/2001 Primary
Aluminum (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Barium (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Calcium (Dissolved)	(mg/l)	16.2	10.2	1.72	17.1
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	0.07
Iron (Dissolved)	(mg/l)	0.02	<0.02	0.03	0.07
Lead (Dissolved)	(ug/l)	<5.0	<5.0	<5.0	<5.0
Magnesium (Dissolved)	(mg/l)	7.66	12.0	1.76	17.2
Manganese (Dissolved)	(mg/l)	<0.02	2.22	0.06	0.15
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	9.12	7.75	3.03	99.6
Sodium (Dissolved)	(mg/l)	50.7	51.9	5.24	203
Zinc (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	0.04

---=Not analyzed

TABLE 6  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-06C	MW-06C	MW-06E	MW-06F
	DATE	07/05/2001	07/05/2001	07/03/2001	07/03/2001
	RESULT TYPE	Primary	Duplicate 1	Primary	Primary
Aluminum (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Barium (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Calcium (Dissolved)	(mg/l)	53.4	52.7	19.8	24.7
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	0.06	<0.02
Iron (Dissolved)	(mg/l)	0.13	0.14	0.04	0.05
Lead (Dissolved)	(ug/l)	<5.0	<5.0	<5.0	<5.0
Magnesium (Dissolved)	(mg/l)	15.9	15.8	9.68	9.89
Manganese (Dissolved)	(mg/l)	0.21	0.21	0.47	0.05
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	119	118	31.6	3.13
Sodium (Dissolved)	(mg/l)	420	417	49.2	40.7
Zinc (Dissolved)	(mg/l)	<0.02	<0.02	0.05	0.03

---Not analyzed

TABLE 6  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-07B	MW-08A	MW-08B	MW-09B
	DATE	07/03/2001	07/05/2001	07/05/2001	07/03/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
Aluminum (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Barium (Dissolved)	(mg/l)	<0.2	<0.2	<0.2	<0.2
Calcium (Dissolved)	(mg/l)	4.50	<0.2	36.4	6.77
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	0.03
Iron (Dissolved)	(mg/l)	0.03	<0.02	<0.02	<0.02
Lead (Dissolved)	(ug/l)	<5.0	<5.0	<5.0	<5.0
Magnesium (Dissolved)	(mg/l)	2.42	<0.2	14.1	3.70
Manganese (Dissolved)	(mg/l)	0.03	<0.02	1.59	0.08
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	1.15	<0.2	22.7	6.54
Sodium (Dissolved)	(mg/l)	14.9	0.76	137	20.8
Zinc (Dissolved)	(mg/l)	0.03	<0.02	0.09	<0.02

---=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	MW-09C 07/03/2001	MW-09D 07/05/2001	MW-11A 07/02/2001	MW-11B 07/02/2001
Aluminum (Dissolved)	(mg/l)	<0.2	0.82	<0.2	<0.2
Barium (Dissolved)	(mg/l)	<0.2	0.28	<0.2	<0.2
Calcium (Dissolved)	(mg/l)	1.61	22.7	4.07	1.20
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	0.02	<0.02	<0.02
Iron (Dissolved)	(mg/l)	0.03	0.93	0.05	<0.02
Lead (Dissolved)	(ug/l)	<5.0	<5.0	<5.0	<5.0
Magnesium (Dissolved)	(mg/l)	2.14	17.4	2.10	0.54
Manganese (Dissolved)	(mg/l)	0.04	0.19	<0.02	<0.02
Mercury (Dissolved)	(ug/l)	<0.2	2.5	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	23.1	5.67	1.09	0.56
Sodium (Dissolved)	(mg/l)	46.3	109	8.88	3.57
Zinc (Dissolved)	(mg/l)	<0.02	0.09	0.02	<0.02
---=Not analyzed					



TABLE 0  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	OBS-1 07/06/2001
Aluminum (Dissolved)	(mg/l)	<0.2
Barium (Dissolved)	(mg/l)	<0.2
Calcium (Dissolved)	(mg/l)	15.1
Chromium (Dissolved)	(mg/l)	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02
Copper (Dissolved)	(mg/l)	<0.02
Iron (Dissolved)	(mg/l)	0.03
Lead (Dissolved)	(ug/l)	<5.0
Magnesium (Dissolved)	(mg/l)	13.4
Manganese (Dissolved)	(mg/l)	0.89
Mercury (Dissolved)	(ug/l)	<0.2
Nickel (Dissolved)	(mg/l)	<0.04
Potassium (Dissolved)	(mg/l)	8.68
Sodium (Dissolved)	(mg/l)	78.3
Zinc (Dissolved)	(mg/l)	<0.02

---=Not analyzed

TABLE 0  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

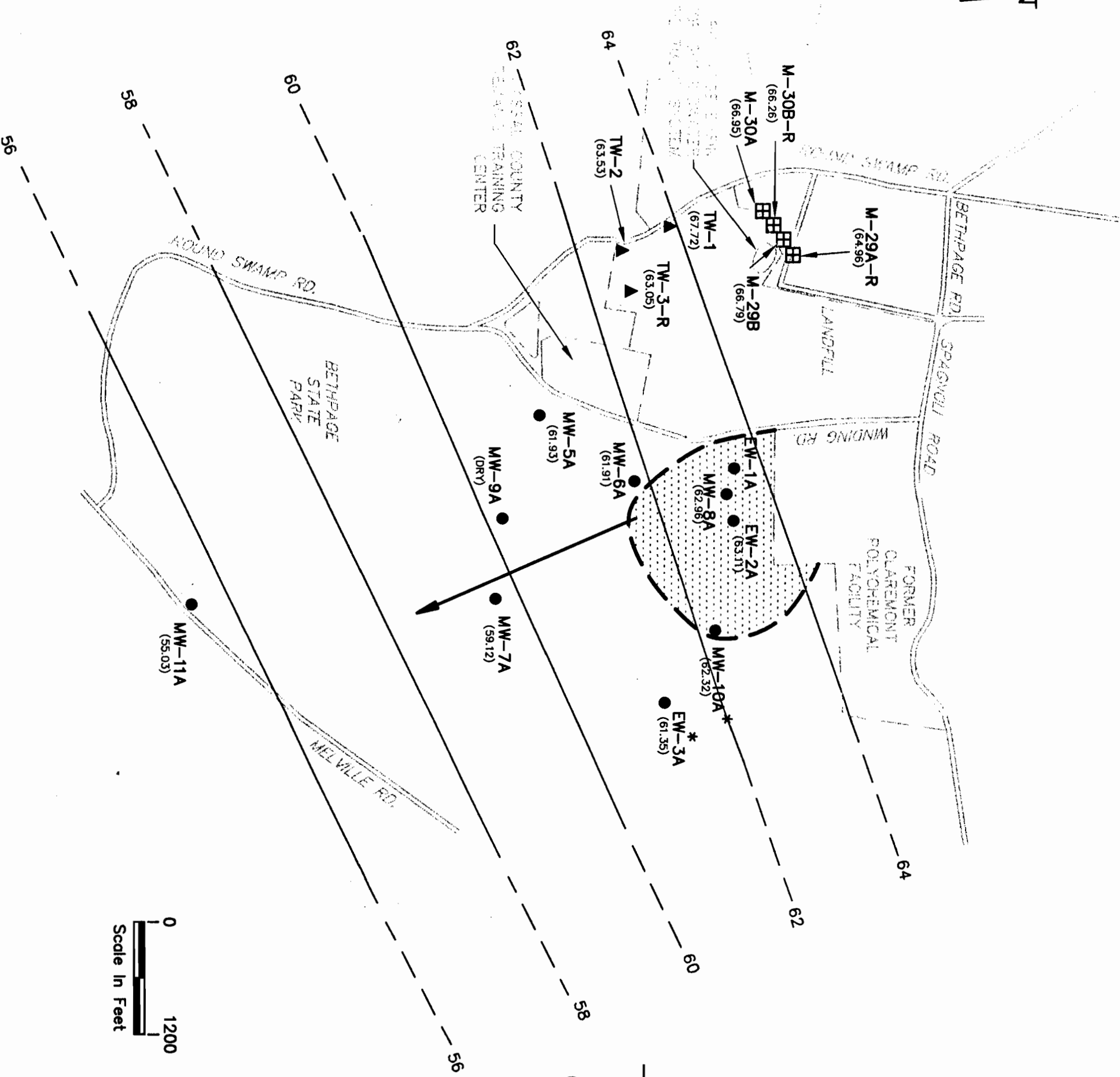
GROUNDWATER ANALYTICAL RESULTS - JULY 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 07/01/2001 thru 09/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 07/06/2001
Aluminum (Dissolved)	(mg/l)	<0.2
Barium (Dissolved)	(mg/l)	<0.2
Calcium (Dissolved)	(mg/l)	<0.2
Chromium (Dissolved)	(mg/l)	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02
Copper (Dissolved)	(mg/l)	<0.02
Iron (Dissolved)	(mg/l)	<0.02
Lead (Dissolved)	(ug/l)	<5.0
Magnesium (Dissolved)	(mg/l)	<0.2
Manganese (Dissolved)	(mg/l)	<0.02
Mercury (Dissolved)	(ug/l)	<0.2
Nickel (Dissolved)	(mg/l)	<0.04
Potassium (Dissolved)	(mg/l)	<0.2
Sodium (Dissolved)	(mg/l)	0.58
Zinc (Dissolved)	(mg/l)	<0.02

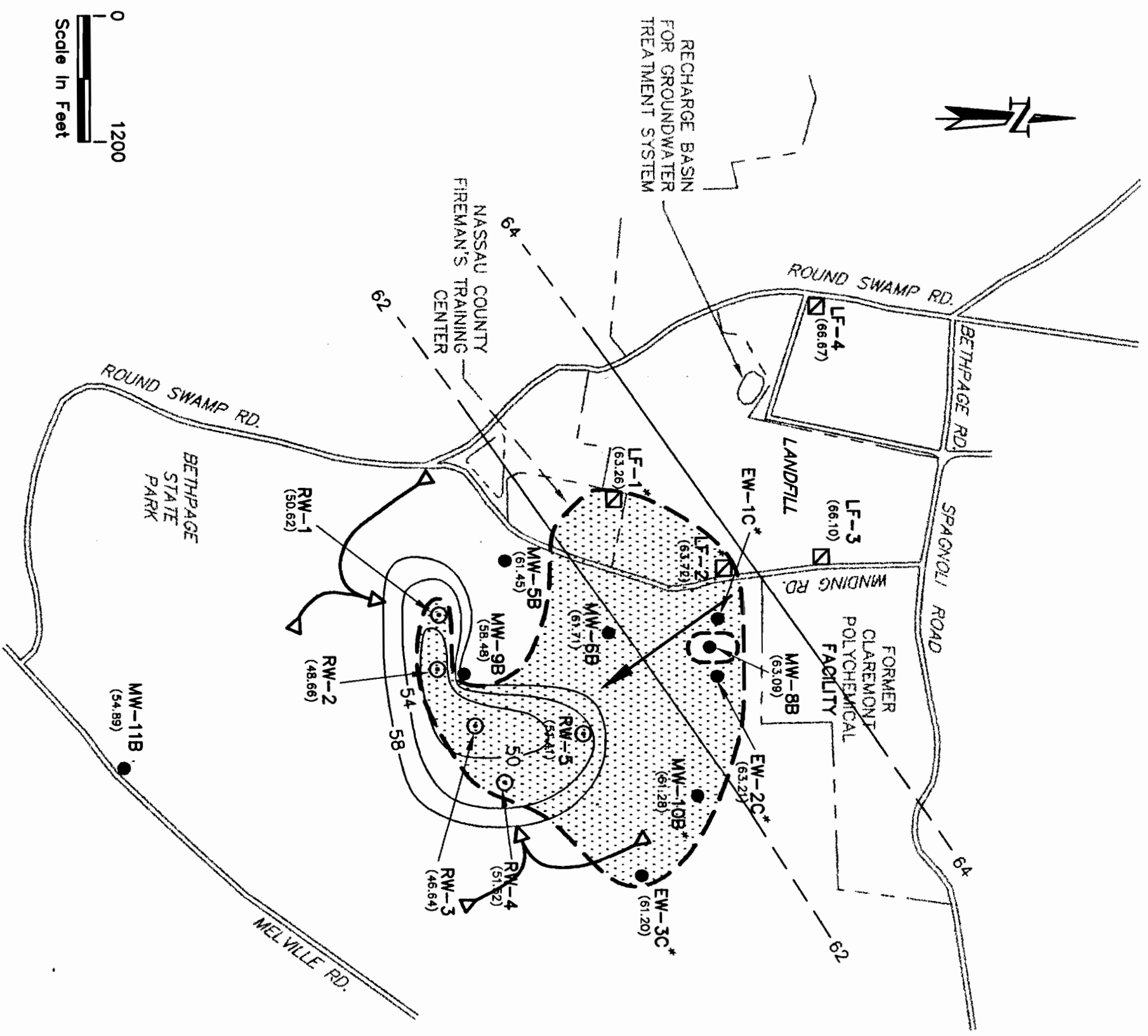
---=Not analyzed



**LEGEND**

- MW-5A (62.42)  
Monitoring Well Location And Designation
- Water Level Elevation In Feet Above Mean Sea Level
- ▲ TW-2  
Phase II Extension Well
- ▣ M-29A  
Upgradient Well
- Property Boundary
- Groundwater Flow Direction
- - -  
Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- (shaded)  
Approximate Areal Extent Of The VOC Plume In Water Table Wells - July 2001
- \*  
Plume Extent Based On Third Quarter 1998 Data.

**WATER TABLE  
FLOW MAP  
JULY 2, 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY

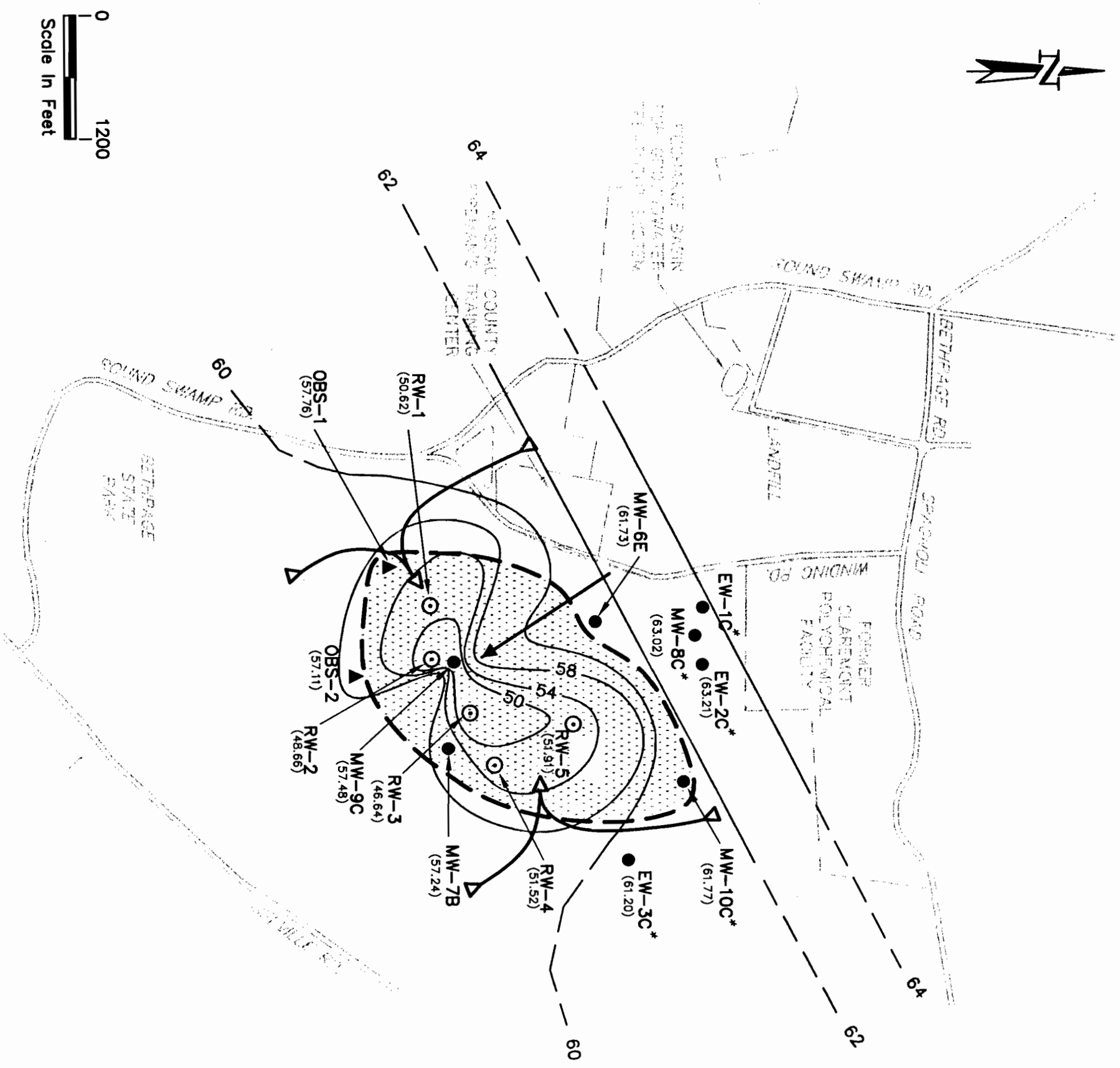


**LEGEND**

- MW-5B ● Monitoring Well Location And Designation  
Water Level Elevation In Feet Above Mean Sea Level (62.45)
- RW-5 ○ Recovery Well
- LF-2 □ Phase III Well
- Limiting Flow Lines Depicting Estimated Effective Capture Zones
- Groundwater Flow Direction
- Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- Property Boundary
- Approximate Areal Extent Of The VOC Plume In Shallow Potentiometric Zone July 2001.
- \* Plume Extent Based On Third Quarter 1998 Data

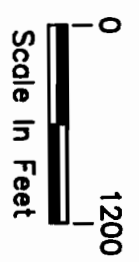
**SHALLOW POTENTIOMETRIC FLOW MAP**

**JULY 2, 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY

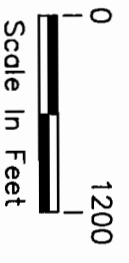
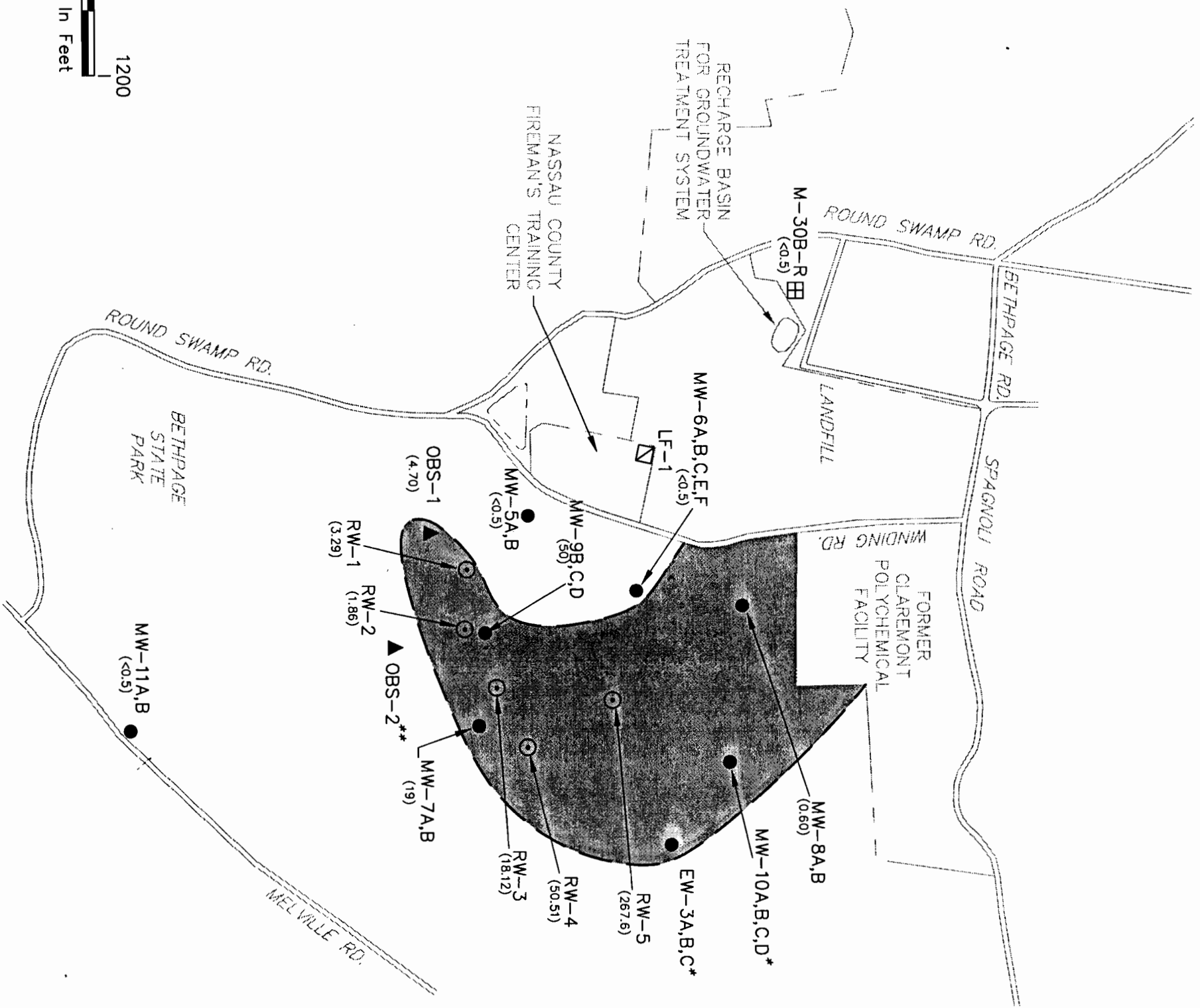


**LEGEND**

- MW-8C (63.61) Monitoring Well Location And Designation
- MW-8C (63.61) Water Level Elevation In Feet Above Mean Sea Level
- RW-4 Recovery Well
- ▲ OBS-2 Phase II Extension Well
- Property Boundary
- Limiting Flow Lines Depicting Estimated Effective Capture Zone
- Groundwater Flow Direction
- - - Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- ⊖ Approximate Areal Extent Of The VOC Plume In The Deep Potentiometric Zone - July 2001
- \* Plume Extent Based On Third Quarter 1998 Data



**DEEP POTENTIOMETRIC  
FLOW MAP  
JULY 2, 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**LEGEND**

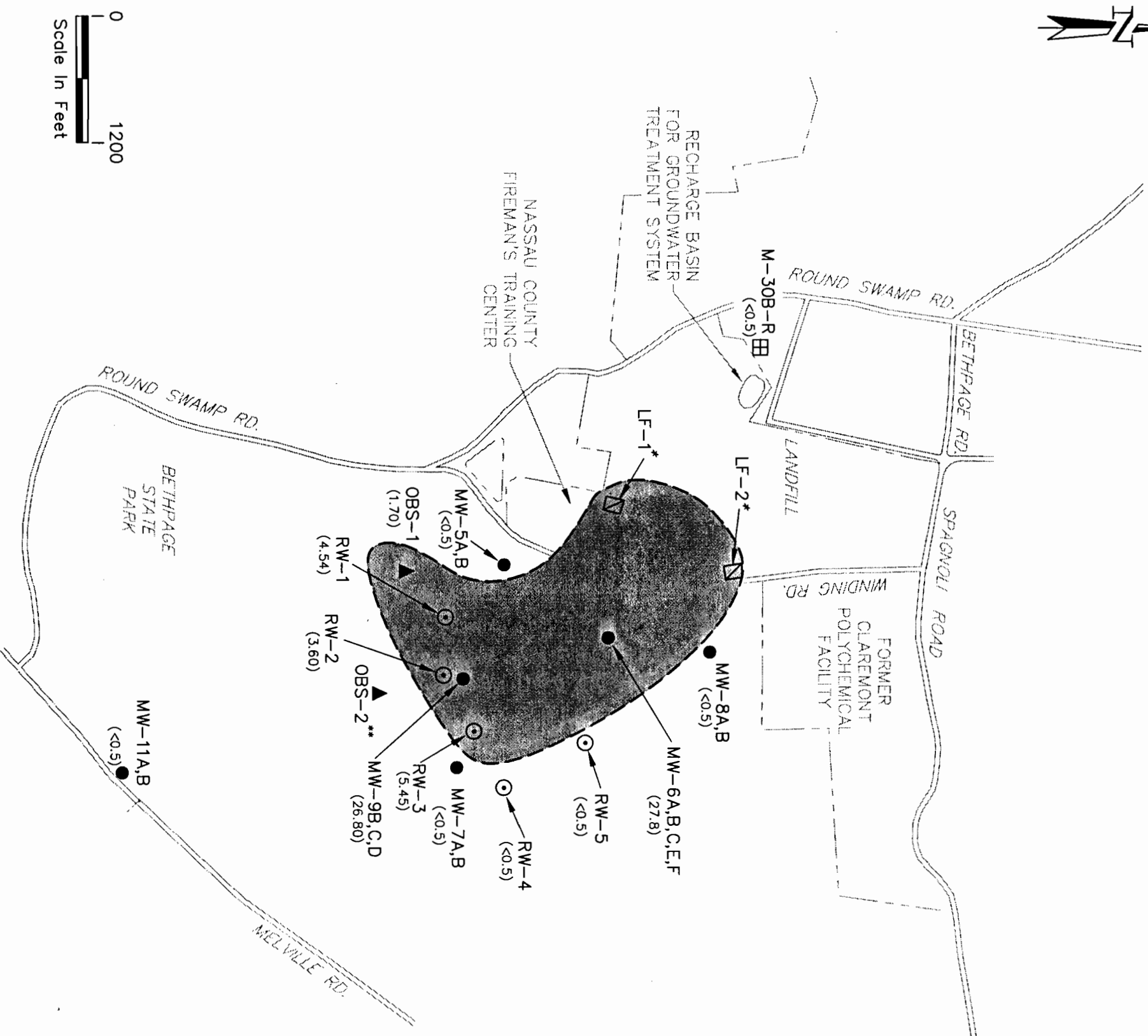
- MW-5B ● Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- RW-5 ○ Recovery Well
- OBS-2 ▲ Phase II Extension Well
- LF-1 ▣ Phase III Well
- M-29A-R ▤ Upgradient Well
- Property Boundary
- ◐ Approximate Areal Extent Of The Volatile Halogenated Organic Plume

**NOTE**

- \* Plume Contour Is Based On Total Volatile Halogenated Organics Concentrations In The Monitoring And Recovery Wells.
- \* Plume Extent Based On Third Quarter 1998 Data.
- \*\* Plume Extent Based On Third Quarter 2000 Data.
- NS - Recovery Well Off-line When Samples Were Collected.

**APPROXIMATE EXTENT  
AND DISTRIBUTION OF TOTAL  
VOLATILE HALOGENATED ORGANICS  
JULY 2001**

OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**LEGEND**

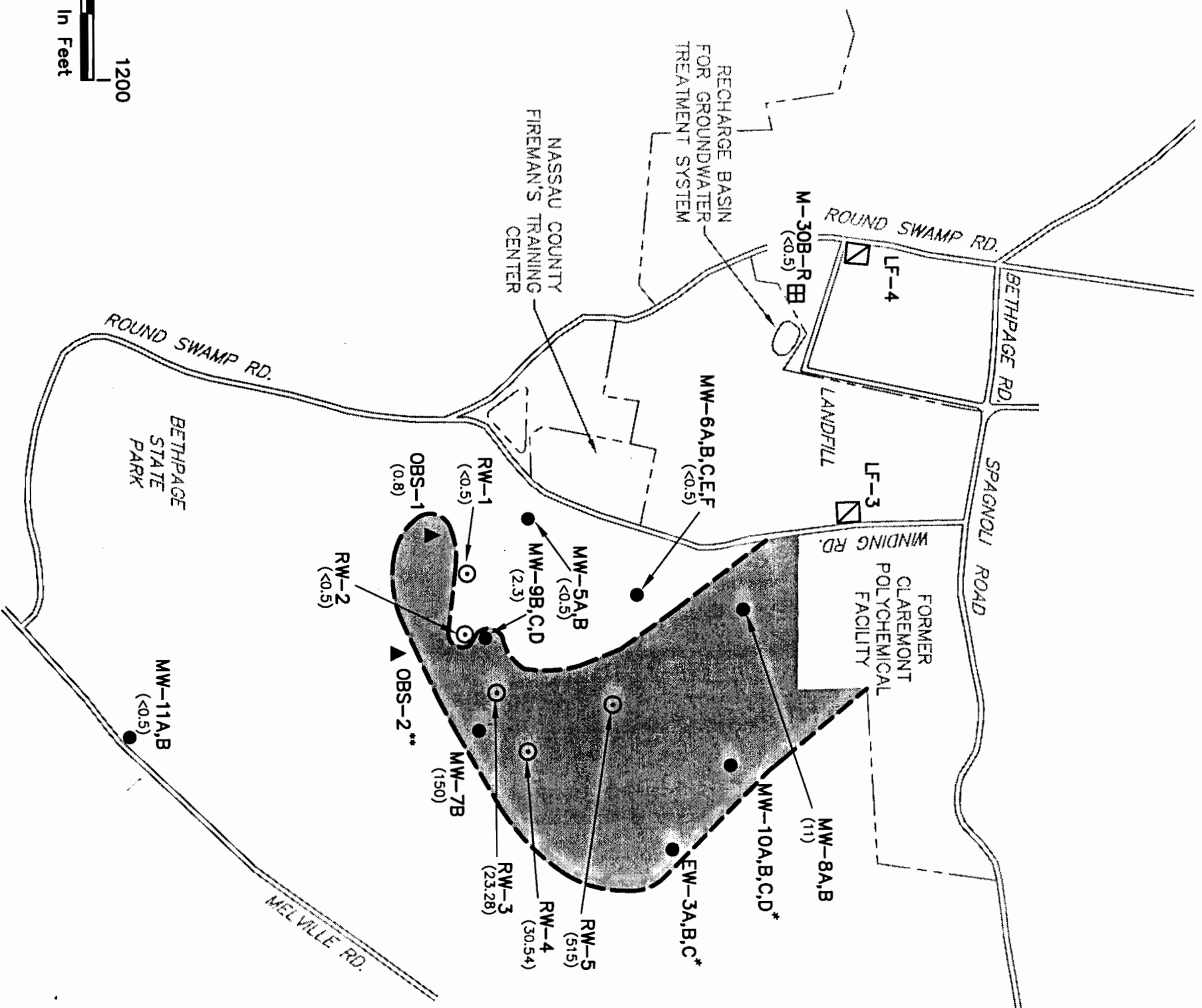
- MW-5B ● Monitoring Well Location And Total Aromatic Hydrocarbon Concentration, ppb (<1)
- RW-4 ○ Recovery Well
- OBS-1 ▲ Phase II Extension Well
- LF-1 ▣ Phase III Well
- M-29A-R ▤ Upgradient Well
- Property Boundary
- ◻ Approximate Areal Extent Of The Aromatic Hydrocarbon Plume

**NOTE**

- \* Plume Contour Is Based On Total Aromatic Hydrocarbon Concentrations In The Monitoring And Recovery Wells.
- \* Plume Extent Based On Third Quarter 1998 Data
- \*\* Plume Extent Based On Third Quarter 2000 Data
- NS - Recovery Well Off-line When Samples Were Collected.

**APPROXIMATE EXTENT  
AND DISTRIBUTION OF TOTAL  
AROMATIC HYDROCARBONS**

**JULY 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**LEGEND**

- MW-5B ● Monitoring Well Location And Tetrachloroethene Concentration, ppb
- RW-4 ○ Recovery Well
- OBS-1 ▲ Phase II Extension Well
- LF-3 □ Phase III Well
- M-29A-R ⊞ Upgradient Well
- Property Boundary
- (shaded) Approximate Areal Extent Of The Tetrachloroethene Plume

**NOTE**

Plume Contour Is Based On Tetrachloroethene Concentrations In The Monitoring And Recovery Wells.  
 \* Plume Extent Based On Third Quarter 1998 Data.  
 NS - Recovery Well Off-line When Samples Were Collected.



**APPROXIMATE EXTENT  
AND DISTRIBUTION  
OF TETRACHLOROETHENE  
JULY 2001  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY**



TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - OCTOBER 1, 2001

PERIOD: From 07/02/2001 thru 10/01/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
EW-01A	10/1/2001	130.09	00:00	68.32	NA	61.77
EW-01B	10/1/2001	130.65	00:00	68.84	NA	61.81
EW-01C	10/1/2001	130.60	00:00	68.50	NA	62.10
EW-02A	7/2/2001	157.14	00:00	94.03	NA	63.11
EW-02A	10/1/2001	157.14	00:00	96.14	-2.11	61.00
EW-02B	7/2/2001	157.61	00:00	94.35	NA	63.26
EW-02B	10/1/2001	157.61	00:00	96.41	-2.06	61.20
EW-02C	7/2/2001	157.54	00:00	94.35	NA	63.19
EW-02C	10/1/2001	157.54	00:00	96.52	-2.17	61.02
EW-03A	7/2/2001	159.24	00:00	97.89	NA	61.35
EW-03A	10/1/2001	159.24	00:00	99.91	-2.02	59.33
EW-03B	7/2/2001	159.36	00:00	98.20	NA	61.16
EW-03B	10/1/2001	159.36	00:00	99.98	-1.78	59.38
EW-03C	7/2/2001	159.25	00:00	98.05	NA	61.20
EW-03C	10/1/2001	159.25	00:00	99.85	-1.80	59.40
LF-1	7/2/2001	111.40	00:00	48.14	NA	63.26
LF-1	10/1/2001	111.40	00:00	49.65	-1.51	61.75
LF-2	7/2/2001	118.70	00:00	54.98	NA	63.72
LF-2	10/1/2001	118.70	00:00	56.62	-1.64	62.08
LF-3	7/2/2001	126.50	00:00	60.40	NA	66.10
LF-3	10/1/2001	126.50	00:00	60.26	0.14	66.24
LF-4	7/2/2001	149.93	00:00	83.26	NA	66.67
LF-4	10/1/2001	149.93	00:00	84.40	-1.14	65.53
M-29A-R	7/2/2001	157.50	00:00	92.54	NA	64.96
M-29A-R	10/1/2001	157.50	00:00	93.64	-1.10	63.86
M-29B	7/2/2001	157.41	00:00	90.62	NA	66.79
M-29B	10/1/2001	157.41	00:00	91.81	-1.19	65.60
M-30A	7/2/2001	151.20	00:00	84.25	NA	66.95
M-30A	10/1/2001	151.20	00:00	85.72	-1.47	65.48
M-30B-R	7/2/2001	154.51	00:00	88.25	NA	66.26
M-30B-R	10/1/2001	154.51	00:00	89.49	-1.24	65.02
MW-05A	7/2/2001	137.13	00:00	75.20	NA	61.93
D - Dry						

TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - OCTOBER 1, 2001

PERIOD: From 07/02/2001 thru 10/01/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
MW-05A	10/1/2001	137.13	00:00	77.04	-1.84	60.09
MW-05B	7/2/2001	138.43	00:00	76.48	NA	61.95
MW-05B	10/1/2001	138.43	00:00	76.33	0.15	62.10
MW-06A	7/2/2001	160.24	00:00	98.33	NA	61.91
MW-06A	10/1/2001	160.24	00:00	101.09	-2.76	59.15
MW-06B	7/2/2001	160.39	00:00	98.68	NA	61.71
MW-06B	10/1/2001	160.39	00:00	100.45	-1.77	59.94
MW-06C	7/2/2001	159.99	00:00	100.01	NA	59.98
MW-06C	10/1/2001	159.99	00:00	100.01	0.00	59.98
MW-06D	7/2/2001	160.39	00:00	98.52	NA	61.87
MW-06D	10/1/2001	160.39	00:00	100.23	-1.71	60.16
MW-06E	7/2/2001	160.88	00:00	99.15	NA	61.73
MW-06E	10/1/2001	160.88	00:00	100.87	-1.72	60.01
MW-06F	7/2/2001	159.88	00:00	98.48	NA	61.40
MW-06F	10/1/2001	159.88	00:00	99.92	-1.44	59.96
MW-07A	7/2/2001	148.44	00:00	89.32	NA	59.12
MW-07A	10/1/2001	148.44	00:00	91.48	-2.16	56.96
MW-07B	7/2/2001	147.94	00:00	90.70	NA	57.24
MW-07B	10/1/2001	147.94	00:00	92.43	-1.73	55.51
MW-08A	7/2/2001	134.94	00:00	71.98	NA	62.96
MW-08A	10/1/2001	134.94	00:00	74.52	-2.54	60.42
MW-08B	7/2/2001	134.24	00:00	71.15	NA	63.09
MW-08B	10/1/2001	134.24	00:00	74.35	-3.20	59.89
MW-08C	7/2/2001	135.72	00:00	72.70	NA	63.02
MW-08C	10/1/2001	135.72	00:00	74.09	-1.39	61.63
MW-09A	7/2/2001	153.35	00:00	D	NA	NA
MW-09A	10/1/2001	153.35	00:00	D	NA	NA
MW-09B	7/2/2001	153.28	00:00	94.80	NA	58.48
MW-09B	10/1/2001	153.28	00:00	96.48	-1.68	56.80
MW-09C	7/2/2001	153.53	00:00	96.05	NA	57.48
MW-09C	10/1/2001	153.53	00:00	97.82	-1.77	55.71
MW-09D	7/2/2001	152.95	00:00	94.75	NA	58.20
MW-09D	10/1/2001	152.95	00:00	96.25	-1.50	56.70
D - Dry						

TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - OCTOBER 1, 2001

PERIOD: From 07/02/2001 thru 10/01/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
MW-10A	7/2/2001	161.28	00:00	98.96	NA	62.32
MW-10A	10/1/2001	161.28	00:00	100.75	-1.79	60.53
MW-10B	7/2/2001	161.12	00:00	99.30	NA	61.82
MW-10B	10/1/2001	161.12	00:00	101.00	-1.70	60.12
MW-10C	7/2/2001	160.27	00:00	98.50	NA	61.77
MW-10C	10/1/2001	160.27	00:00	100.05	-1.55	60.22
MW-10D	7/2/2001	161.17	00:00	99.62	NA	61.55
MW-10D	10/1/2001	161.17	00:00	101.05	-1.43	60.12
MW-11A	7/2/2001	80.19	00:00	25.16	NA	55.03
MW-11A	10/1/2001	80.19	00:00	27.61	-2.45	52.58
MW-11B	7/2/2001	79.91	00:00	25.02	NA	54.89
MW-11B	10/1/2001	79.91	00:00	27.43	-2.41	52.48
N-9980	7/2/2001	80.46	00:00	32.45	NA	48.01
N-9980	10/1/2001	80.46	00:00	34.02	-1.57	46.44
OBS-1	7/2/2001	110.61	00:00	52.85	NA	57.76
OBS-1	10/1/2001	110.61	00:00	53.93	-1.08	56.68
OBS-2	7/2/2001	105.26	00:00	48.15	NA	57.11
OBS-2	10/1/2001	105.26	00:00	50.05	-1.90	55.21
RW-01	7/2/2001	110.94	00:00	60.32	NA	50.62
RW-01	10/1/2001	110.94	00:00	62.94	-2.62	48.00
RW-02	7/2/2001	145.31	00:00	96.65	NA	48.66
RW-02	10/1/2001	145.31	00:00	98.72	-2.07	46.59
RW-03	7/2/2001	120.92	00:00	74.28	NA	46.64
RW-03	10/1/2001	120.92	00:00	76.63	-2.35	44.29
RW-04	7/2/2001	144.82	00:00	93.30	NA	51.52
RW-04	10/1/2001	144.82	00:00	95.27	-1.97	49.55
RW-05	7/2/2001	149.74	00:00	97.83	NA	51.91
RW-05	10/1/2001	149.74	00:00	99.70	-1.87	50.04
TW-1	7/2/2001	121.12	00:00	53.40	NA	67.72
TW-1	10/1/2001	121.12	00:00	54.98	-1.58	66.14
TW-2	7/2/2001	117.52	00:00	53.99	NA	63.53
TW-2	10/1/2001	117.52	00:00	55.38	-1.39	62.14
D - Dry						

TABLE 1  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - OCTOBER 1, 2001

PERIOD: From 07/02/2001 thru 10/01/2001 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
TW-3-R	7/2/2001	133.93	00:00	70.88	NA	63.05
TW-3-R	10/1/2001	133.93	00:00	72.28	-1.40	61.65

D - Dry

**TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL  
OLD BETHPAGE, NEW YORK**

**TABLE 2**

**GROUNDWATER REMEDIATION SYSTEM PUMPAGE RECORDS**

**OCTOBER THROUGH DECEMBER 2001**

<b>DATE</b>	<b>ESTIMATED AVERAGE SYSTEM FLOW (GPM)</b>	<b>COMMENTS</b>
10/1 - 10/7	1022	GTF on-line
10/08	991	GTF off-line 0.5 hr; RW-3 off-line 3.5 hrs
10/09	860	RW-3 off-line; RW-1 off-line 9 hrs
10/10	771	RW-1 off-line 19 hrs; RW-3 off-line
10/11	848	RW-1 off-line 15 hrs; RW-3 off-line 15 hrs
10/12 - 11/2	1047	GTF on-line
11/03	950	GTF off-line 1 hr
11/4 - 11/13	1039	GTF on-line
11/14	1044	GTF off-line 0.25 hr
11/15 - 12/3	1024	GTF on-line
12/04	1058	GTF off-line 1 hr
12/05	355	GTF off-line 16 hr
12/6 - 12/20	0	GTF off-line
12/21	499	GTF off-line 12 hr
12/22 - 12/24	979	GTF on-line
12/25	0	GTF off-line
12/26	1144	GTF on-line
12/27	900	RW-1 off-line 7 hrs
12/28 - 12/30	918	RW-1 off-line
12/31	1077	RW-1 off-line 11 hrs

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	M-30B-R 10/02/2001 Primary	MW-05B 10/02/2001 Primary	MW-06A 10/03/2001 Primary	MW-06B 10/03/2001 Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-06C	MW-06E	MW-06F	MW-06F
	DATE	10/03/2001	10/03/2001	10/03/2001	10/03/2001
	RESULT TYPE	Primary	Primary	Primary	Duplicate 1
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-07B 10/02/2001 Primary	MW-08A 10/03/2001 Primary	MW-08B 10/03/2001 Primary	MW-09B 10/02/2001 Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	24	0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	24.00	0.50	0.00	0.00
---=Not analyzed					



TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-09C	MW-11A	MW-11B	OBS-1
	DATE	10/02/2001	10/04/2001	10/02/2001	10/04/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	1.9
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	1.50

—=Not analyzed

TABLE 3  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs- VOLATILE HALOGENATED HYDROCARBONS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 10/04/2001	TRIP BLANK 10/02/2001	TRIP BLANK 10/03/2001	TRIP BLANK 10/04/2001
1,1,1-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	(ug/l)	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromoform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Bromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloroform	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chloromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Methylene chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	(ug/l)	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	(ug/l)	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	M-30B-R 10/02/2001 Primary	MW-05B 10/02/2001 Primary	MW-06A 10/03/2001 Primary	MW-06B 10/03/2001 Primary	MW-06C 10/03/2001 Primary	MW-06E 10/03/2001 Primary
1,2-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	1.0	1.4	<0.5
1,3-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	1.9	3.7	<0.5
Benzene	(ug/l)	<0.5	<0.5	<0.5	1.5	1.0	<0.5
Chlorobenzene	(ug/l)	<0.5	<0.5	<0.5	7.4	1.6	<0.5
Ethylbenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	11.80	7.70	0.00

---=Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	RESULT TYPE	MW-06F 10/03/2001 Primary	MW-06F 10/03/2001 Duplicate 1	MW-07B 10/02/2001 Primary	MW-08A 10/03/2001 Primary	MW-08B 10/03/2001 Primary	MW-09B 10/02/2001 Primary
1,2-Dichlorobenzene		(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene		(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene		(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene		(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene		(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene		(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene		(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
o-Xylene		(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene		(ug/l)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Constituents		(ug/l)	0.00	0.00	0.00	0.00	0.00	0.00

----=Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - AROMATIC HYDROCARBONS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	RESULT TYPE	MW-09C 10/02/2001 Primary	MW-11A 10/04/2001 Primary	MW-11B 10/02/2001 Primary	OBS-1 10/04/2001 Primary
1,2-Dichlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5
Benzene	(ug/l)		<0.5	<0.5	<0.5	2.8
Chlorobenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5
Ethylbenzene	(ug/l)		<0.5	<0.5	<0.5	<0.5
m/p-xylene	(ug/l)		<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)		<0.5	<0.5	<0.5	<0.5
Toluene	(ug/l)		<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)		0.00	0.00	0.00	2.80

---=Not analyzed

TABLE 4  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs- AROMATIC HYDROCARBONS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 10/04/2001	TRIP BLANK 10/02/2001	TRIP BLANK 10/03/2001	TRIP BLANK 10/04/2001
1,2-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Benzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	(ug/l)	<0.5	<0.5	<0.5	<0.5
m/p-xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
o-Xylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Toluene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents		0.00	0.00	0.00	0.00

---=Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE	DATE	RESULT TYPE	MW-05B	MW-06A	MW-06B	MW-06C	MW-06E
				10/02/2001	10/03/2001	10/03/2001	10/03/2001	10/03/2001
				Primary	Primary	Primary	Primary	Primary
	(ug/l)			<0.5	<0.5	<0.5	<0.5	<0.5
	(ug/l)			0.00	0.00	0.00	0.00	0.00
Tetrachloroethylene								
Sum of Constituents								

----Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-06F	MW-06F	MW-07B	MW-08A	MW-08B	MW-09B
	DATE	10/03/2001	10/03/2001	10/02/2001	10/03/2001	10/03/2001	10/02/2001
	RESULT TYPE	Primary	Duplicate 1	Primary	Primary	Primary	Primary
	(ug/l)	<0.5	<0.5	120	13	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	120.00	13.00	0.00	0.00
Tetrachloroethylene							
Sum of Constituents							

---=Not analyzed



TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs - TETRACHLOROETHYLENE

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-09C	MW-11A	MW-11B	OBS-1
	DATE	10/02/2001	10/04/2001	10/02/2001	10/04/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
	(ug/l)	<0.5	<0.5	<0.5	1.4
Sum of Constituents	(ug/l)	0.00	0.00	0.00	1.40
Tetrachloroethylene					
Sum of Constituents					

---=Not analyzed

TABLE 5  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
VOCs- TETRACHLOROETHYLENE

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 10/04/2001	TRIP BLANK 10/02/2001	TRIP BLANK 10/03/2001	TRIP BLANK 10/04/2001
Tetrachloroethylene	(ug/l)	<0.5	<0.5	<0.5	<0.5
Sum of Constituents	(ug/l)	0.00	0.00	0.00	0.00
1					
----=Not analyzed					

TOWN OF OYSTER BAY  
 OLD BETHPAGE LANDFILL  
 OLD BETHPAGE, NEW YORK

TABLE 6

RECOVERY WELL SAMPLING RESULTS - VOLATILE ORGANIC COMPOUNDS  
 FOURTH QUARTER SAMPLING ROUND - OCTOBER 2001

SAMPLE DESIGNATION: SAMPLE COLLECTION DATE:	RW-1 10/2/01	RW-2 10/2/01	RW-3 10/2/01	RW-4 10/2/01	RW-5 10/2/01
Benzene	0	0.62	1.15	0	0
Bromodichloromethane	0	0	0	0	0
Bromoform	0	0	0	0	0
Carbon tetrachloride	0	0	0	0	0
Chlorobenzene	0.78	0.63	1.12	0	0
Chlorodibromomethane	0	0	0	0	0
Chloroethane	0	0	0	0	0
Chloroform	0	0	0	0.84	0
o,p-Dichlorobenzene	2.68	1.82	2.82	0	1.22
m,o,p-Dichlorobenzene	2.68	1.82	2.82	0	1.22
1,1-Dichloroethane	0.6	0.6	1.85	0.51	0
1,2-Dichloroethane	0	0	0	0	1.64
1,1-Dichloroethene	0	0	0	1.14	0.87
cis-1,2-Dichloroethene	1.6	1.48	13.97	7.79	37.24
trans-1,2-Dichloroethene	0	0	0	0	0
1,2-Dichloropropane	0	0	0	0	0
Ethylbenzene	0	0	0	0	0
Methylene chloride	0	0	0	0	0
Tetrachloroethene	0	0	23.38	39.03	439.44
Toluene	0	0	0	0	0
1,1,1-Trichloroethane	0	0	0	2.73	2.74
Trichloroethylene	0	0	2.84	58.69	92.67
Vinyl chloride	0	0	0	0	0
o-Xylene	0	0	0	0	0
m+p-Xylene	0	0	0	0	0
Xylenes (total)	0	0	0	0	0
Dichlorodifluoromethane	0	0	0	0	0
Isopropylbenzene	0	0	0	0	0
n-Butylbenzene	0	0	0	0	0
tert-Butylbenzene	0	0	0	0	0
<b>Total VOCs</b>	<b>5.66</b>	<b>5.15</b>	<b>47.13</b>	<b>110.73</b>	<b>575.82</b>

Notes:

All concentrations in ug/l.

0 - Not detected at a concentration exceeding the method detection limit.

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	LF-1	M-30B-R	MW-05B	MW-06A
	DATE	10/04/2001	10/02/2001	10/02/2001	10/03/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
Alkalinity	(mg/l)	73.9	20.5	49.1	5.50
Aluminum	(mg/l)	---	<0.20	<0.20	<0.20
Ammonia (as N)	(mg/l)	6.44	<0.1	<0.1	<0.1
Barium	(mg/l)	---	<0.20	<0.20	<0.20
Bicarbonate (as CaCO3)	(mg/l)	73.9	20.5	49.1	5.50
Calcium	(mg/l)	---	17.7	11.8	1.18
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	84.4	95.0	85.5	4.86
Chromium	(mg/l)	---	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	---	<0.02	<0.02	<0.02
Copper	(mg/l)	---	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	88.0	72.0	68.0	11.0
Iron	(mg/l)	---	0.09	0.28	0.06
Lead	(ug/l)	---	<5.00	<5.00	<5.00
Magnesium	(mg/l)	---	8.26	13.7	1.16
Manganese	(mg/l)	---	<0.02	2.76	0.04
Mercury	(ug/l)	---	<0.2	<0.2	<0.2
Nickel	(mg/l)	---	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	0.906	2.44	<0.1	0.447
Potassium	(mg/l)	---	9.18	8.53	1.83
Sodium	(mg/l)	---	56.6	59.9	3.54
Sulfate	(mg/l)	31.8	36.7	30.6	<5
Total Dissolved Solids	(mg/l)	299	395	395	75.0
Total Kjeldahl nitrogen (as N)	(mg/l)	7.56	0.246	0.406	<1
Total Phenols	(mg/l)	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	(mg/l)	---	<0.02	<0.02	<0.02

---=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-06B	MW-06C	MW-06E	MW-06F
	DATE	10/03/2001	10/03/2001	10/03/2001	10/03/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
Alkalinity	(mg/l)	785	738	103	<1
Aluminum	(mg/l)	<0.20	<0.20	<0.20	<0.20
Ammonia (as N)	(mg/l)	96.5	76.1	19.1	<0.1
Barium	(mg/l)	<0.20	<0.20	0.21	<0.20
Bicarbonate (as CaCO3)	(mg/l)	785	737	103	<1
Calcium	(mg/l)	24.5	65.6	26.0	29.0
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	213	635	135	148
Chromium	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	<0.02	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	180	250	108	110
Iron	(mg/l)	22.7	15.1	1.10	0.10
Lead	(ug/l)	<5.00	<5.00	<5.00	<5.00
Magnesium	(mg/l)	27.9	18.3	12.5	11.7
Manganese	(mg/l)	0.24	0.25	0.66	0.05
Mercury	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel	(mg/l)	<0.04	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	<0.1	<0.1	<0.1	0.559
Potassium	(mg/l)	106	125	34.7	2.69
Sodium	(mg/l)	190	496	54.9	46.3
Sulfate	(mg/l)	24.3	67.0	27.8	<5
Total Dissolved Solids	(mg/l)	856	1560	454	496
Total Kjeldahl nitrogen (as N)	(mg/l)	109	106	19.2	<0.1
Total Phenols	(mg/l)	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	(mg/l)	<0.02	<0.02	0.03	<0.02

---=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-06F	MW-07B	MW-08A	MW-08B
	DATE	10/03/2001	10/02/2001	10/03/2001	10/03/2001
	RESULT TYPE	Duplicate 1	Primary	Primary	Primary
Alkalinity	(mg/l)	<1	4.00	29.7	12.9
Aluminum	(mg/l)	<0.20	<0.20	<0.20	<0.20
Ammonia (as N)	(mg/l)	<0.1	<0.1	1.47	1.62
Barium	(mg/l)	<0.20	<0.20	<0.20	<0.20
Bicarbonate (as CaCO3)	(mg/l)	<1	4.00	29.7	12.9
Calcium	(mg/l)	31.6	5.25	3.91	33.1
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	152	30.4	81.6	23.1
Chromium	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	<0.02	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	104	22.0	20.0	124
Iron	(mg/l)	0.06	0.19	0.06	0.47
Lead	(ug/l)	<5.00	<5.00	<5.00	<5.00
Magnesium	(mg/l)	12.8	2.9	2.13	12.2
Manganese	(mg/l)	0.06	0.04	0.11	1.26
Mercury	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel	(mg/l)	<0.04	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	0.556	2.67	11.6	0.313
Potassium	(mg/l)	3.01	1.13	39.5	18.4
Sodium	(mg/l)	51.0	16.1	93.8	95.8
Sulfate	(mg/l)	<5	<5	124	53.5
Total Dissolved Solids	(mg/l)	514	122	425	576
Total Kjeldahl nitrogen (as N)	(mg/l)	0.143	0.107	2.74	1.78
Total Phenols	(mg/l)	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	(mg/l)	0.03	<0.02	<0.02	0.07

---=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	MW-09B	MW-09C	MW-11A	MW-11B
	DATE	10/02/2001	10/02/2001	10/04/2001	10/02/2001
	RESULT TYPE	Primary	Primary	Primary	Primary
Alkalinity	(mg/l)	10.0	66.3	2.00	1.70
Aluminum	(mg/l)	<0.20	<0.20	<0.20	<0.20
Ammonia (as N)	(mg/l)	<0.1	13.3	<0.1	<0.1
Barium	(mg/l)	<0.20	<0.20	<0.20	<0.20
Bicarbonate (as CaCO3)	(mg/l)	10.0	66.3	2.00	1.70
Calcium	(mg/l)	7.02	1.94	3.69	1.21
Carbonate (as CaCO3)	(mg/l)	<1	<1	<1	<1
Chloride	(mg/l)	28.9	67.7	6.44	4.54
Chromium	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper	(mg/l)	<0.02	<0.02	<0.02	<0.02
Cyanide	(ug/l)	<10	<10	<10	<10
Hardness (as CaCO3)	(mg/l)	30.0	17.0	17.0	8.00
Iron	(mg/l)	0.03	0.11	0.05	0.03
Lead	(ug/l)	<5.00	<5.00	<5.00	<5.00
Magnesium	(mg/l)	3.83	3.14	2.14	0.59
Manganese	(mg/l)	0.07	0.06	<0.02	<0.02
Mercury	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel	(mg/l)	<0.04	<0.04	<0.04	<0.04
Nitrate (as N)	(mg/l)	4.59	0.212	5.27	0.880
Potassium	(mg/l)	5.83	23.9	1.09	0.62
Sodium	(mg/l)	20.3	51.1	5.72	3.57
Sulfate	(mg/l)	20.5	24.6	<5	<5
Total Dissolved Solids	(mg/l)	175	387	94.0	50.0
Total Kjeldahl nitrogen (as N)	(mg/l)	1.01	15.2	<0.1	<0.1
Total Phenols	(mg/l)	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	(mg/l)	<0.02	<0.02	<0.02	<0.02

---=Not analyzed

TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	OBS-1 10/04/2001 Primary
Alkalinity	(mg/l)	41.7
Aluminum	(mg/l)	<0.20
Ammonia (as N)	(mg/l)	1.50
Barium	(mg/l)	<0.20
Bicarbonate (as CaCO3)	(mg/l)	41.7
Calcium	(mg/l)	15.0
Carbonate (as CaCO3)	(mg/l)	<1
Chloride	(mg/l)	92.0
Chromium	(mg/l)	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02
Copper	(mg/l)	<0.02
Cyanide	(ug/l)	<10
Hardness (as CaCO3)	(mg/l)	80.0
Iron	(mg/l)	0.11
Lead	(ug/l)	<5.00
Magnesium	(mg/l)	11.8
Manganese	(mg/l)	0.97
Mercury	(ug/l)	<0.2
Nickel	(mg/l)	<0.04
Nitrate (as N)	(mg/l)	0.710
Potassium	(mg/l)	8.31
Sodium	(mg/l)	66.2
Sulfate	(mg/l)	51.6
Total Dissolved Solids	(mg/l)	314
Total Kjeldahl nitrogen (as N)	(mg/l)	3.60
Total Phenols	(mg/l)	<0.0050
Zinc	(mg/l)	<0.02

---Not analyzed



TABLE 7  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 10/04/2001
Alkalinity	(mg/l)	<1
Aluminum	(mg/l)	<0.20
Ammonia (as N)	(mg/l)	<0.1
Barium	(mg/l)	<0.20
Bicarbonate (as CaCO3)	(mg/l)	<1
Calcium	(mg/l)	0.21
Carbonate (as CaCO3)	(mg/l)	<1
Chloride	(mg/l)	<2
Chromium	(mg/l)	<0.01
Chromium (Hexavalent)	(mg/l)	<0.02
Copper	(mg/l)	<0.02
Cyanide	(ug/l)	<10
Hardness (as CaCO3)	(mg/l)	<5
Iron	(mg/l)	0.02
Lead	(ug/l)	<5.00
Magnesium	(mg/l)	<0.20
Manganese	(mg/l)	<0.02
Mercury	(ug/l)	<0.2
Nickel	(mg/l)	<0.04
Nitrate (as N)	(mg/l)	<0.1
Potassium	(mg/l)	<0.20
Sodium	(mg/l)	0.31
Sulfate	(mg/l)	<5
Total Dissolved Solids	(mg/l)	<10
Total Kjeldahl nitrogen (as N)	(mg/l)	<0.1
Total Phenols	(mg/l)	<0.0050
Zinc	(mg/l)	<0.02

---=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	M-30B-R 10/02/2001 Primary	MW-05B 10/02/2001 Primary	MW-06A 10/03/2001 Primary	MW-06B 10/03/2001 Primary
Aluminum (Dissolved)	(mg/l)	<0.20	<0.20	<0.20	<0.20
Barium (Dissolved)	(mg/l)	<0.20	<0.20	<0.20	<0.20
Calcium (Dissolved)	(mg/l)	15.2	1.59	1.05	27.4
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Iron (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Lead (Dissolved)	(ug/l)	<5.00	<5.00	<5.00	<5.00
Magnesium (Dissolved)	(mg/l)	7.05	2.76	1.0	11.1
Manganese (Dissolved)	(mg/l)	<0.02	0.06	0.04	0.06
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	8.04	23.3	2.01	2.72
Sodium (Dissolved)	(mg/l)	48.1	47.5	3.63	44.0
Zinc (Dissolved)	(mg/l)	0.04	<0.02	0.06	0.03

---Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive  
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-06C 10/03/2001 Primary	MW-06E 10/03/2001 Primary	MW-06F 10/03/2001 Primary	MW-06F 10/03/2001 Duplicate 1
Aluminum (Dissolved)	(mg/l)	<0.20	<0.20	<0.20	<0.20
Barium (Dissolved)	(mg/l)	<0.20	0.21	<0.20	<0.20
Calcium (Dissolved)	(mg/l)	58.3	24.8	10.4	27.1
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Iron (Dissolved)	(mg/l)	0.07	<0.02	<0.02	<0.02
Lead (Dissolved)	(ug/l)	<5.00	7.14	<5.00	<5.00
Magnesium (Dissolved)	(mg/l)	16.6	11.8	12.1	11.0
Manganese (Dissolved)	(mg/l)	0.22	0.64	2.50	0.06
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	124	34.0	8.02	2.77
Sodium (Dissolved)	(mg/l)	473	51.5	53.8	43.7
Zinc (Dissolved)	(mg/l)	0.07	0.06	<0.02	0.04

---=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-07B 10/02/2001 Primary	MW-08A 10/03/2001 Primary	MW-08B 10/03/2001 Primary	MW-09B 10/02/2001 Primary
Aluminum (Dissolved)	(mg/l)	<0.20	<0.20	<0.20	<0.20
Barium (Dissolved)	(mg/l)	<0.20	<0.20	<0.20	<0.20
Calcium (Dissolved)	(mg/l)	4.36	3.90	34.5	6.71
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	0.02
Iron (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Lead (Dissolved)	(ug/l)	<5.00	<5.00	<5.00	<5.00
Magnesium (Dissolved)	(mg/l)	2.38	2.02	12.6	3.65
Manganese (Dissolved)	(mg/l)	0.04	0.12	1.32	0.07
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	1.02	41.0	20.1	6.11
Sodium (Dissolved)	(mg/l)	14.4	95.1	99.6	21.2
Zinc (Dissolved)	(mg/l)	0.03	0.03	0.11	0.02

--=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE RESULT TYPE	MW-09C 10/02/2001 Primary	MW-11A 10/04/2001 Primary	MW-11B 10/02/2001 Primary	OBS-1 10/04/2001 Primary
Aluminum (Dissolved)	(mg/l)	<0.20	<0.20	<0.20	<0.20
Barium (Dissolved)	(mg/l)	<0.20	<0.20	<0.20	<0.20
Calcium (Dissolved)	(mg/l)	1.84	3.49	0.90	14.3
Chromium (Dissolved)	(mg/l)	<0.01	<0.01	<0.01	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Copper (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	<0.02
Iron (Dissolved)	(mg/l)	<0.02	<0.02	<0.02	0.03
Lead (Dissolved)	(ug/l)	<5.00	<5.00	<5.00	<5.00
Magnesium (Dissolved)	(mg/l)	3.13	2.07	0.37	11.3
Manganese (Dissolved)	(mg/l)	0.06	<0.02	<0.02	0.92
Mercury (Dissolved)	(ug/l)	<0.2	<0.2	<0.2	<0.2
Nickel (Dissolved)	(mg/l)	<0.04	<0.04	<0.04	<0.04
Potassium (Dissolved)	(mg/l)	24.3	0.92	0.56	8.06
Sodium (Dissolved)	(mg/l)	50.6	5.79	3.17	64.3
Zinc (Dissolved)	(mg/l)	<0.02	<0.02	0.03	<0.02

---=Not analyzed

TABLE 8  
TOWN OF OYSTER BAY  
OLD BETHPAGE LANDFILL

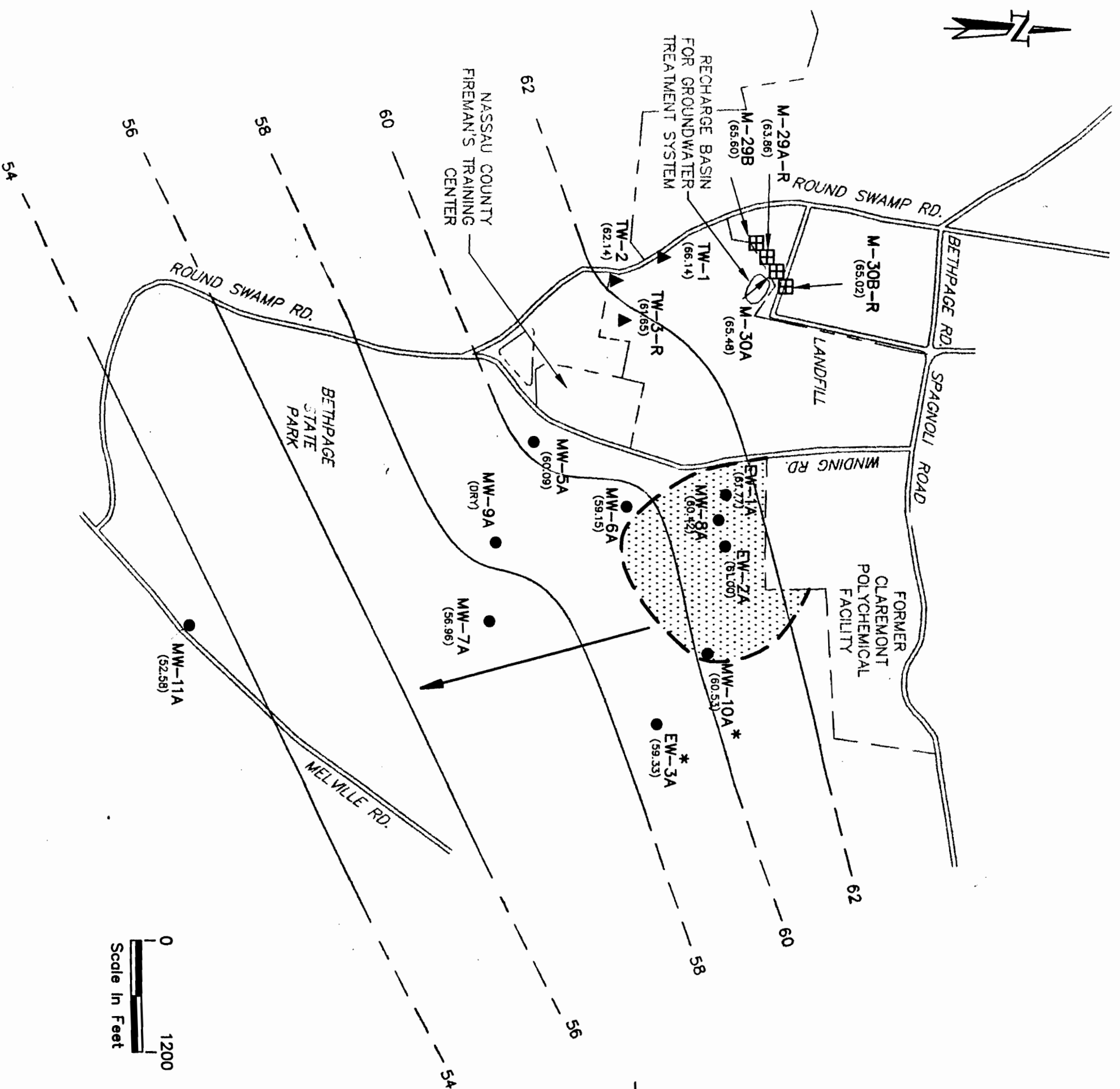
GROUNDWATER ANALYTICAL RESULTS - OCTOBER 2001  
DISSOLVED (FILTERED) METALS

PERIOD: From 10/01/2001 thru 12/31/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	FIELD BLANK 10/04/2001
Aluminum (Dissolved)	(mg/l)	<0.20
Barium (Dissolved)	(mg/l)	<0.20
Calcium (Dissolved)	(mg/l)	<0.20
Chromium (Dissolved)	(mg/l)	<0.01
Chromium (Hexavalent) (Dissolved)	(mg/l)	<0.02
Copper (Dissolved)	(mg/l)	<0.02
Iron (Dissolved)	(mg/l)	<0.02
Lead (Dissolved)	(ug/l)	<5.00
Magnesium (Dissolved)	(mg/l)	<0.20
Manganese (Dissolved)	(mg/l)	<0.02
Mercury (Dissolved)	(ug/l)	<0.2
Nickel (Dissolved)	(mg/l)	<0.04
Potassium (Dissolved)	(mg/l)	<0.20
Sodium (Dissolved)	(mg/l)	<0.20
Zinc (Dissolved)	(mg/l)	<0.02

--=Not analyzed

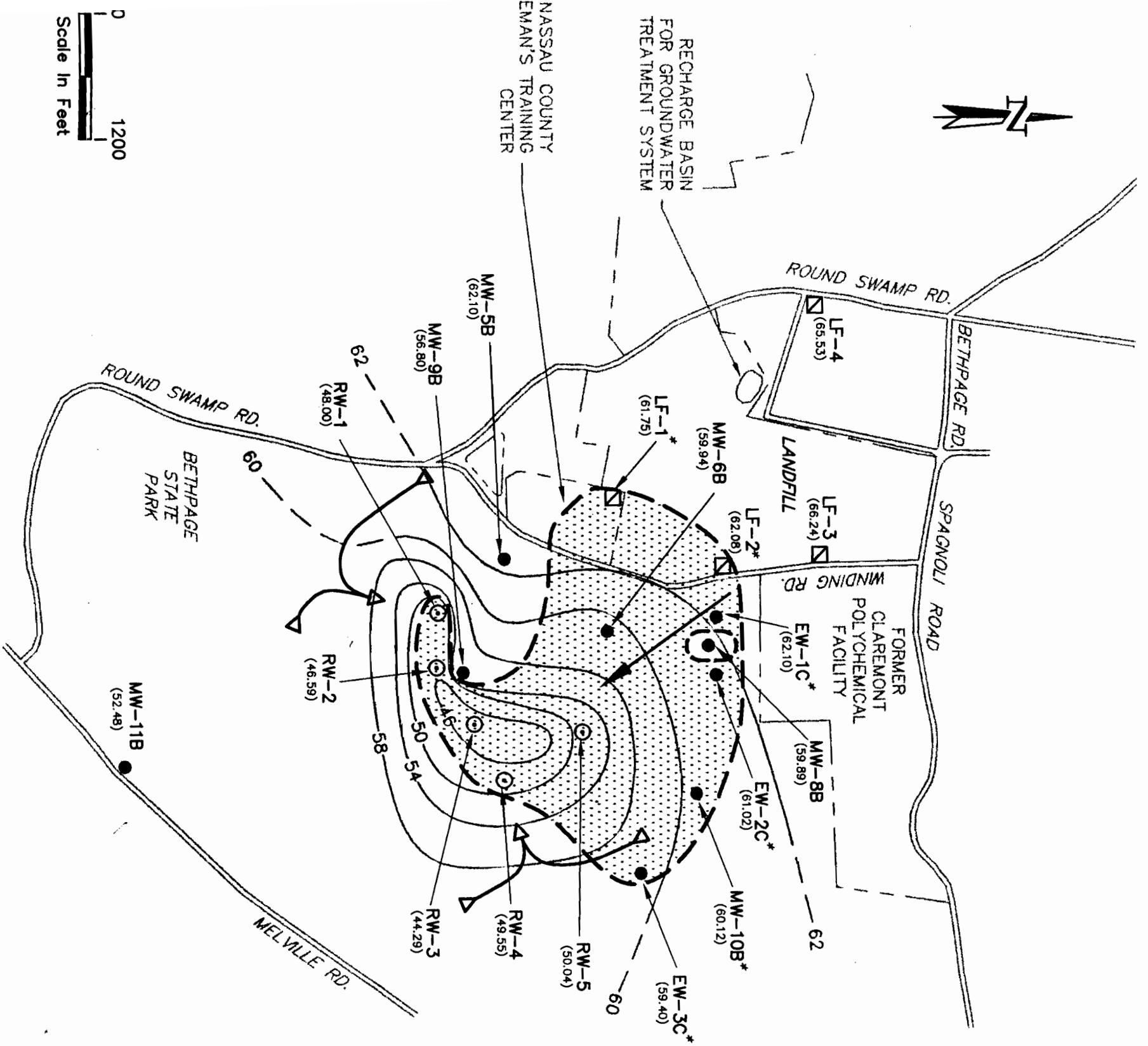


**LEGEND**

- MW-5A ● Monitoring Well Location And Designation  
(62.42) Water Level Elevation In Feet Above Mean Sea Level
- TW-2 ▲ Phase II Extension Well
- M-29A ▩ Upgradient Well
- Property Boundary
- Groundwater Flow Direction
- Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- ⬢ Approximate Areal Extent Of The VOC Plume In Water Table Wells - July 2001
- \* Plume Extent Based On Third Quarter 1998 Data.



**WATER TABLE  
FLOW MAP  
OCTOBER 1, 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**LEGEND**

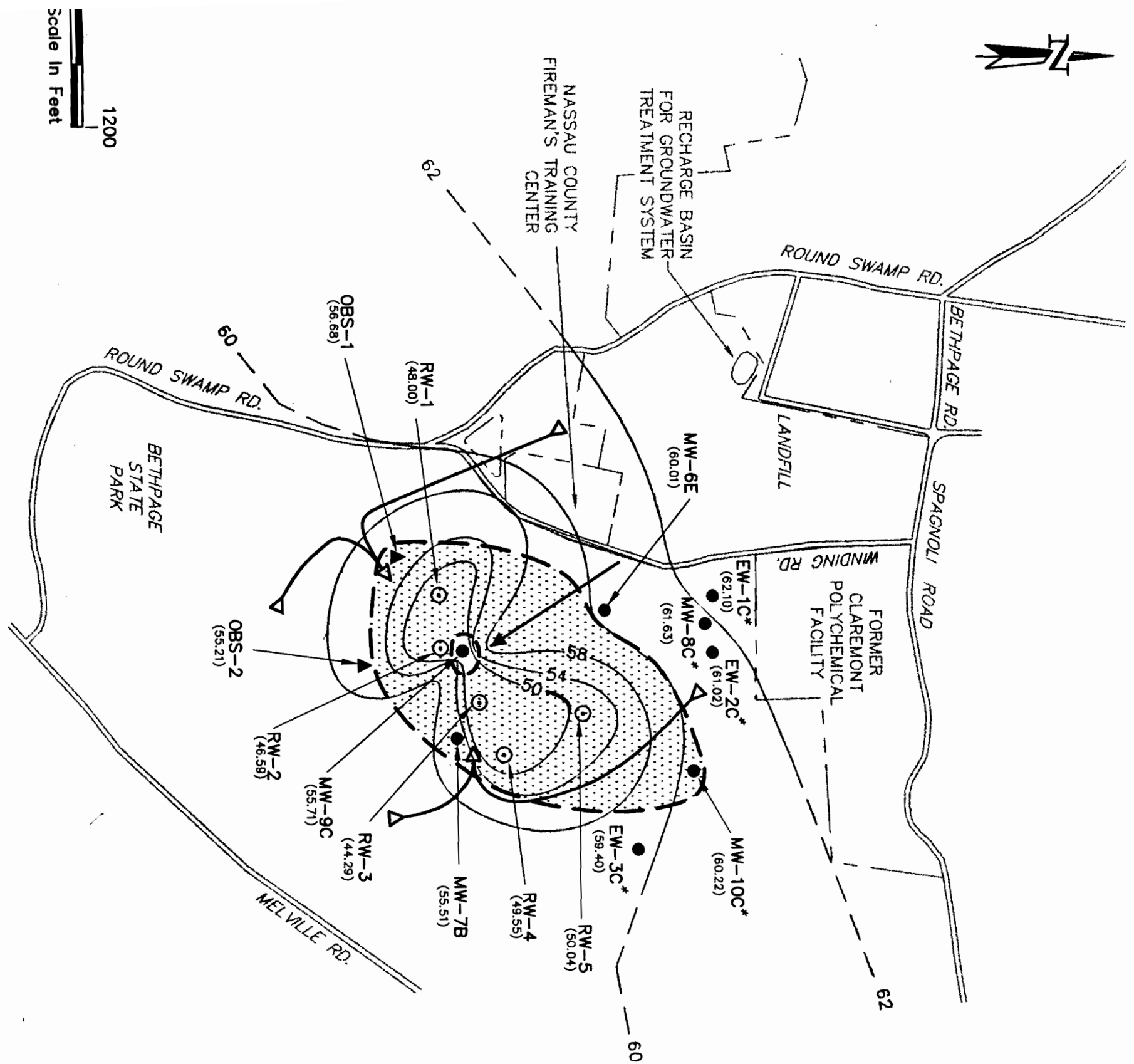
- MW-5B ● Monitoring Well Location And Designation
- (62.45) Water Level Elevation In Feet
- Above Mean Sea Level
- RW-5 ○ Recovery Well
- LF-2 □ Phase III Well
- Limiting Flow Lines Depicting Estimated Effective Capture Zones
- Groundwater Flow Direction
- 60 ——— Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)
- Property Boundary
- Approximate Areal Extent Of The VOC Plume In Shallow Potentiometric Zone July 2001.
- \* Plume Extent Based On Third Quarter 1998 Data.

**SHALLOW POTENTIOMETRIC FLOW MAP**

**OCTOBER 1, 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY

0 1200  
Scale In Feet



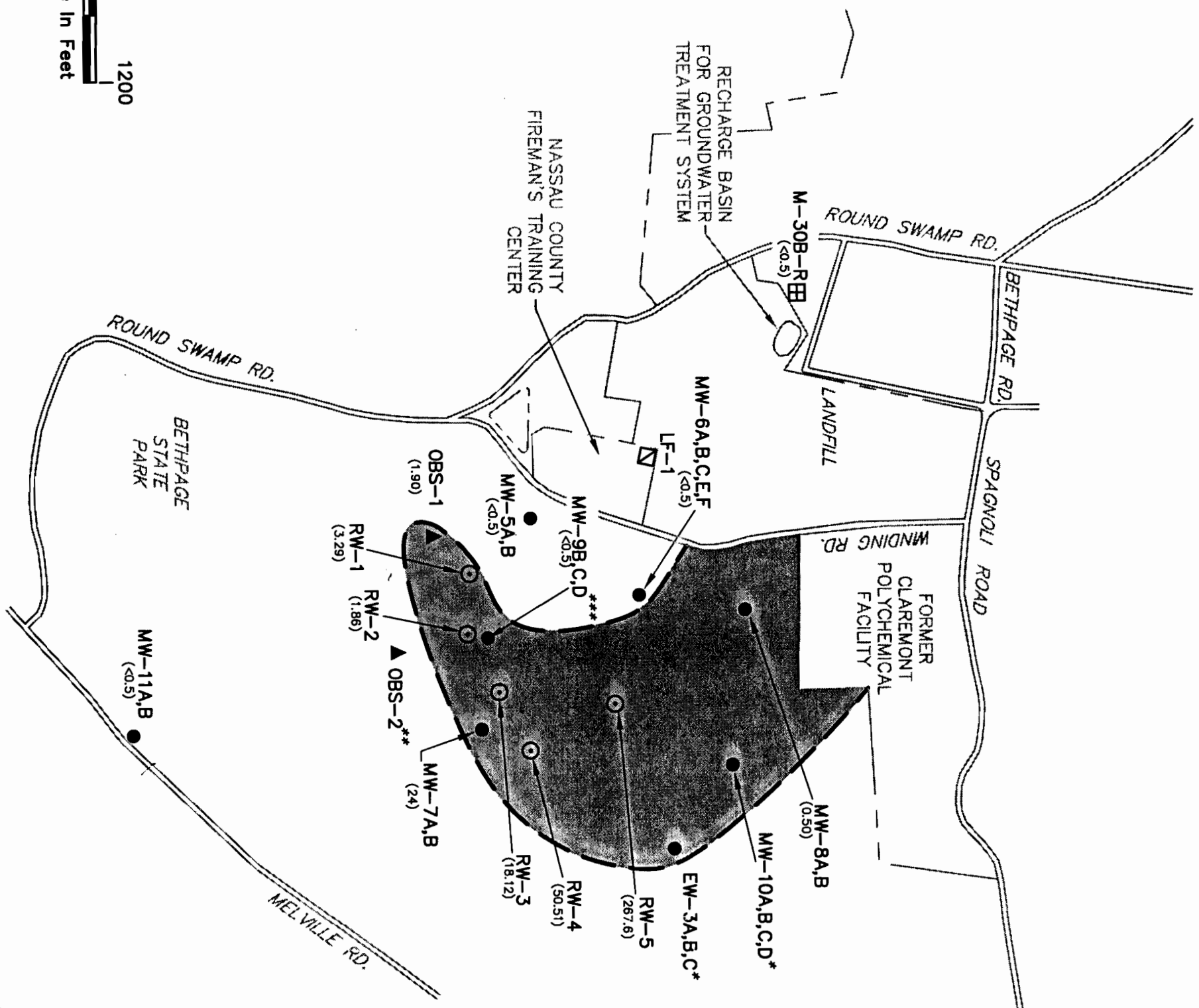


1200  
Scale In Feet

**LEGEND**

- MW-8C (63.61) *Monitoring Well Location And Designation*
- *Water Level Elevation In Feet Above Mean Sea Level*
- RW-4 *Recovery Well*
- ▲ OBS-2 *Phase II Extension Well*
- *Property Boundary*
- *Limiting Flow Lines Depicting Estimated Effective Capture Zone*
- *Groundwater Flow Direction*
- - - *Line Of Equal Elevation Of The Water Table In Feet Above Mean Sea Level (Dashed Where Inferred)*
- ⊙ *Approximate Areal Extent Of The VOC Plume In The Deep Potentiometric Zone - July 2001*
- \* *Plume Extent Based On Third Quarter 1998 Data*

**DEEP POTENTIOMETRIC  
FLOW MAP**  
**OCTOBER 1, 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**LEGEND**

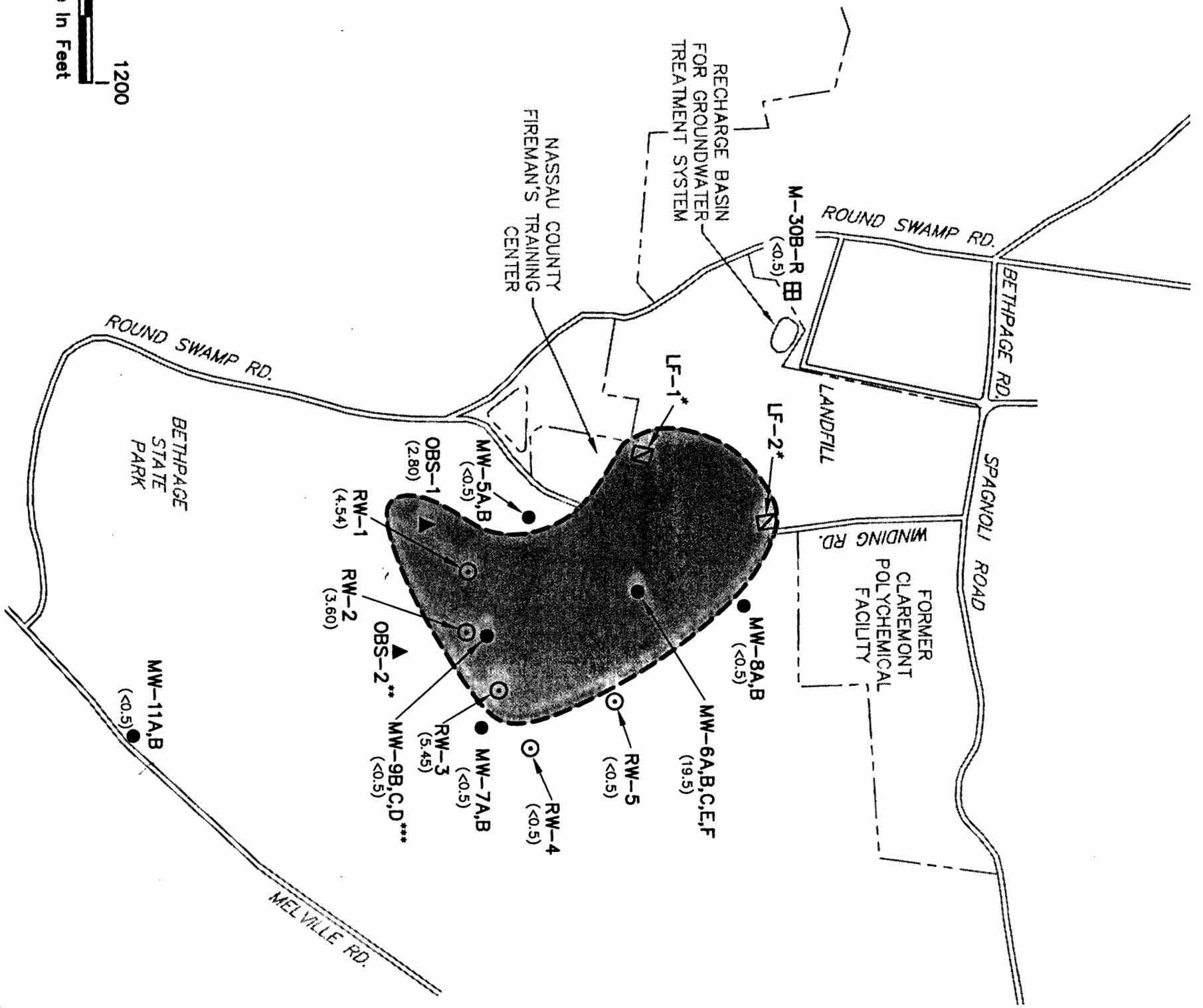
- MW-5B ● Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- MW-6A,B,C,E,F (dots) Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- MW-7A,B (dots) Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- MW-7B,C,D (dots) Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- MW-8A,B (dots) Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- MW-9B,C,D (dots) Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- MW-10A,B,C,D (dots) Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- MW-11A,B (dots) Monitoring Well Location And Total Volatile Halogenated Organics Concentration, ppb
- RW-5 ○ Recovery Well
- OBS-2 ▲ Phase II Extension Well
- LF-1 ◻ Phase III Well
- M-29A-R ◻ Upgradient Well
- Property Boundary
- ◻ Approximate Areal Extent Of The Volatile Halogenated Organic Plume

**NOTE**

- \* Plume Extent Based On Third Quarter 1998 Data.
- \*\* Plume Extent Based On Third Quarter 2000 Data.
- \*\*\* Plume Extent Based On Third Quarter 2001 Data.

**APPROXIMATE EXTENT AND DISTRIBUTION OF TOTAL VOLATILE HALOGENATED ORGANICS OCTOBER 2001**

OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY



**LEGEND**

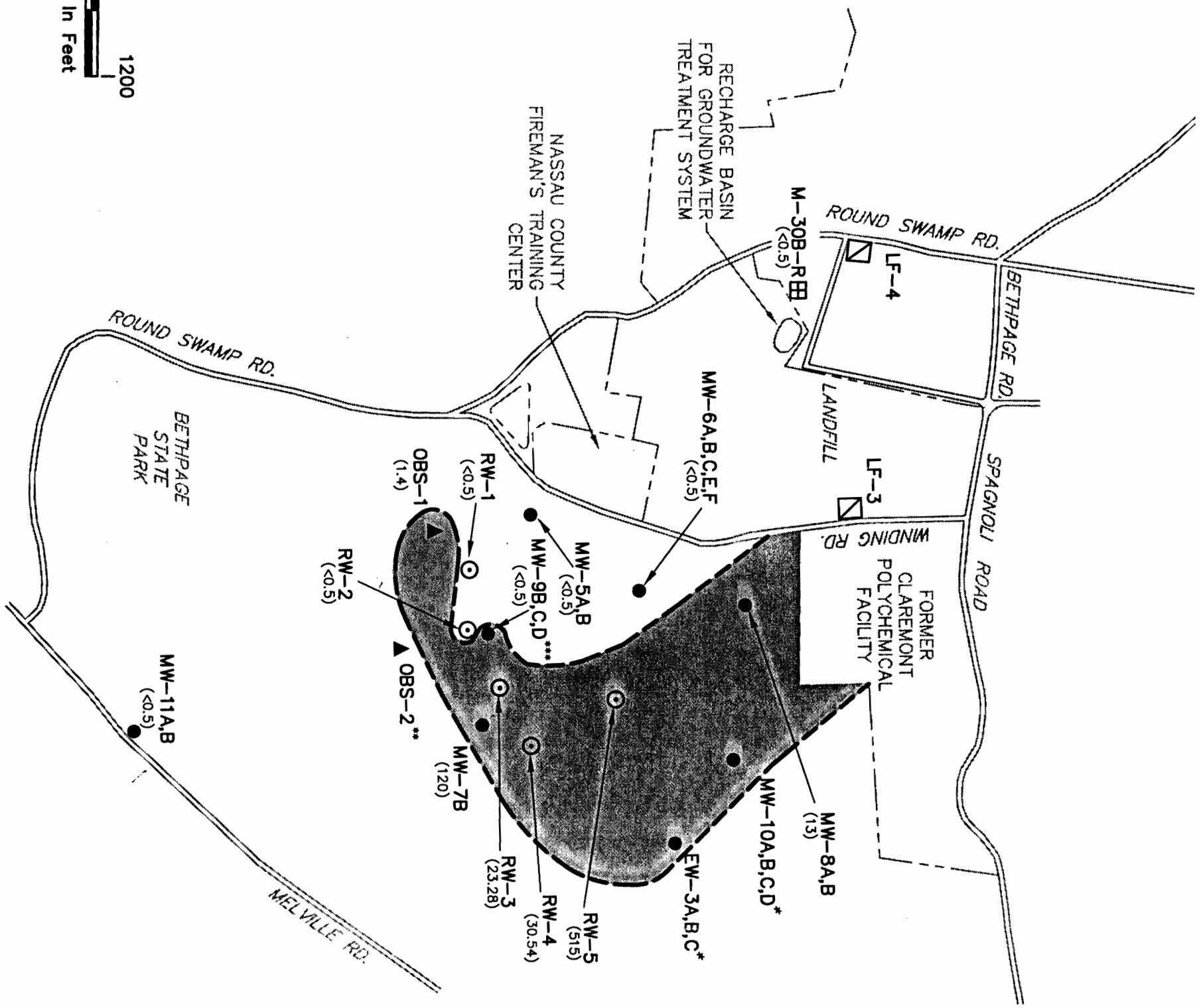
- MW-5B ● Monitoring Well Location And Total Aromatic Hydrocarbon Concentration, ppb (<1)
- RW-4 ○ Recovery Well
- OBS-1 ▲ Phase II Extension Well
- LF-1 □ Phase III Well
- M-29A-R ▣ Upgradient Well
- Property Boundary
- Approximate Areal Extent Of The Aromatic Hydrocarbon Plume

**NOTE**

- \* Plume Extent Based On Third Quarter 1998 Data
- \*\* Plume Extent Based On Third Quarter 2000 Data
- \*\*\* Plume Extent Based On Third Quarter 2001 Data

**APPROXIMATE EXTENT AND DISTRIBUTION OF TOTAL AROMATIC HYDROCARBONS**

**OCTOBER 2001**  
OLD BETHPAGE | ANNEX 11



**LEGEND**

- MW-5B ● Monitoring Well Location And Tetrachloroethene Concentration, ppb (<0.5)
- RW-4 ⊙ Recovery Well
- OBS-1 ▲ Phase II Extension Well
- LF-3 ▣ Phase III Well
- M-29A-RBB ▤ Upgradient Well

- Property Boundary
- Approximate Areal Extent Of The Tetrachloroethene Plume

**NOTE**

- Plume Contour Is Based On Tetrachloroethene Concentrations In The Monitoring And Recovery Wells.
- \* Plume Extent Based On Third Quarter 1998 Data.
- \*\* Plume Extent Based On Third Quarter 2000 Data.
- \*\*\* Plume Extent Based On Third Quarter 2001 Data.



**APPROXIMATE EXTENT AND DISTRIBUTION OF TETRACHLOROETHENE OCTOBER 2001**  
OLD BETHPAGE LANDFILL  
TOWN OF OYSTER BAY