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WORK PLAN

Remedial Design/Remedial Action

ITT Sealectro
Mamaroneck, New York

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September 2000

O'BRIEN & GERE
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1. Introduction

1.1. Objective

This document presents the Remedial Design/ Remedial Action(RD/RA) Work Plan for the former Sealectro, Inc. Facility (Sealectro), site # 360027, located at 139 Hoyt Street in Mamaroneck, New York (Figures 1 and 2). A preliminary RD/RA Work Plan dated September 1999 was submitted to the New York State Department of Environmental Conservation (NYSDEC). The NYSDEC in conjunction with the New York State Department of Health (NYSDOH) commented on the preliminary RD/RA Work Plan in a letter dated November 5, 1999. Communications with the NYSDOH took place to clarify certain comments regarding indoor air sampling and to agree upon a response. This revised RD/RA Work Plan incorporates the NYSDEC comments.

The objective of the RD/RA Work Plan is to provide one document that contains a description of all of the monitoring and remedial activities required by the Administrative Order on Consent (ACO) agreed to October 8, 1992 and the Record of Decision signed on March 31, 1999.

1.2. Remedial program elements

The ACO identified items that must be addressed during the Remedial Design phase of the project. Due to the nature of the remedy selected, a formal remedial design is not required at this time. However, many of the items identified in the ACO need to be addressed at this time. The elements of the ACO that will be addressed in the RD/RA Work Plan are: a description of the remedy, operation and maintenance activities associated with the remedy, site security, a site health and safety plan, site monitoring plans, a time schedule, a remedial effectiveness evaluation, and contingent remedy.

The ROD identified Monitored Natural Attenuation as the selected remedy. The components of the remedy are:

- The continued operation and maintenance (O&M) of the Solvent UST ground water extraction and treatment system;
- The implementation of a long term ground water monitoring program, which includes a set of Annual Cleanup Goals and Trigger Criteria for wells MW-2, MW-2D, MW-3, MW-3D, MW-11, MW-12, and TW-1;
- An indoor air monitoring program;
- A Contingency Remedy Plan that will be implemented if the maximum annual total concentration of VOCs at any of the wells being monitored exceeds the Trigger Criteria (Annual Cleanup Goal plus 20%) for three consecutive years.
- Additionally, if the New York State Department of Health (NYSDOH) determines that impacts to indoor air quality from the infiltration of site related contamination requires mitigation measures, an air contingency plan or other measures will be implemented;
- Institutional controls will be implemented to restrict land use and activities that would expose contaminated materials and to prohibit the installation of potable wells; and
- Maintenance of the existing fencing, existing asphalt pavement, and site security.

Prior to signing the ROD, the NYSDEC requested that a Ground Water Monitoring Plan (GWMP) be prepared. The Plan was submitted to the NYSDEC in November 1998 and was incorporated into the ROD. The GWMP did not include monitoring of test well TW-1, which was an additional action specified in the ROD. A Contingency Remedy Plan was submitted to the NYSDEC in February 1999 and was subsequently incorporated into the ROD. The Contingency Remedy Plan did not include test well TW-1, which was an additional action specified in the ROD. In addition, the ROD requires that the Contingency Remedy Plan identify what additional remedial measures would be taken if the implementation of the Contingency Remedial Plan fails to meet the Trigger Criteria. The Ground Water Monitoring Plan and the Contingency Remedy Plan, with the modifications required by the ROD, are incorporated into this Work Plan.

Institutional controls such as deed restrictions, fencing, security and maintenance of the existing asphalt cover were identified in the ROD. The activities associated with these controls are also discussed in this RD/RA Work Plan.

1.3. RD/RA work plan organization

The RD/RA Work Plan is organized so that remedial action elements, specified by the ACO and ROD, are grouped by the affected media (ground water and indoor air) and general site-related elements. A description of the RD/RA Work Plan sections is presented below:

Section 1 - Introduces the RD/RA, describes the purpose of the document, the remedial program, and the organization and content of each section of this Work Plan.

Section 2 - Presents the project background and the site hydrogeology.

Section 3 - Ground Water - The ground water media section of the RD/RA Work Plan will address the following remedial action elements:

- The implementation of a long term ground water monitoring program, which includes a set of year-by-year Annual Cleanup Goals and Trigger Criteria for wells MW-2, MW-2D, MW-3, MW-3D, MW-11, MW-12, and TW-1;

- A description of the Solvent UST ground water extraction and treatment system, changes to this interim system to adapt it to long-term use, and discussion of the routine O&M of the system; and

- The conceptual design of a ground water contingency remedy plan that will be implemented if the annual maximum concentration at any monitored well exceeds the Trigger Criteria (Annual Cleanup plus 20%) for three consecutive years as required by the ROD.

Section 4 - Indoor Air - The indoor air section describes the sample locations and the sampling and analytical methods to be used for the Indoor Air Monitoring Program. This section of the RD/RA Work Plan addresses the following remedial action elements:

- The implementation of an indoor air monitoring program;

- A procedure to evaluate the results of the indoor air monitoring and determine whether a contingent indoor air remedial program is necessary; and,

- The closure of the pit in the electrical closet in one side of the building.

Other general site related elements of the RD/RA Work Plan required by the ACO and ROD are discussed in the following sections.

Section 5 - Site Security - the implementation of site security and perimeter fencing.

Section 6 - Access/Use Restrictions - the implementation of institutional controls to restrict land use and activities that would expose workers to contaminated materials and to prohibit the installation of potable wells.

Section 7 - Maintenance of site fencing and asphalt cover - Inspections and maintenance of the integrity of fencing and asphalt cover.

Section 8 - Site Health and Safety Plan - the development of a health and safety plan for both site workers and off-site neighbors.

Section 9 - Permitting – The permits necessary to operate the existing ground water recovery and treatment system and other permits necessary to implement remedial activities at the site.

Section 10 - Reporting and Implementation Schedule – The schedule for the implementation of the RD/RA Work Plan and the reporting required for the implementation of the RD/RA Work Plan.

Section 11 - Project Contacts – NYSDEC, NYSDOH, ITT and O'Brien & Gere contacts for this project

Section 12 - Remedial Action Cost Estimate - The cost estimate for implementation of the RD/RA Work Plan. This estimate includes subcategories for capital equipment, operating & maintenance and monitoring for the completion of the 30 year remedial action.

2. Background

2.1. Project background

Multiple investigations and several interim remedial measures (IRMs) have been completed at the site to address known areas of contamination. The most recent investigation completed was the Remedial Investigation (RI). The results of the RI and previous investigations are presented in the *Remedial Investigation Report* dated December 1994 and the *Remedial Investigation Report Addendum* dated July 1995. The RI was subsequently approved by the NYSDEC in July 1995. The report concluded that residual dense non aqueous phase liquids (DNAPLs) are heterogeneously distributed in subsurface soils at the site. The residual DNAPLs in the soil act as a continuing source of volatile organic compounds (VOCs) to ground water. A human health risk assessment was completed as part of the RI Report. The risk assessment concluded that the conditions at the site do not pose an unacceptable risk.

Four IRMs were performed at the site. The IRMs completed in 1991 and 1992 included the removal of nine underground storage tanks (USTs), removal and off-site disposal of 148 yd cubic yards (yd^3) of contaminated soils, recovery of approximately 234 gallons of fuel oil, and removal of 27 pounds (lbs) of VOCs from the soil using a pilot *in situ* air stripping system. In addition, a ground water recovery and treatment system was installed in 1992 at the Solvent UST area (Figure 2). This system is still actively recovering and treating ground water. The ground water recovery and treatment system had recovered more than 327 pounds of VOCs as of June 1999. It has been estimated that the IRM activities have removed more than 50% of the VOC mass from the subsurface.

A ground water sampling program was initiated at the site in 1988. Quarterly sampling was initiated in July 1991 and continues to date. Up to 34 rounds of samples have been collected from selected monitoring wells. The data indicate that the concentrations of VOCs at most wells have decreased substantially over time. This trend suggests that the IRMs have been effective in reducing the concentrations of VOCs in ground water. A

complete discussion of the historical ground water quality data is presented in Section 3.1.1.

A Feasibility Study (FS) was completed for the site and a number of potential remedial alternatives were developed and evaluated in the study. The results were presented in the *Feasibility Study Report* dated January 1999. Based on the FS, Monitored Natural Attenuation was selected as the final remedy in the ROD, which was issued in March 1999.

2.2. Site geology and hydrogeology

The site geology consists of three unconsolidated units that overlie gray granitic gneiss bedrock. The uppermost unconsolidated deposit is composed of fill including black, fine to coarse grained sand and fine to coarse grained gravel with cinders and slag. The middle unit consists of interlayered discontinuous lenses of sand, silt, and clay. Individual lenses vary in thickness and texture, and are not laterally extensive. The unconsolidated deposit immediately atop bedrock consists of sand and gravel.

The ground water table occurs between 5 ft and 8 ft below the ground surface. The depth to water varies with seasons and stage of the Sheldrake River located immediately north of the site (Figure 2). Two ground water zones were identified at the site. The shallow zone occurs in the sand, silt, and clay unit while the deep zone occurs in the sand and gravel unit. Monitoring wells designated with a "D" were installed in the deep zone while all others were installed in the shallow ground water zone. Ground water flow in both zones is north toward the Sheldrake River. An upward hydraulic gradient from the deep zone to the shallow zone, along with the good hydraulic connection between the river and wells, indicate that ground water discharges to the Sheldrake River.

3. Ground Water

The Solvent UST ground water recovery and treatment system has been operating as an Interim Remedial Measure (IRM) since 1992. The ROD requires that this system continue to operate as a long-term system and if necessary, to treat ground water recovered from other locations on-site as part of the Contingency Remedy Plan. This section presents the revised Ground Water Monitoring Plan and revised Contingency Remedy Plan, describes the existing IRM ground water recovery and treatment system, routine O&M of this system, and presents the conceptual design for the Contingency Remedy.

3.1. Ground water monitoring plan

The ROD identified Monitored Natural Attenuation as the selected remedy. A component of the remedy is the implementation of a long term ground water monitoring program. The ROD incorporated the previously submitted GWMP. This section of the RD/RA Work Plan presents the revised Ground Water Monitoring Plan that was amended as specified in the ROD, to include the monitoring of test well TW-1. The overall objective of the Ground Water Monitoring Plan is to provide the methodologies that will be used to collect and analyze ground water samples, to evaluate future ground water quality data, and to determine whether the Contingency Remedy Plan should be implemented.

The terms Annual Cleanup Goals and Trigger Criteria are used throughout Section 3 of this document. To provide clarification the definitions of each term are presented below:

Annual Cleanup Goals - Are total VOC concentrations that were calculated at each well for a period of 30 years. The criteria are based on expodentially declining concentrations such that by year 30, the annual total VOC concentration criteria are equivalent to the sum of the VOC concentrations based on the 1999 New York State Ground Water Standards.

Trigger Criteria - Are the Annual Cleanup Goals calculated at each well plus 20%. If the Trigger Criteria are exceeded, at any given well, for 3 consecutuve years the implementation of the Contingency Remedy Plan will be "triggered" at the specific well.

The Ground Water Monitoring Plan presents the following information:

- Ground water quality summary
- Method used to calculate Annual Cleanup Goals and Trigger Criteria
- Wells to be included in the plan
- Sampling frequency
- Sampling and analytical procedures
- Methods used to compare data with Trigger Criteria
- Reports to be submitted to NYSDEC

3.1.1. Ground water quality

Several rounds of ground water samples were collected between 1988 and 1990. In July 1991 a quarterly sampling program was initiated and it continues to date; as many as 34 rounds of samples have been collected from selected monitoring wells. The well locations are illustrated on Figure 2 and VOC concentrations from 1988 to 1998 are presented on Table 1. Graphs of total VOC concentration vs. time for each well, with the exception of TW-1, are presented in Appendix A. Test well TW-1 has not been regularly sampled. A summary of the trends for each well is presented below:

MW-2 The concentrations of VOCs have steadily decreased since 1988. Total VOC concentrations between 1988 and 1991 ranged from 221 to 385 μg/L. Total VOCs concentrations since 1996 have ranged from 38 to 108 μg/L. The VOC concentrations in MW-2 have decreased by approximately 450% since 1991.

MW-2D Very low concentrations of VOCs were detected in this well between February 1992 and February 1994. However, between February and May 1994, the VOC concentrations began to increase significantly. The maximum concentration of total VOCs detected was 7,800 μg/L in February 1995. The primary VOCs in the samples were tetrachloroethene and 1,1,1-trichloroethane. Since February 1996, the concentrations have steadily decreased and have ranged from 670 to 2,240 μg/L. An analysis of the data suggests that, during one or more of the intrusive activities conducted at the site, DNAPL may have been mobilized. The mobilization

of the DNAPL may in turn have caused an increase in the dissolved VOC concentration at this well.

MW-3 Overall, total VOC concentrations have steadily decreased in this well. However, there continues to be some minor cyclical fluctuations in the VOC concentrations. The maximum concentration of total VOCs was 1,720 μg/L in July 1991. Since August 1993 the total VOC concentrations have ranged from 414 to 6 μg/L.

MW-3D The total VOC concentrations at this well have decreased significantly since monitoring was initiated. The maximum total VOC concentration detected at this location was 807 μg/L in February 1992. Since November 1996 the total VOC concentrations have ranged from 3 to 45 μg/L.

MW-11 The total VOC concentrations at this well have decreased significantly since the start of monitoring. The maximum total VOC concentration detected at this location was 482 μg/L in February 1994. Since November 1994, the concentrations have ranged from non-detect to 84 μg/L.

MW-12 The total VOC concentrations in MW-12 have followed a pattern that is similar to that observed in monitoring well MW-2D. Very low concentrations of VOCs were detected in this well between February 1994 and November 1994. The total VOC concentrations have increased significantly since February 1995, a maximum concentration of 25,600 μg/L was detected in May 1997. The total VOC concentrations since May 1997 have ranged from 7,020 to 23,560 μg/L. Similar to MW-2D, the data suggests that during one or more of the intrusive activities at the site, DNAPL may have been mobilized. The mobilization of the DNAPL may in turn have caused an increase in the dissolved VOC concentrations at this well.

TW-1 This well was installed in 1995 as a test recovery well. The well screens both the shallow and deep ground water zones. An aquifer performance test was completed in 1995 and the data obtained during the test indicated that the well had a yield of 12.25 gallons/minute. Ground water samples were collected at six hours and 24 hours into the aquifer test. The total VOC concentration detected in the six hour sample was 20,040μg/L and the total VOC concentration in the 24 hour sample was 21,550 μg/L. This well was not sampled again until August 1999.

In summary, the total VOC concentrations at MW-2, MW-3, MW-3D and MW-11 have shown a significant decrease since the start of monitoring in 1988. The total VOC concentrations at each of these four wells are now at or below 205 μg/L. The total VOC concentrations at the two remaining wells, MW-2D and MW-12, exhibit a significantly different trend. In these two wells there is a spike in VOC concentrations after the first one to two years of monitoring. The spike does not show any correlation with fluctuations in ground water elevations or ground water flow direction. An analysis of the types of VOCs that show an increase in concentration and the timing of the field activities suggest that the VOC concentration increases are possibly related to the mobilization of DNAPL.

3.1.2. Method used to calculate annual cleanup goals and trigger criteria

The Ground Water Monitoring Plan identifies Cleanup Goals and Trigger Criteria that must be met in monitoring wells MW-2, MW-2D, MW-3, MW-3D, MW-11 and MW-12. In addition, Annual Cleanup Goals and Trigger Criteria will be calculated for test well TW-1 after two years of quarterly monitoring. These Annual Cleanup Goals are based upon a trend of declining concentrations such that by year 30, the VOC concentration goals will be equivalent to New York State Ground Water Standards. The Annual Cleanup Goals plus 20% have been termed Trigger Criteria in this monitoring plan. Each well will be assigned Annual Cleanup Goals and Trigger Criteria that start upon initiation of the plan and continue to year 30. The method used to calculate these Annual Cleanup Goals and Trigger Criteria is discussed below.

Prior to the calculation of the Annual Cleanup Goals, the existing ground water quality data were evaluated to identify those compounds considered representative of actual ground water conditions. Table 2 summarizes, on a well by well basis, the New York State Class GA Ground Water Standard, the maximum concentration of the individual VOCs detected, the number of samples collected, the number of times a compound was detected, the percent of sampling events in which each compound was detected, and the percent of the total VOC concentrations that each compound comprises. For the Ground Water Monitoring Plan, compounds detected more than 10% of the time were considered to be representative of ground water conditions for each well. Compounds detected less than 10% of the time were not considered representative. Table 3 presents the Representative Compounds for each well. The sum of the maximum concentrations of the Representative Compounds was used as the "starting

point" or the initial concentration for the exponential decay curve at each well. The "end point" of the calculated decay curve is the sum of the NYS Class GA Ground Water Standards for those Representative Compounds. The Annual Cleanup Goals for each well corresponds to the concentration calculated using the exponential decay equation for the specific year in question. The Trigger Criteria value is the Annual Cleanup Goals plus 20%. The decay curves and Annual Cleanup Goals and Trigger Criteria for monitoring wells MW-2, MW-2D, MW-3, MW-3D, MW-11, and MW-12 have been calculated and are illustrated on Figures 3 through 8.

As previously mentioned Annual Cleanup Goals and Trigger Criteria will be calculated for test well TW-1 after two years of quarterly sampling. The Annual Cleanup Goals and Trigger Criteria will be calculated using the methods described above with the following exception:

- The Annual Cleanup Goals and Trigger Criteria will be calculated for years 3 through 30 instead of years 1 through 30. This will synchronize the schedule of TW-1 with the other wells included in this Plan.

Recognizing that New York State ground water quality standards provide goals for ground water quality in New York State, the concentration of each of the Representative Compounds will be compared to the Class GA Ground Water Standards during the last five years of the 30 year monitoring program. If concentrations exceed the Class GA Ground Water Standards, ITT and NYSDEC will discuss, if necessary, the appropriate course of action.

3.1.3. Ground water sampling

The first GWMP sampling event was completed on May 27, 1999 following approval of the ROD. Monitoring wells MW-2, MW-2D, MW-3, MW-3D, MW-11, and MW-12 were sampled for VOCs. Test well TW-1 was not redeveloped in time to be included in this sampling event.

During the GWMP, the ground water samples will be collected in accordance with the Ground Water Sampling Protocol presented in Appendix B. The samples will be analyzed for VOCs using USEPA Method 8021 under NYSDEC's Analytical Services Protocol by a NYSDOH Environmental Laboratory Protocol Certified Laboratory. The method analytical detection limits will be at or below the Class GA Ground Water Standards for the individual compounds. The compounds to be reported and the method detection limits are presented on Table 4.

The wells will be sampled quarterly for two years following NYSDEC's approval of the ROD. After this 2-year period, the sampling frequency will be reduced to one sampling event per year. The quarterly ground water monitoring data will be reviewed and a calendar quarter will be selected for subsequent annual sampling. The quarter selected for annual sampling will be presented to the NYSDEC for their approval. A summary of the sampling frequency is provided in the following:

Year	Sampling Frequency
1-2	Quarterly (August, November, February and May)
3-30	Annual

It is likely that the total VOC concentrations in a number of wells will drop below 100 μg/L during the 30-year monitoring period. In the event that the annual total VOC concentrations remain below 100 μg/L for a two-year period, ITT may petition NYSDEC to reduce the frequency of the monitoring in those wells from annual to once every five years.

Should a sample result appear anomalous, ITT may choose to resample the well in order to confirm the result. The sampling and analyses will be consistent with the routine procedures described in this RD/RA Work Plan. The results of the confirmation sample will be submitted to the NYSDEC within 60 days of the date of the receipt of the original sample results. Confirmation samples will include NYSDEC Category B deliverables. If the confirmation sample result is inconsistent with the original sample, ITT and the NYSDEC will jointly decide how the data will be compared to the TriggerCriteria.

In the event that the individual VOC concentrations at a well meet or are below New York State ground water quality standards for VOCs for two consecutive years, then ITT may petition the NYSDEC to discontinue the monitoring at that well. Similarly, if new, more lenient guidance becomes available during the implementation of the GWMP, ITT may petition the NYSDEC to apply the new guidance to the site. Any other modifications to the sampling frequency will be presented to the NYSDEC for their approval.

Ground water from existing recovery well RW-2 will be sampled once a year for VOCs and the results will be provided to the NYSDEC, for informational purposes, in the annual report. When monitoring wells MW-2, MW-2D, MW-3, MW-3D, MW-12, and test well TW-1 have each met

the criteria which allow the Ground Water Monitoring Plan to be discontinued, ITT will discuss with the NYSDEC whether the ground water quality of RW-2 necessitates additional actions as part of site closure.

3.1.4. Yearly data evaluation

Once per year the ground water monitoring VOC data will be compared to the Trigger Criteria. During years 1 and 2 of the monitoring program when samples are collected quarterly, the maximum of the quarterly total VOC concentrations in each well will be compared to the Annual Trigger Criteria for each well. During annual sampling, the total VOC concentration for that one event will be compared to the Annual Trigger Criteria. If the total VOC concentrations exceed the Annual Trigger Criteria, it will be considered an exceedance.

3.1.5. Contingency plan implementation

The ground water monitoring program will be conducted for a period of 30 years. Should the yearly evaluation of the site monitoring data demonstrate that the total VOC concentrations in a well exceed the Trigger Criteria for a period of three consecutive years, then the Contingency Remedy Plan will be implemented.

3.1.6. Reporting

For those years in which samples are collected quarterly, the laboratory results will be transmitted to NYSDEC within three months of sample collection. The fourth quarter results will be included in an annual report and will not be submitted separately. Included in the quarterly submittal will be data summary tables, laboratory data sheets, chain of custody forms, and ground water sampling field logs. For the years in which samples are collected on an annual basis, the results will be presented in an annual report.

An annual report will be submitted to the NYSDEC four months after the last sampling event of the year. The report will contain the data summary tables and laboratory data sheets, chain of custody forms and ground water sampling field logs not previously submitted. In addition, the annual report will provide a comparison of the ground water data to the Trigger Criteria. Based upon the results of the comparison, the report will provide a recommendation regarding the need to implement the Contingency Remedy Plan. If appropriate, the report will provide recommendations for modifying the sampling frequency or discontinuing monitoring at selected well locations.

A schedule for the first two years of sampling and reporting is summarized below:

Quarter	Sampling Date	Report Due Date
Year 1		
1st quarter	May 1999	August 1999
2nd Quarter	August 1999	November 1999
3rd Quarter	November 1999	February 2000
4th Quarter	February 2000	June 2000 (Annual Report)
Year 2		
1st quarter	May 2000	August 2000
2nd Quarter	August 2000	November 2000
3rd Quarter	November 2000	February 2001
4th Quarter	February 2001	June 2001 (Annual Report)

3.2. Contingency remedy plan

The purpose of the Contingency Remedy Plan, is to provide a description of the remedy that will be implemented in the event that the Trigger Criteria, presented in the GWMP, are exceeded for three consecutive years. The objective of the Contingency Remedy is to recover ground water containing VOCs from the well or the area in the vicinity of the well where the exceedance occurred.

A Contingency Remedy Plan was submitted to the NYSDEC in February 1999. The Contingency Remedy Plan was incorporated into the ROD with two exceptions. The ROD required that test well TW-1 be included and that the plan identify what remedial measures would be taken if the ground water at the site fails to meet the Trigger Criteria after implementation of the Contingency Remedial Plan.

The following sections describe the Contingency Remedy to be implemented, the steps involved in the implementation of the Contingency Remedy, the approach for evaluating the effectiveness of the remedy, as well as the logistics of implementation, the shut-off criteria, O&M Plan, and the conceptual remedial design plan.

3.2.1. Contingency remedy

The Contingency Remedy consists of ground water extraction, treatment, and discharge to the Westchester County Department of Environmental Facilities publicly owned treatment facility (WCDEF). Ground water recovery will be implemented at the well where the concentration of total VOCs exceeds the Trigger Criteria for three consecutive years. For example, if the VOC concentrations in MW-12 trigger the Contingency Remedy, then ground water will be recovered from MW-12. The Contingency Remedy will be implemented sequentially at each well that exceeds the Trigger Criteria for three consecutive years. The ground water will be pumped from the well to the existing treatment system by either a pneumatic pump or an electric submersible pump. The ground water recovery rates from the shallow wells are expected to be in the 0.5 to 2 gpm range and between 1 and 10 gpm in the deep wells. The maximum combined flow from the wells cannot exceed the 15 gpm discharge permit limit. Construction details of the existing wells are presented as Table 5.

The implementation of the contingency remedy will involve the installation of either an air or an electric line and a water transfer line at the well. The extracted ground water will be piped to the existing ground water treatment system located in a shed on the northwestern corner of the main building. A conceptual layout of the wells and subsurface piping that may be installed as part of the contingency remedy are illustrated on Figure 9. A description of the treatment system is presented in Section 3.3. A flow schematic for both the current treatment system and the conceptual modifications, should the Contingency Remedy Plan be triggered, are illustrated on Figure 10.

3.2.2. Implementation of contingency remedy

In accordance with the GWMP, an Annual Monitoring Report will be submitted to the NYSDEC. In the event that the Trigger Criteria for the third consecutive year, the NYSDEC will be notified in the Annual Monitoring Report. Sixty days after submitting the Annual Report, the Contingency Remedy Remedial Design and Implementation Plan will be finalized and submitted to the NYSDEC. This plan will describe the following components for the implementation of the Contingency Remedy:

Description of remedy to be implemented - This section will include a description of the location and design features of the well(s) from which ground water will be recovered and the expected recovery rate and VOC concentration.

Design Document/Construction activities - The type of pump to be used for ground water recovery, a description of the utilities to be installed, modifications to the treatment system, and other necessary design and construction activities will be described. Drawings and other documents that illustrate the system will be included as appropriate. This section will also include a description of the management of construction related wastes.

Regulatory and access issues - Regulatory issues, such as permits, related to the construction and operation of the Contingency Remedy will be presented. In addition, since the property is owned by a third party, access issues which could affect the Contingency Remedy implementation schedule will be addressed.

Operation & Maintenance - This section will describe additional operation & maintenance (O&M) activities, if any, that will be necessary due to the addition of the Contingency Remedy.

Schedule - A schedule for permitting, construction, and other activities necessary for the Contingency Remedy will be presented. The proposed date to begin operation will be included. There is an existing treatment system and other necessary equipment is generally available. Therefore, unless regulatory or access issues create delays, it is anticipated that the Contingency Remedy can be implemented in a relatively short time frame.

Upon receipt of written approval of the implementation plan from the NYSDEC, implementation activities will be initiated.

3.2.3. Effectiveness of contingency remedy

The objective of the Contingency Remedy is to recover ground water with VOC concentrations above the Trigger Criteria , from the impacted well. Therefore, the remedy will be considered effective provided that ground water is being pumped from the well. During the start up of the Contingency Remedy ground water elevations will be monitored in nearby wells to document changes due to the pumping.

The ground water recovered from the well will be analyzed for VOCs in conjunction with the GWMP annual ground water sampling. These data will be used to document changes in the quality of the recovered ground water. It is expected that VOC concentrations recovered from the well will decline with time. Given the variability of subsurface conditions the rate of

decline may vary considerably between wells. A summary of the recovery operation and annual sampling of the recovered ground water will be included in the annual GWMP report.

In the event that, within three years of the implementation of the Contingency Remedy Plan, the total VOC concentration in the well does not decrease to a level below the Trigger Criteria, a review of the ground water recovery system will be completed. This review will evaluate whether changes in the existing pumping rates or pumping locations could improve ground water quality. The result of the review will be presented to the NYSDEC with recommendations. In the event that within five years of the implementation of the Contingency Remedy the VOC concentrations in the well do not decrease to a level below the Trigger Criteria, a review of potential remedial alternatives will be completed. This review will consider conventional and innovative technologies which could significantly reduce the VOC concentrations in the well. The review will evaluate available information on pilot and full-scale demonstrations of technologies for potential application at the site.

A summary of the review will be provided to the NYSDEC. If a proven, cost effective, and readily implementable technology is identified the report will present recommendations regarding the implementation of bench testing, pilot testing, or implementation of the full-scale technology. If no proven, cost effective, and readily implementable technology is identified, the report will recommend continued ground water recovery.

3.2.4. Operations and maintenance

Much of the O&M for the Contingency Remedy will be similar to the O&M for the existing recovery and treatment system. After the Contingency Remedy Plan has been implemented, the O&M plan will be revised as needed. The objective of the O &M activities will be to maintain the well pump and treatment system in proper operating condition. Cumulative discharge rates from the well will be monitored monthly. This information will be used to identify whether mechanical problems or well clogging are limiting the effectiveness of the ground water recovery.

3.2.5. Shut-off criteria

The Contingency Remedy for an individual well will be discontinued when the annual monitoring data is below the Trigger Criteria for two consecutive years.

3.2.6. Regulatory or technological changes

Future changes in governmental regulations may affect the implementation and operation of the Contingency Remedy. For example, the implementation of the Contingency Remedy depends upon maintaining the existing discharge permit with Westchester County. If regulatory changes, such as a lapse of the POTW discharge permit, affect the implementation and operation of the Contingency Remedy, ITT will initiate discussions with the NYSDEC as to the nature of the changes and the impact on the Contingency Remedy. Similarly, technological advances in site remediation will be reviewed; and if a new technology of proven effectiveness is available that is cost-effective and that ITT deems appropriate for the site then ITT will initiate discussions with NYSDEC.

3.3. Ground water recovery and treatment system

3.3.1. Description of ground water recovery and treatment system

In April 1992 a soil excavation program at the former Solvent UST area commenced. The width and length of the excavation was approximately 12 ft x 22 ft. During the excavation activities running sands were encountered and the depth of the excavation was limited to 11.5 ft. A ground water recovery system was installed in the excavation to recover ground water, including that portion of the plume that may have migrated under the building. The recovery system consists of six stainless steel horizontal well points installed at a depth of approximately 10.5 ft and driven 15 ft horizontally beneath the building. The well points discharge to a gravel drain which discharges to a sump designated as RW-2.

The recovery well pump is pneumatic and is activated by hydrostatic level probes. The pump was designed to be capable of conveying up to five gallons per minute although recovery from this well averages less than 0.25 gpm based on the low permeability of the formation. The air supply to the RW-2 pump is provided by an air compressor located in the shed for the treatment system (Figure 2). Air and water lines from the pump to the shed are routed overhead inside the main building.

The existing treatment system removes volatile organic compounds from the recovered ground water prior to discharge to the Westchester County Department of Environmental Facilities publicly owned facility (WCDEF) under an existing permit (Appendix C). The treatment equipment is housed in a shed located at the northwest corner of the main building. The design

of the treatment system was approved by the NYSDEC in April 1993. The basis of design for the existing system is provided in Appendix D.

Inside the shed, the first component of the current treatment system consists of an equalization tank to provide solids settling and flow equalization prior to the VOC treatment tank.

Water from the equalization tank flows by gravity to an air sparging tank maintained under a vacuum of approximately 45 inches of water. A series of short circuit prevention baffles are installed in the air sparging tank to provide sufficient air/water contact time for VOC removal. Air enters the tank through an air sparge header located at the bottom of the tank. The VOCs are transferred from the water to the vapor phase and are removed from the sparging tank by a vacuum blower. The VOC-laden air is then transported through two granular activated carbon (GAC) canisters in series where VOCs are adsorbed onto the carbon. VOC-free air exits the GAC canisters and is used as recycled makeup air for the air sparging tank where the air cycle is repeated.

Treated water is pumped from the air sparging tank through a centrifugal effluent pump controlled by a float switch contained in a wiered wet well within the tank. Water is transported through the treated effluent pump to a floor drain located in the main building where it is discharged to the Westchester County sanitary sewer system.

Between January 18, 2000 and March 20, 2000 the treatment system was upgraded to conform with Y2K requirements and modify the system from an interim remedial measure to a permanent system as prescribed in the ROD. Initial modifications focused on upgrading the controls and allowing for additional flow capacity in the event that the contingency remedial plan is triggered. The modifications are summarized below:

Control System - A programmed logic controller (PLC) was installed, which allows for more effective monitoring of treatment system and future expansion of the recovery well network in the event that the Contingency Remedy Plan is triggered.

Air compressor - A new larger industrial grade compressor was installed to replace a smaller commercial type compressor.

Recovery well RW-2 - A hydrostatic level probe was installed at RW-2 to enhance recovery pump operations at this well.

Equalization Tank - The former oil/water separator is now used as an equalization tank since the oil recovery well is no longer in use.

Autodialer - A new upgraded autodialer was installed to annunciate alarm conditions to up to four selected remote telephone locations. In addition, information regarding the operating conditions can be obtained via remote telephone access.

Flow meter - A new effluent flow transmitter and totalizer was installed to facilitate remote monitoring by the PLC.

Treatment building - An exhaust fan was installed to provide ambient cooling during hot weather conditions.

Process Piping - Piping for water and air was extended for the treatment building to the area of MW-12 as access to this area inside the building was available.

The front of the control panel for the treatment system consists of hand-off-auto (HOA) switches for pumps and blowers, as well as operating and alarm lights. High level, temperature and pressure sensors are installed in the treatment system. If an alarm condition is triggered, the entire system shuts down through control interlocks and remote notification is provided.

Further modifications to the system will occur once the contingency remedy plan is triggered; those contingency modifications are described in Section 3.4.

3.3.2. O&M plan

The Operations & Maintenance Plan for the ground water recovery and treatment system is used as a resource to maintain the proper operation of the equipment for recovering and treating ground water from the former Solvent UST area. An Operations & Maintenance Plan presently exists for the ground water treatment system. The table of contents for this plan is provided as Appendix E. The plan identifies the operational logic of the treatment system, operating instructions and maintenance information for the various equipment components. The system is designed to operate unmanned. Operational data from the system is obtained weekly from the PLC.

Occasionally, the system may shutdown as a result of alarm-triggering conditions such as high temperature or pressure. In the event that a shutdown or alarm condition occurs, the ITT-designated contractor will schedule a diagnostic/repair site visit to occur within five business days. Typically, the system is repaired and made operational during that site visit. However, if a condition is encountered that requires more extensive maintenance or purchasing of replacement parts (that are not on-hand as spare), the system will be repaired as soon as practicable. If the system is shutdown due to equipment malfunction for a period of more than thirty consecutive days, ITT will notify NYSDEC regarding the nature of the shutdown and the time frame for the system to become operational.

Periodic maintenance will occur on the system in accordance with frequencies prescribed in the O&M Manual. Periodic maintenance activities include:

- compressor oil level check and as-needed replacement quarterly
- treatment tank cleanouts (quarterly)
- vapor-phase carbon changeouts (as-needed)
- recovery pump cleaning and maintenance (quarterly)

A copy of the O&M Plan is maintained in the shed housing the ground water treatment system. The O&M Plan will be updated as necessary based on equipment upgrades or addition of recovery wells.

3.4. Contingency remedy conceptual modifications

The general basis for the Continency Remedy Plan is the recovery of ground water from additional wells with treatment by the existing treatment system. In order for the system to handle recovered ground water from these wells, certain equipment and control modifications will be required. Once a well triggers the contingency plan, a final design will be prepared for the necessary recovery pump and conveyance lines to the treatment system. Upon approval of the design, installation of the pump, and conveyance lines will proceed. The following is a general description of the anticipated modifications.

The conveyance pipe will be routed based on access at the site at the time the contingency plan is triggered. Pump selection will also be based on the pump models currently available at that time. The recovery pump will be sized based on the estimated maximum yield of the well (see Basis of Design

Summary, Appendix D). The flow rate of the pumps will be controlled so that the maximum effluent discharge does not exceed the permitted WCDEF discharge flow rate limit, presently 15 gpm.

Based on the concentrations of VOCs and the number of recovery wells that are hooked up to the treatment system, equipment may be upgraded to maintain adequate treatment to permitted WCDEF levels. This could include upgrading the blower to increase the air-to-water ratio and/or adding additional GAC canisters to remove VOCs from the vapor phase. Changes to the design parameters that would necessitate these modifications are provided in the Basis of Design Summary, Appendix D. A flow schematic for both the current treatment system and the conceptual modifications should the Contingency Remedy Plan be triggered are illustrated on Figure 10. The proposed treatment equipment and valve isometric drawing is shown on Figure 11.

4. Indoor Air Sampling

Pursuant to the ROD, an Indoor Air Monitoring Plan has been instituted to evaluate if VOCs from the subsurface soil and ground water are present in the building. As of May 1, 2000, the indoor air had been sampled on five occasions with the approval of the NYSDEC and NYSDOH. The sampling procedures, sample locations and evaluation methods presented below are consistent with the two previous sampling events. The results from the first five sampling events are summarized on Table 6 and the data indicate that the Hazard Quotient and Cancer Risk are within the acceptable guidelines set forth in the NCP. It is important to note that indoor air samples have been collected from the area occupied by the American Tile Company and the area occupied by the Former International Health Specialist Center. International Health Specialists vacated the area in between January 1999 and April 1999. During a site visit completed at the end of May 2000, it was noticed that the Former International Health Specialist Center portion of the building was being modified. Reportedly, a photography studio (Davis Studio) will be moving into this area.

In addition, a water main pit which may provide a preferred conduit for VOCs to migrate from the subsurface soils into the building is located in the front of the building, within the area occupied by American Tile Company. The water main pit was modified in October 1999 as described in Section 4.5.

4.1. Sampling procedure

Indoor air sampling will be completed semi-annually for the years 2000 and 2001. The semi-annual sampling will be completed during normal business hours. One sampling event will be completed during the winter and the other during the summer. The winter sampling event will occur between December and February and the summer event will occur between July and September. Prior to conducting the sampling the building and outdoor area in the vicinity of the building will be inspected in order to identify and minimize conditions that may adversely affect the sampling. The inspection will document the indoor and outdoor ambient conditions,

an inventory of chemicals and materials stored or used within the building, and potential on-site and off-site VOC influences.

Two indoor air samples and one outdoor ambient air sample will be collected and analyzed in accordance with USEPA method TO-14 - "Determination of volatile organic compounds (VOCs) in ambient air using SUMMA passivated canister sampling and gas chromatographic analysis". The samples will be collected in 6 liter canisters over a 2-hour period using laboratory calibrated flow controllers.

The canisters will be located three feet from the floor or ground surface. The canisters will be located in the showroom of the Tile Showroom and near the center of the DavisStudios as indicated on Figure 12. The samples will not be located adjacent to doorways, windows or heating and ventilation vents which may adversely affect the sample. An outdoor air sample will be collected to evaluate background VOC concentrations. It should be recognized that the outdoor sample will be collected upwind of the facility and that the location will change depending upon wind direction.

For quality assurance/quality control a duplicate indoor air sample will be collected. A trip blank will also accompany the sample shipment to the laboratory.

4.2. Evaluation method

Each sample result will be compared to previous data through the use of Shewart control charts. In addition, the data will be evaluated for potential long-term trends using the Mann-Kendall test. If no significant upward trend is identified at the end of two years and there is no value which exceeds the 3S limit, in the Shewart control charts, then indoor air sampling will be discontinued at the site. If a significant upward trend is identified then sampling will continue.

Shewart control charts: Shewart control charts are a widely applied and useful graphical means of assessing the consistency of temporal data with stable baseline performance levels. Control charts are useful graphical tools since they provide a method for identifying if the concentrations exceed

typical baseline performance levels, given the variability in the baseline data.

The essential features of the control chart include the upper control limits that define the level above which a observed value would be considered to be an outlier from the baseline data. Two levels of control limits will be developed (2S and 3S) from the available indoor air data. The 2S limit approximates 2 standard error shifts from the overall average. For a stable process, the probability of a plotted point falling outside the 2S line is <5%. The 3S limit approximates 3 standard error shifts from the overall average. For a stable process, the probability of a plotted point falling outside the 3S line is <0.5%. For this project, the 2S control limit will be considered as a warning level, indicating a potential shift from baseline, and the 3S limit will be used as a basis for continuing indoor air monitoring.

A control chart will be constructed using the available baseline indoor air sampling data set. A control chart will be constructed for each parameter that is detected. The overall average, and upper 3S and 2S control limits will be identified according to the methods described by Gilbert (Gilbert, R.O., 1987, Statistical Methods for Environmental Pollution Monitoring, Van Nostrand Reinhold Company, Inc., New York, New York.).

Mann-Kendall test: Sampling data currently is available for five quarters at the site. Two more years of sampling will provide a total of nine data points. Since the statistical analysis will be based on relatively few data points, non-parametric techniques will be used in the analyses. The Mann-Kendall test will be utilized to evaluate potential long-term trends. A description of the seasonal Mann-Kendall test is presented in Gilbert (Gilbert, R.O., 1987, Statistical Methods for Environmental Pollution Monitoring, Van Nostrand Reinhold Company, Inc., New York, New York.).

Should the indoor air monitoring data demonstrate the need for remedial activities to reduce impacts to indoor air, then an indoor air remedial plan will be developed. This remedial plan will evaluate engineering modifications to the building, such as floor sealing or changes to the heating and ventilation system, and present the recommended remedial approach to the NYSDEC. The remedial plan will include a schedule for the implementation of the remedy.

4.3. Future sampling

Once the indoor air sampling is discontinued, no future air sampling will be completed unless significant modifications to the building or site conditions are made. The NYSDEC and NYSDOH will be informed of any significant changes to the site and changes in occupancy when the ITT designated contractor is informed. The need for additional sampling will be discussed amongst the various parties. Such modifications to the building or to site conditions may include implementation of a new remedial technology at the site, modifications to the floor of the building, significant modifications to the heating and ventilation system, and new information regarding potential sources to indoor air.

4.4. Reporting

The indoor air monitoring results will be transmitted to the NYSDEC and NYSDOH within ten weeks of sample collection. Following , the two years of semi-annual sampling, the data will be evaluated according to the methodology presented in Section 4.2. Recommendations will be presented to continue or discontinue the indoor air monitoring.

4.5. Water main pit description and modification

The water main pit, which may have provided a preferred conduit for VOCs to migrate from the subsurface soils into the building is located in the front of the building inside an electrical closet along the wall of the portion of the building that is currently leased to American Tile Supply. The pit was subsequently modified in October 1999 to reduce the potential for migration of VOCs into the building.

Prior to modification, the pit was 2 ft-4 inches by 2 ft-2 inches and 5 ft deep. The wall of the pit that faces Hoyt Avenue is poured concrete. The other three interior walls of the pit are concrete block. The floor of the pit is poured concrete. At the base of the pit, a 2-inch copper water pipe enters from the wall facing Hoyt Avenue. Inside the pit and resting on the concrete floor, the pipe has a shut-off valve. The 2-inch water pipe then extends vertically up the pit wall to a water meter which is located slightly above the finished floor elevation of the building. In addition, there is a 6-inch wastewater sewer pipe with a capped cleanout resting on the concrete floor.

The sewer pipe enters and exits the pit at grade with the concrete floor. Formerly, a ½ inch thick steel plate covered the pit except where a rectangular cutout exists to allow the vertical water pipe to exit.

The pit was modified in accordance with local building codes in October 1999. The following modifications were performed.

- Certain areas of the concrete floor surrounding the pit were filled in with concrete to provide an integral, uniform floor.
- The existing recessed lip around the perimeter of the pit was leveled with concrete and a perimeter gasket was installed.
- Marine grade plywood (3/4-inch) was installed over the gasket to cover the pit and an industrial grade sealant was applied to the plywood.

5. Site Security

Pursuant to the ACO, site security measures are required to restrict unauthorized access to contaminated materials, wells and the ground water treatment system. Presently, the building is subdivided into two tenant-occupied spaces with separate entrances. Paved parking areas for each tenant are located on the eastern and western portions of the property, respectively. A gated eight-foot high chain link fence surrounds the perimeter of each parking area. Wells located on the site are within the fenced areas and are flush-mounted with locking covers. The ground water treatment system is housed in an enclosed shed with locked overhead door. These security measures will be maintained while the wells and treatment system are in use, for a period up to thirty years. Negotiations between the current property owner and ITT for implementation of site security are expected to be completed by December 31, 2000.

6. Access/Use Restrictions

In accordance with the ROD, the deed for the property will be amended to restrict land use and activities that would expose workers to contaminated materials, and to prohibit the installation of potable wells. Access to the wells and treatment system shed will only be provided to the property owner, ITT and its contractors for periodic monitoring and maintenance activities. Negotiations between the current property owner and ITT for implementation of the deed restrictions are being conducted and are expected to be completed by December 31, 2000.

The fenced area will restrict access to the property to the tenants and their customers. The presence of the building slab and paved areas of the site will serve to limit access to subsurface materials.

7. Maintenance of Site Fencing and Asphalt Cover

Pursuant to the ROD, inspections to assess integrity of the fencing and the asphalt cover will be conducted quarterly, concurrent with other site monitoring and maintenance activities that will occur on a routine basis. Should repairs be required, ITT will coordinate these activities with the property owner. Results of the inspections (checklist format) will be kept in a log book to be maintained by ITT's designated contractor.

8. Health and Safety Plan

A Health and Safety Plan (HASP) to protect workers at the site and the community during remedial activities has been prepared in accordance with 29 CFR 1910 by a certified health and safety professional. The HASP, which is presented in Appendix F, describes the safety precautions to be completed for the following activities:

1. O&M of the ground water recovery and treatment system
2. Ground water sampling
3. Trenching (to be completed if the contingency remedial plan is implemented)

9. Permitting

The treated effluent from the ground water treatment system is discharged to the Westchester County sewer system in accordance with a discharge permit granted by the Westchester County Department of Environmental Facilities (WCDEF). The current permit is valid for a period of two years and requires monthly monitoring and reporting of volatile organic compounds (Method 8021) and oil & grease (Method 413.1) in the treated effluent. Sampling is conducted at an influent point (presently RW-2) and at a sample port located on the effluent line to provide data on RW-2 and treatment system efficiency. If more recovery wells are connected to the system, an influent sample will continue to be collected at RW-2 as well as at a sample point located at the combined influent manifold leading into the treatment system. Influent data from other recovery wells would be included as part of the routine monitoring specified in the ground water monitoring plan.

The permit limits certain volatile organic compounds (grouped as Total Toxic Organics) to a discharge concentration of 2.1 mg/L. The oil & grease limit is 100 mg/L. Flow of the treated effluent is limited to 15 gpm. ITT will continue to renew the discharge permit as necessary for the duration of the treatment system operation. If future chemical or flow limitations are set forth by WCDEF that would require modifications to the treatment system, ITT will notify NYSDEC. Similarly, ITT will notify NYSDEC in the event that discharge of treated ground water into the sewer is no longer permitted.

No other environmental permits are currently required to operate the treatment system. Spent GAC canisters will continue to be manifested and disposed off-site at a permitted facility using the Mamaroneck facility USEPA ID#NYD001604420.

In order to implement the Contingency Remedy Plan a building permit will be required from the Village of Mamaroneck. The permit includes electrical modifications, plumbing modifications and changes to the exterior of the building.

10. Reporting and Implementation Schedule

The following reporting requirements apply to the various activities being conducted at the site.

Ground Water Treatment System

Implementation

The ground water extraction system has been operating since 1992 and will continue to operate for a period of 30 years or as required.

- Effluent samples from the treatment system will be collected monthly as required by the discharge permit. Sample frequency may be modified if approved by the WCDEF. Maintenance of the treatment system will be conducted quarterly.

Reporting

- If the system is shutdown due to equipment malfunction for a period of more than thirty consecutive days, ITT will notify NYSDEC regarding the nature of the shutdown and time frame for the system to become operational.

- Monthly Reports to the WCDEF are required. The report summarizes the flow for each month as well as the treatment system effluent concentrations.

- The operation and maintenance activities at the Solvent UST ground water extraction system will be reported to the NYSDEC in the Annual GWMP Report which is discussed below.

Ground Water Monitoring Plan

Implementation

- The first GWMP sampling event was completed on May 27, 1999 following approval of the ROD. Monitoring wells MW-2, MW-2D, MW-3, MW-3D, MW-11, MW-12 and test well TW-1 will continue to be sampled for VOCs. The sampling frequency will be quarterly for two years, and annually thereafter for a period 30 years.

Reporting

- For those years in which samples are collected quarterly, the laboratory results will be transmitted to NYSDEC within three months of sample collection. A schedule for sampling during the first two years is presented below. Included in the quarterly submittal will be data summary tables, laboratory data sheets, chain of custody forms, and ground water sampling field logs. The fourth quarter results will be included in an annual report and will not be submitted separately.

  An annual report will be submitted to the NYSDEC four months after the last sampling event of the year. For the years in which samples are collected on an annual basis, the results will be presented in the annual report. The report will contain the data summary tables and laboratory data sheets, chain of custody forms and ground water sampling field logs not previously submitted. In addition, the annual report will contain an evaluation of the data collected since the last annual report including a discussion at trends and comparison of the ground water data to Trigger Criteria. Based upon the results of the comparison, the report will provide a recommendation regarding the need to implement the Contingency Remedy Plan. If appropriate, the report will provide recommendations for modifying the sampling frequency or discontinuing monitoring at selected well locations. In addition, the report will present sampling results, flow data and a description of the O&M activities from the ground water treatment system.

Contingency Remedy Plan

Implementation

- The schedule to implement this plan is not defined. The plan will be implemented only in the event that the Trigger Criteria, presented in the GWMP, are exceeded for three consecutive years. Sixty days after submitting the Annual Report, a Contingency Remedy Remedial Design and Implementation Plan will be submitted to the NYSDEC for approval. The plan will include a schedule for implementing the Contingency Remedy Plan.

Indoor Air Monitoring Plan

Implementation

- This plan was initiated in December 1998. Indoor air samples have been collected on five occasions. The next sampling event is to be completed between July 1 and September 1, 2000. The water main pit located in the front of the building was modified to provide a better seal in October 1999.

Reporting

- The indoor air monitoring results will be transmitted to the NYSDOH and NYSDEC in a letter within 10 weeks of sample collection. The results of the statistical evaluation will be presented 12 weeks after the winter 2001 sample is collected. Recommendations will be made to continue monitoring or to discontinue monitoring.

Site security

Implementation

- The site security discussed in Section 5 has been implemented and will continue to be in-place for a period of 30 years or as required.

Access/use restrictions

Implementation

- The deed for the property is expected to be amended by December 31, 2000 to restrict land use and activities that would expose contaminated materials to workers, and to prohibit the installation of potable wells. Consistent with present procedures access to the wells and treatment system shed will only be provided to the property owner, ITT and its contractors for periodic monitoring and maintenance activities.

Maintenance of site fencing and asphalt cover

Implementation

- Inspections regarding the integrity of fencing, asphalt cover, wells and treatment system will be conducted quarterly beginning in November 1999. The inspection will continue on a quarterly basis for a period of 30 years or as required

Other Remedial Components

- Problems, changes, or other notable events associated with the remedial program will be presented in the Annual Report.

Remedial Program Element	Implementation\ Sampling Schedule	Reporting Schedule
Ground Water Treatment System	Operating since 1992 and will continue to operate.	If system down for more than 30 days NYSDEC will be notified.
O&M of Ground Water Treatment System	Ongoing maintenance schedule detailed in O&M plan. Collect quarterly effluent sample and flow totalizer reading.	Quarterly reports to WCDEF. Annual reporting of O&M to NYSDEC.
Ground Water Monitoring Plan	Initiated May 1999. Quarterly first two years, annual years 3-30.	Quarterly first two years, annual years 3-30.
	Year 1 - May 1999	August 1999
	August 1999	November 1999
	November 1999	February 2000
	February 2000	June 2000 (Annual Report)
	Year 2 - May 2000	August 2000
	August 2000	November 2000
	November 2000	February 2001
	February 2001	June 2001 (Annual Report)
Contingency Remedy	Not defined	60 days
Indoor Air Monitoring Program	July - Sept 2000 Dec 2000 - Feb 2001 July - Sept 2001December 2001 - Feb 2002	Data transmittal - Ten weeks following sample collection. Statistical evaluation completed 12 weeks after Dec - Feb 2001-2002 sampling event.
Site Security	Ongoing	Not applicable
Access\Use Restrictions	Deed restriction January 4, 2000	Not applicable
Maintenance of Site Fencing and Asphalt Cover	November 1999, quarterly thereafter	Included in Annual Report

11. Project Contacts

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12. Remedial Action Cost Estimate

The remedial action cost estimate is presented in Table 7. The cost estimate is based on the Alternative 4 Cost Estimate presented in the January 1999 Feasibility Study for this site. Modification to the cost estimate have been made to reflect the following additional activities required by the ROD and to reflect the remedial activities completed to date:

- Sealing of the water main pit
- Addition of TW-1 to the ground water monitoring program
- Performance of four indoor air monitoring events
- Completion of fencing
- Completion of treatment system upgrade
- Completion of one year of monitoring

Consistent with Alternative 4 assumptions used in the Feasibility Study, the remedial action cost estimate is based on the continued ability to discharge to the Westchester County sewer system. Further, the Contingency Remedy Plan assumes that only wells MW-2D and MW-12 will be triggered over the 30 year period.

Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-2	MW-2	MW-2	FIELD DUP MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2
COLLECTED:	6/88	8/89	7/31/91	7/31/91	10/24/91	2/19/92	4/15/92	8/12/92	11/5/92	2/17/93	5/24/93	8/19/93	11/9/93	2/15/94	6/1/94	8/23/94	11/21/94
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA
Benzene	ND	29	17	19	16	ND	ND	17	11	8	10	22	ND	7 J	14	12	13
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA
Chloroethane	ND	18	2	2	2	NA	NA	5	3	6	13	ND	ND	ND	4 J	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 J	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	123	63	47	42	32	22	60	46	22	22	ND	35	14	17	16	11	18
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	NA	ND	83	95	81	19	ND	24	37	33	18	32	13	19	14	16	14
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5 J	ND	ND	ND	1 J
1,1,1-Trichloroethane	94	16	ND	ND	ND	ND	ND	ND	ND	21	10 J	ND	ND	ND	2 J	6 J	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	4	3	2	2	2	ND	ND	ND	ND	1	1 J	ND	ND	ND	1 J	1 J	1 J
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA
Vinyl Chloride	ND	200	120	120	120	ND	130	100	100	81	88	120	130	110	61	78	78
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	NA	NA	3	3	1	1	1	1	ND	ND	ND	ND	ND	NA	ND	ND	ND
Total VOCs	221	385	251	236	233	41	190	192	173	157	143	209	188	44	109	64	127

Notes:
All vales reported in ug/l (ppb), unless noted otherwise.
J - Indicates an estimated value.
D - Identified in analyses at secondary dilution factor.
NA - Not analyzed
ND - Not detected
Compound is detected.

2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
4/92 samples analyzed using GC/MS methods (8010/8020).
6/88 samples collected by TRC.
+ - Elevated detection limit due to matrix interference.
2/94 Samples validated by H2M Labs, Inc.
2/92 and 4/92 samples validated by O'Brien & Gere Engineers, Inc.

Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2
COLLECTED:	2/27/95	5/31/95	8/29/95	11/30/95	2/27/96	5/30/96	8/27/96	11/26/96	2/25/97	5/28/97	8/26/97	11/26/97	2/26/98	5/28/98	8/24/98	11/20/98
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	8	9	14	4	5	5	8	10	6	5	4	ND	4	5	7	13
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75	74	76	42	22	45	18	18	33	8	7	21	15	18	18	16
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	12	9	11	8	10	18	26	10	7	2	1	17	6	26	6	19
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	3	2	ND	1	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	51	38	100	26	18	49	52	54	53	35	22	80	42	47	5	33
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	ND	ND	331	ND	ND	ND	ND	ND	5.8	ND	ND	ND	ND	ND	ND	ND
Total VOCs	89	73	141	71	75	69	81	92	98	55	38	108	67	76	82	91

Notes:
All vales reported in ug/l (ppb), unless noted otherwise.
J - Indicates an estimated value.
D - Identified in analyses at secondary dilution factor.
NA - Not analyzed
ND - Not detected
Compound is detected.

2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
4/92 samples analyzed using GC/MS methods (8010/8020).
6/88 samples collected by TRC.
+ - Elevated detection limit due to matrix interference.
2/94 Samples validated by H2M Labs, Inc.
2/92 and 4/92 samples validated by O'Brien & Gere Engineers, Inc.

Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D
COLLECTED:	2/19/92	2/19/92	4/15/92	8/12/92	11/5/92	2/17/93	5/24/93	8/19/93	10/9/93	2/15/94	6/2/94	8/23/94	11/21/94	2/27/95	5/31/95	8/29/95	11/30/95	2/27/96	5/30/96	8/27/96
Acetone	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	ND	5	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	16	6	ND	2	1	1	5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	22	24	ND	10	8	4	4	2	5	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	124	28	ND	80	36	52	74	9	10	8 J	710	1600	3300	6500	5900	3800	3800	1700	1100	1300
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	22	27	ND	7	3	3	3	1	6	5	94	260	680	1300	1200	780	280	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	16	20	25	6	2	1	5	1	2	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	11	10.8	1	5.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	91	110	53	34	27	12	28	44	27	25	804	1860	3980	7800	7100	5590	4080	1700	1100	1300

Notes:
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Compound is detected.

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Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
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Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D	MW-2D
COLLECTED:	11/26/96	2/25/97	5/28/97	8/26/97	11/26/97	2/26/98	5/28/98	8/24/98	11/20/98
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1200	1200	1400	1000	670	2100	1100	1600	1500
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	130	110	ND	140	84 J	62	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	1200	1200	1530	1110	670	2240	1184	1662	1500

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2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
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Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-3	MW-3	MW-3	MW-3	MW-3DL	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
COLLECTED:	6/88	7/31/91	10/24/91	2/19/92	2/19/92	4/15/92	8/12/92	11/5/92	2/17/93	5/24/93	8/19/93	10/9/93	6/1/94	8/24/94	11/21/94	2/27/95	5/31/95	8/29/95	11/30/95
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	[redacted]	ND	ND	ND	[redacted]	[redacted]	ND	ND	ND	ND	2	ND	ND	ND	ND	ND
Dibromochloromethane	[redacted]	[redacted]	ND	ND	ND	[redacted]	[redacted]	[redacted]	ND	ND	[redacted]	ND	ND	[redacted]	ND	ND	ND	ND	ND
1,1-Dichloroethane	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
1,2-Dichloroethane	[redacted]	ND	ND	ND	ND	[redacted]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	[redacted]
1,1-Dichloroethene	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
1,2-Dichloroethene (total)	NA	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	ND	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	[redacted]	ND	ND
Trans-1,3-Dichloropropene	ND	[redacted]	ND	ND	ND	ND	[redacted]	[redacted]	ND	ND	[redacted]	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	[redacted]	[redacted]	[redacted]	ND	[redacted]	[redacted]	[redacted]	ND	[redacted]	ND	ND	[redacted]	ND	[redacted]	[redacted]	[redacted]	[redacted]
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
1,1,2-Trichloroethane	ND	[redacted]	ND	10	ND	ND	[redacted]	[redacted]	ND	ND	[redacted]	ND	ND	ND	ND	[redacted]	[redacted]	ND	[redacted]
Trichloroethene	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	ND	[redacted]	[redacted]	ND	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	ND	NA	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	NA	[redacted]	ND	[redacted]	NA	[redacted]	[redacted]	[redacted]	ND	ND	ND	[redacted]	[redacted]	[redacted]	NA	ND	ND	ND	ND
Total VOCs	662	1720	1655	1241	830	503.9	116	120	17	735	168	414	154	42	377	28	96	380	228

Notes:
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NA - Not analyzed
ND - Not detected
[redacted] Compound is detected.

2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
4/92 samples analyzed using GC/MS methods (8010/8020).
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+ - Elevated detection limit due to matrix interference.
2/94 Samples validated by H2M Labs, Inc.
2/92 and 4/92 samples validated by O'Brien & Gere Engineers, Inc.

Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
COLLECTED:	2/27/96	5/30/96	8/27/96	11/26/96	2/25/97	5/28/97	8/26/97	11/26/97	2/26/98	5/28/98	8/24/98	11/20/98
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6	3 J
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	8	7 J	32	10	8	16	14	53	16	ND	6 J	40
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	18	7 J	230	40	37	18	110	34	12 J	18	87	40
1,2-Dichloroethene (total)	1 J	5 J	9 J	ND	2 J	ND	ND	3 J	ND	ND	16	3 J
Dichloromethane	ND	5 J	14 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	2 J	5 J	7 J	ND	25	12	11	6	1 J	3 J	18	9
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	13	39	ND	65	23	8	60	17	3 J	4 J	42	18
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	3 J	12	ND	ND	ND	ND	3 J	ND	ND	6 J	2 J
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs	42	159	382	273	83	22	234	79	6	34	205	93

Notes:
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Compound is detected.

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SAMPLE ID:	MW-3D	MW-3DDL	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D
COLLECTED:	2/19/92	2/19/92	4/15/92	4/15/92	8/12/92	11/5/92	2/17/93	5/24/93	8/19/93	10/9/93	6/1/94	8/24/94	11/21/94	2/27/95	5/31/95	8/29/95	11/30/95	2/27/96	5/30/96	8/27/96
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2 J	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	16	ND	ND	29	12	28	38	27	18	2	21	39	27	9	6	5	13	3	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	19	29	26	8 J	17	19	41	13	16	4	11	ND	ND	6	6	5	8	3	ND	ND
1,2-Dichloroethene (total)	13	16	ND	ND	15	27	44	13	11	4	9	10	ND	4	2	3	14	11	ND	ND
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	420	320	190	190 J	150	160	140	82	60	65	82	ND	11	9	16	19	15	16	2.4	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	330	220	157 J	65	170	370	470	170	210	61	171	220	110	46	29	48	12	7	5	19
1,1,2-Trichloroethane	ND	ND	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	9	15	7	17 J	ND	11	15	ND	ND	3	4	ND	ND	4	3	2	3	1.4	1	ND
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	ND	ND	ND	1.2 J	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	ND	ND	ND	9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	12	NA	337.4	392.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	807	560	337.4	392.3	564	608	748	305	317	129	157	269	148	90	64	83	37	21	10	14

Notes:
All vales reported in ug/l (ppb), unless noted otherwise.
J - Indicates an estimated value.
D - Identified in analyses at secondary dilution factor.
NA - Not analyzed
ND - Not detected
Compound is detected.

2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
4/92 samples analyzed using GC/MS methods (8010/8020).
6/88 samples collected by TRC.
+ - Elevated detection limit due to matrix interference.
2/94 Samples validated by H2M Labs, Inc.
2/92 and 4/92 samples validated by O'Brien & Gere Engineers, Inc.

Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-3D
COLLECTED:	11/26/96	2/25/97	5/28/97	8/26/97	11/26/97	2/26/98	5/28/98	8/24/98	11/20/98
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	2	2	2	3	ND	2	1	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	2	ND	2	2	ND	2	2	ND	ND
1,2-Dichloroethene (total)	1	1	1	ND	ND	ND	ND	ND	ND
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	30	5	10	6	3	5	3	1	2
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	9	6	6	4	1	2	1	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	1	2	3	1	2	1	ND	ND
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	45	16	18	17	5	13	8	3	2

Notes:
All vales reported in ug/l (ppb), unless noted otherwise.
J - Indicates an estimated value.
D - Identified in analyses at secondary dilution factor.
NA - Not analyzed
ND - Not detected
Compound is detected.

2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
4/92 samples analyzed using GC/MS methods (8010/8020).
6/88 samples collected by TRC.
+ - Elevated detection limit due to matrix interference.
2/94 Samples validated by H2M Labs, Inc.

Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-11	MW-11DL	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11
COLLECTED:	2/15/94	2/15/94	6/1/94	8/24/94	11/21/94	2/27/95	5/31/95	8/29/95	11/30/95	2/27/96	5/30/96	8/27/96	11/26/96	2/25/97	5/28/97	8/26/97	11/26/97	2/26/98	5/28/98
Acetone	22	21 JD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	20	14 JD	ND	ND	6	8	4	5	3	5	3	2	2	3	ND	2	ND	2	1
Bromodichloromethane	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	330 D	330 D	ND	ND	2	7	14	13	10	2	2	1	ND	2	ND	1	ND	3	4
Chloroform	ND	ND	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	69	76 JD	16	7	10	9	8	2	3	4	14	2	8	3	ND	2	7	3	2
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	9 J	6 JD	7	5	6	4	3	1	4	6	10	2	18	11	ND	10	18	8	13
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	29	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	21	ND	38	31	3	4	5	1	3	5	4	ND	3	3	ND	2	2	2	2
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	6	3 JD	26	4	6	6	4	3	4	5	3	ND	15	13	ND	4	8	12	3
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	6	5 JD	16	10	3	8	7	2	8	8	12	2	14	9	ND	6	7	5	4
2-Butanone	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	ND	12 JD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	18	12 JD	ND	ND	2	2	ND	ND	ND	ND	ND	ND	3	1	ND	1	3	3	ND
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	482	469	273	236	38	63	40	27	35	39	52	12	53	37	0	36	84	24	16

Notes:
All vales reported in ug/l (ppb), unless noted otherwise.
J - Indicates an estimated value.
D - Identified in analyses at secondary dilution factor.
NA - Not analyzed
ND - Not detected
Compound is detected.

2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
4/92 samples analyzed using GC/MS methods (8010/8020).
6/88 samples collected by TRC.
+ - Elevated detection limit due to matrix interference.
2/94 Samples validated by H2M Labs, Inc.
2/92 and 4/92 samples validated by O'Brien & Gere Engineers, Inc.

Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-11	MW-11
COLLECTED:	8/24/98	11/20/98
Acetone	NA	NA
Benzene	2	7
Bromodichloromethane	ND	ND
Carbon Disulfide	NA	NA
Chloroethane	3	3
Chloroform	ND	ND
Dibromochloromethane	ND	ND
1,1-Dichloroethane	ND	8
1,2-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethene (total)	2	10
Dichloromethane	ND	ND
Trans-1,3-Dichloropropene	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND
Tetrachloroethene	ND	ND
Toluene	ND	ND
1,1,1-Trichloroethane	ND	ND
1,1,2-Trichloroethane	ND	ND
Trichloroethene	ND	ND
2-Butanone	NA	NA
2-Hexanone	NA	NA
Methylene Chloride	NA	NA
Styrene	NA	NA
Vinyl Chloride	ND	ND
Xylene (total)	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	NA	NA
Total VOCs	7	33

Notes:
All vales reported in ug/l (ppb), unless noted otherwise.
J - Indicates an estimated value.
D - Identified in analyses at secondary dilution factor.
NA - Not analyzed
ND - Not detected
Compound is detected.

2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
4/92 samples analyzed using GC/MS methods (8010/8020).
6/88 samples collected by TRC.
+ - Elevated detection limit due to matrix interference.
2/94 Samples validated by H2M Labs, Inc.
2/92 and 4/92 samples validated by O'Brien & Gere Engineers, Inc.

Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12
COLLECTED:	2/15/94	6/1/94	8/24/94	11/21/94	2/27/95	5/31/95	8/29/95	2/27/96	2/27/96	8/27/96	11/26/96	2/25/97	5/28/97	8/26/97	11/26/97	2/26/98	5/28/98	8/24/98	11/20/98
Acetone	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	1 J	2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	130	ND	ND	ND	ND	ND
Chloroform	8 J	18	15	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	10	21	ND	15	74	63	ND	ND	ND	ND	ND	ND	ND	1100	ND	200	290	ND	290
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	34	34	ND	340	ND	ND	ND	ND	500	100	630	520	400	670	550	
1,2-Dichloroethene (total)	49	20	50	20	21	450	1000	ND	ND	ND	720	1100	1100	720	600	640	890	900	
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	6 J	4 J	3 J	51	200	1850	4800	2400	5200	2400	6100	5400	940	3700	2200	2100	6900	3800	
Toluene	ND	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	20 J	13 J	16 J	21 J	220	2000	13000	7400	14000	7800	18000	17000	3900	12000	8300	6400	15900	9900	
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	75	50	37	53	59	150	650	ND	810	ND	ND	1600	650	1200	910	730	1100	1300	
2-Butanone	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	3 J	ND	ND	2 J	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbon (mg/kg)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	168	97	72	132	457	886	3250	19690	9800	20010	10200	24820	25600	7020	18250	12730	10560	23560	16740

Notes:
All vales reported in ug/l (ppb), unless noted otherwise.
J - Indicates an estimated value.
D - Identified in analyses at secondary dilution factor.
NA - Not analyzed
ND - Not detected
Compound is detected.

2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
4/92 samples analyzed using GC/MS methods (8010/8020).
6/88 samples collected by TRC.
+ - Elevated detection limit due to matrix interference.
2/94 Samples validated by H2M Labs, Inc.
2/92 and 4/92 samples validated by O'Brien & Gere Engineers, Inc.

Table 1
ITT SEALECTRO
MAMARONECK, NY

GROUND WATER VOLATILE ORGANIC DATA SUMMARY

SAMPLE ID:	MW-13	MW-13DUP	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13
COLLECTED:	2/15/94	2/15/94	6/1/94	8/23/94	11/21/94	2/27/95	5/31/95	8/29/95	2/27/96	5/30/96	8/27/96	11/26/96
Acetone	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA*
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
Carbon Disulfide	0.7 J	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA*
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
Chloroform	ND	ND	ND	5 J	ND	ND	ND	ND	ND	ND	ND	NA*
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
1,1-Dichloroethane	24	26 D	ND	ND	4 J	2 J	1 J	3	2 J	1 J	4	NA*
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
1,2-Dichloroethene (total)	ND	ND	ND	ND	ND	1 J, 2 J	ND	ND	ND	ND	ND	NA*
Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
Tetrachloroethene	ND	ND	5 J, 3 J	ND	ND	2 J	ND	ND	ND	ND	ND	NA*
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
1,1,1-Trichloroethane	ND	2 J, ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
Trichloroethene	2 J	2 J	2 J	2 J	2 J	2 J	1 J	2	ND	ND	1 J	NA*
2-Butanone	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA*
2-Hexanone	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA*
Methylene Chloride	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA*
Styrene	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA*
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA*
Total Petroleum Hydrocarbon (mg/kg)	NA	NA	ND	ND	ND	ND	ND	1	ND	ND	ND	NA*
Total VOCs	26.7	30	3	12	6	6	2	11	2	1	5	--

Notes:
All vales reported in ug/l (ppb), unless noted otherwise.
J - Indicates an estimated value.
D - Identified in analyses at secondary dilution factor.
NA - Not analyzed
ND - Not detected
Compound is detected.
* - Well abandoned 11/14/96

2/92 samples analyzed using GC/MS method (8240).
Other samples analyzed using Method 8010/8020 by OBG Labs.
2/94 Samples analyzed using GC/MS Method (NYSDEC ASP-91-1).
4/92 samples analyzed using GC/MS methods (8010/8020).
6/88 samples collected by TRC.
+ - Elevated detection limit due to matrix interference.
2/94 Samples validated by H2M Labs, Inc.
2/92 and 4/92 samples validated by O'Brien & Gere Engineers, Inc.

TABLE 2

ITT SEALECTRO

EVALUATION TO SELECT REPRESENTATIVE VOCs

Monitoring Well	Compound	NYS Class GA Standard (ug/L)	Maximum Concen. (ug/L)	# of Events Compound Detected	# of Events Compound Analyzed	% of Sampling Events Compound Detected	% of Total
MW-2	**Benzene**	**1**	**29**	**26**	**30**	**87**	**4.5**
	Chloroethane	**5**	**18**	**8**	**31**	**26**	**2.8**
	Chloroform	7	1	1	31	3	0.2
	1-1-Dichloroethane	**5**	**123**	**30**	**31**	**97**	**19**
	1,2-Dichloroethane	5	20	1	31	3	3.1
	1,2-Dichloroethene (total)	**5**	**63**	**28**	**30**	**93**	**9.8**
	trans-1,3-Dichloropropene	5	56	1	31	3	8.7
	Toluene	5	31	2	31	6	4.8
	1,1,1-Trichloroethane	**5**	**96**	**6**	**31**	**19**	**14.9**
	Trichloroethene	**5**	**9**	**14**	**31**	**45**	**1.4**
	Vinyl Chloride	**2**	**200**	**29**	**31**	**94**	**31**
	Total		646				**100**
	Total Representative Compound	**28**	**538**				
MW-2D	Benzene	1	10	2	27	7	0.1
	1,1-Dichloroethane	**5**	**6**	**7**	**27**	**26**	**0.1**
	1,2-Dichloroethene (total)	**5**	**24**	**9**	**27**	**33**	**0.3**
	1,1,2,2-Tetrachloroethane	5	28	1	27	4	0.4
	Tetrachloroethene	**5**	**6500**	**26**	**27**	**96**	**82.4**
	1,1,1-Trichloroethane	**5**	**1300**	**20**	**27**	**74**	**16.5**
	Trichloroethene	**5**	**25**	**9**	**27**	**33**	**0.3**
	Total		7893				**100**
	Total Representative Compound	**25**	**7855**				
MW-3	**Chloroform**	**7**	**6**	**5**	**29**	**17**	**0.3**
	Dibromochloromethane	**0**	**9**	**6**	**29**	**21**	**0.5**
	1,1-Dichloroethane	**5**	**300**	**28**	**29**	**97**	**15.8**
	1,2-Dichloroethane	**0.6**	**17**	**3**	**29**	**10**	**0.9**
	1,1-Dichloroethene	**5**	**670**	**29**	**29**	**100**	**35.3**
	1,2-Dichloroethene (total)	**5**	**49**	**22**	**28**	**79**	**2.6**
	Methylene Chloride	5	4	2	28	7	0.2
	trans-1,3-Dichloropropene	**0.4**	**3**	**4**	**29**	**14**	**0.2**
	Tetrachloroethene	**5**	**18**	**21**	**29**	**72**	**0.9**
	1,1,1-Trichloroethane	**5**	**780**	**28**	**29**	**97**	**41.1**
	Trichloroethene	**5**	**41**	**20**	**29**	**69**	**2.2**
	Total		1897				**100**
	Total Representative Compound	**38**	**1893**				

TABLE 2

ITT SEALECTRO

EVALUATION TO SELECT REPRESENTATIVE VOCs

Monitoring Well	Compound	NYS Class GA Standard (ug/L)	Maximum Concen. (ug/L)	# of Events Compound Detected	# of Events Compound Analyzed	% of Sampling Events Compound Detected	% of Total
MW-3D	Benzene	5	1	1	26	4	0.1
	Chloroethane	5	4	1	26	4	0.4
	1,1-Dichloroethane	**5**	**39**	**22**	**26**	**85**	**3.6**
	1,1-Dichloroethene	**5**	**81**	**21**	**26**	**81**	**7.4**
	1,2-Dichloroethene (total)	**5**	**44**	**18**	**26**	**69**	**4.0**
	Tetrachloroethene	**5**	**420**	**26**	**26**	**100**	**38.6**
	1,1,1-Trichloroethane	**5**	**470**	**25**	**26**	**96**	**43.2**
	Trichloroethene	**5**	**17**	**21**	**26**	**81**	**1.6**
	Methylene Chloride	5	1.2	1	26	4	0.1
	Vinyl Chloride	2	2	1	26	4	0.2
	Xylene	5	9.1	1	26	4	0.8
	Total		1088.3				
	Total Representative Compound	**30**	**1071**				
MW-11	Acetone	0	22	1	19	5	2.9
	Benzene	**1**	**20**	**15**	**19**	**79**	**2.7**
	Bromodichloroemethane	0	1	1	19	5	0.1
	Chloroethane	**5**	**330**	**14**	**19**	**74**	**43.8**
	Chloroform	**7**	**15**	**2**	**19**	**11**	**2**
	1,1-Dichloroethane	**5**	**69**	**17**	**19**	**89**	**9.2**
	1,2-Dichloroethene (total)	**5**	**77**	**19**	**19**	**100**	**10.2**
	Dichloromethane	5	26	1	19	5	3.4
	Tetrachloroethene	**5**	**88**	**16**	**19**	**84**	**11.7**
	1,1,1-Trichloroethane	**5**	**33**	**16**	**19**	**84**	**4.4**
	Trichloroethene	**5**	**53**	**17**	**18**	**89**	**7**
	Methylene Chloride	5	2	1	19	6	0.3
	Vinyl Chloride	**2**	**18**	**8**	**19**	**42**	**2.4**
	Total		754				100
	Total Representative Compound	**40**	**703**				

TABLE 2

ITT SEALECTRO

EVALUATION TO SELECT REPRESENTATIVE VOCs

Monitoring Well	Compound	NYS Class GA Standard (ug/L)	Maximum Concen. (ug/L)	# of Events Compound Detected	# of Events Compound Analyzed	% of Sampling Events Compound Detected	% of Total
MW-12	**Chloroethane**	**5**	**130**	**2**	**18**	**11**	**0.5**
	Chloroform	**7**	**18**	**4**	**18**	**22**	**0.1**
	1,1-Dichloroethane	**5**	**1100**	**8**	**18**	**44**	**3.8**
	1,1-Dichloroethene	**5**	**630**	**10**	**18**	**56**	**2.2**
	1,2-Dichloroethene (total)	**5**	**1100**	**15**	**18**	**83**	**3.8**
	Tetrachloroethene	**5**	**6100**	**18**	**18**	**100**	**21.3**
	Toluene	5	1	1	18	6	0
	1,1,1-Trichloroethane	**5**	**18000**	**18**	**18**	**100**	**62.7**
	Trichloroethene	**5**	**1600**	**15**	**18**	**83**	**5.6**
	Vinyl Chloride	**2**	**11**	**3**	**18**	**17**	**0**
	Total		28690				100
	Total Representative Compound	**44**	**28689**				

Bold compounds are representative of site conditions and are used to calculate the starting and end points of each decay curve.

O'Brien & Gere Engineers, Inc.

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9/7/00

Table 3
ITT Sealectro
Monitoring Well Representative VOCs

	MW-2	MW-2D	MW-3	MW-3D	MW-11	MW-12
Benzene	✓				✓	
Chloroethane	✓				✓	✓
Chloroform			✓		✓	✓
Dibromochloromethane			✓			
1,1-Dichloroethane	✓	✓	✓	✓	✓	✓
1,2-Dichloroethane			✓			
1,1-Dichloroethene			✓	✓		✓
1,2-Dichloroethene (total)	✓	✓	✓	✓	✓	✓
Methylene Chloride					✓	
trans 1,3-Dichloropropene			✓			
tetrachloroethene		✓	✓	✓	✓	✓
1,1,1-Trichloroethane	✓	✓	✓	✓	✓	✓
Trichloroethene	✓	✓	✓	✓	✓	✓
Vinyl Chloride	✓				✓	✓

Table 4
ITT Sealectro

Reportable VOCs and Detection Limits
(USEPA Method 8021)

Compound	Dectection Limit
Benzene	<1
Bromodichloromethane	<1
Bromoform	<10
Carbon tetrachloride	<10
Chlorobenzene	<1
Chloroethane	<1
2-Chloroethylvinyl ether	<1
Chloroform	<10
Chloromethane	<1
Dibromochloromethane	<10
1,2-Dichlorobenzene	<5
1,3-Dichlorobenzene	<5
1,4-Dichlorobenzene	<5
Dichlorodifluoromethane	<10
1,1-Dichloroethane	<1
1,2-Dichloroethane	<1
1,1-Dichloroethylene	<1
cis-1,2-Dichloroethylene	<1
trans-1,2-Dichloroethylen	<1
Dichloromethane	<1
1,2-Dichloropropane	<1
cis-1,3-Dichloropropylene	<1
trans-1,3-dichloropropylene	<1
Ethylbenzene	<1
1,1,2,2-Tetrachloroethane	<1
Tetrachloroethylene	<1
Toluene	<1
1,1,1-Trichloroethane	<1
1,2,2-Trichloroethane	<1
Trichloroethylene	<1
Trichlorofluoromethane	<1
Vinyle Chloride	<1
Xylenes	<3

Notes:
Concentrations in ug/L.

Table 5

Well Construction Details

Well No.	Ground Water Zone	Maximum Pumping Rate (GPM)*	Well Diameter/ Materials	Well Depth (ft)	Screen Depth (ft)	Screen Slot Size (in)
RW-2	Shallow	2	12-in cmp	11	NA	NA
MW-2	Shallow	2	2 in/PVC	14.5	9.5-14.5	0.010
MW-2D	Deep	5	2 in/PVC	42	32 - 42	0.010
MW-3	Shallow	2	2 in/PVC	14.5	9.5 - 14.5	0.010
MW-3D	Deep	2	2 in/PVC	28	18 - 28	0.010
MW-11	Shallow	2	2 in/PVC	14	4 - 14	0.010
MW-12	Shallow	2	2 in/PVC	14.5	4.5 - 14.5	0.010
TW-1	Shallow/Deep	10	6 in/PVC	40	15 - 35	0.020

Notes:

CMP - Corrugated Metal Pipe
* - Total Flow of system cannot exceed POTW discharge limitation. Current permit limit is 15 gpm.

e Company, Inc.
B

	9/29/99 (dup)	11/22/99	11/22/99 dup	3/30/00	03/30/00 dup
)	< 0.00180	0.00310	0.00240	< 0.00130	0.00880
	< 0.00230	0.00730	0.00670	0.00220	0.00180
	< 0.00230	< 0.00160	< 0.00230	< 0.00170	< 0.00150
	< 0.00240	< 0.00170	< 0.00240	< 0.00180	0.01200
	0.01700	0.05100	0.04700	0.00560	0.01800
	0.01300	0.01600	0.00990	0.00150	0.11000
	0.00430	0.01000	0.00960	0.00360	0.00250
	0.00740	0.01800	0.02800	0.01500	0.01400
	< 0.00240	0.00210	< 0.00240	< 0.00180	0.00990
	0.00590	0.00600	< 0.00240	< 0.00180	0.03600

Table 7
ITT Sealectro, Inc.
Mamaroneck, NY Facility

Cost Estimate
Ground Water Monitoring Plan and Continued Operation of Existing GW Treatment System
Contingency Remedy

	Item	Quantity	Unit		Unit Cost	Total Cost
I.	**GROUND WATER MONITORING AND TREATMENT (EXISTING SYSTEM)**					
I a.	**DIRECT CAPITAL COST**					$0
I c.	**ANNUAL OPERATING AND MAINTENANCE COSTS - GW TREATMENT SYSTEM**					
	Treatment System O&M and Cleanout	Lump Sum			Lump Sum	$70,000
	Treatment System Replacement Parts	Lump Sum			Lump Sum	$5,000
	Carbon Replacement/Disposal (1 time per year)	Lump Sum			Lump Sum	$4,000
	Monthly Compliance Monitoring (VOC and Oil & Grease)	Lump Sum			Lump Sum	$12,000
	WCDEF Permit Renewal	Lump Sum			Lump Sum	$2,000
	Quarterly WCDEF Reporting	Lump Sum			Lump Sum	$4,000
				ANNUAL O&M COST		$97,000
	PRESENT WORTH LONG TERM IRM O&M (FOR 29 YRS @ 5%)					**$1,468,684**
I d.	**ANNUAL GROUND WATER & INDOOR AIR MONITORING COSTS**					
	Seven Wells; quarterly for year 2; VOCs		Year 2			$30,000
	Seven Wells; annually for years 3 - 30; VOCs		per year			$12,000
	Indoor air, semi-annually for years 1&2		Year 1			$16,000
	PRESENT WORTH LONG TERM GW & AIR MONITORING					**$197,784**
I e.	**ANNUAL PROJECT MANAGEMENT COSTS**					
	Project Management (Year 2)		per year			$15,000
	Project Management (Years 3-30)		per year			$5,000
	PRESENT WORTH LONG TERM PROJECT MANAGEMENT (FOR 29 YRS @ 5%)					**$71,650**
TOTAL PRESENT WORTH ANNUAL O&M FOR GW MONITORING AND CONTINUED IRM OPERATION						**$1,738,118**
TOTAL ESTIMATED COST FOR GW MONITORING AND CONTINUED IRM OPERATION						**$1,738,118**
				ROUNDED TO:		**$1,740,000**

Table 7
ITT Sealectro, Inc.
Mamaroneck, NY Facility

Cost Estimate
Ground Water Monitoring Plan and Continued Operation of Existing GW Treatment System
Contingency Remedy

	Item	Quantity	Unit		Unit Cost	Total Cost
II.	**CONTINGENCY REMEDY**					
II a.	**DIRECT CAPITAL COSTS**					
	Site Preparation					
	Mobilization/Demobilization	Lump Sum			Lump Sum	$8,000
					Subtotal	$8,000
	Site Work					
	Pump Installations at MW-12, 2D	Lump Sum			Lump Sum	$10,000
	Piping Insulation	275	LF		$8	$2,200
	Excavation for Pipe Lay	275	LF		$2	$550
	Bedding for Pipe Runs	15	CY		$5	$75
	Restoration	Lump Sum			Lump Sum	$5,000
					Subtotal	$17,825
				TOTAL DIRECT CAPITAL COST		**$25,825**
II b.	**INDIRECT CAPITAL COSTS**					
	Contingency (25% of Direct Capital Cost)					$6,000
	Engineering					$15,000
	Administration/Legal Fees (5% of Direct Capital Cost)					$1,000
				TOTAL INDIRECT CAPITAL COST		**$22,000**
				TOTAL CAPITAL COST		**$47,800**
	ANNUAL OPERATING AND MAINTENANCE COSTS (ADDITIONAL BASED ON ADDING MW-12 and 2D)					
	Pump Operation and Maintenance	Lump Sum			Lump Sum	$2,000
	Carbon Replacement/Disposal (2 times per year)	Lump Sum			Lump Sum	$12,000
				ANNUAL O&M COST		$14,000
	PRESENT WORTH CONTINGENCY REMEDY O&M (FOR YRS 5 - 30 @ 5%)					**$144,390**
	TOTAL PRESENT WORTH O&M COSTS FOR CONTINGENCY REMEDY					**$144,390**
	TOTAL ESTIMATED COST FOR CONTINGENCY REMEDY					**$192,190**
				ROUNDED TO:		**$192,000**

Table 7
ITT Sealectro, Inc.
Mamaroneck, NY Facility

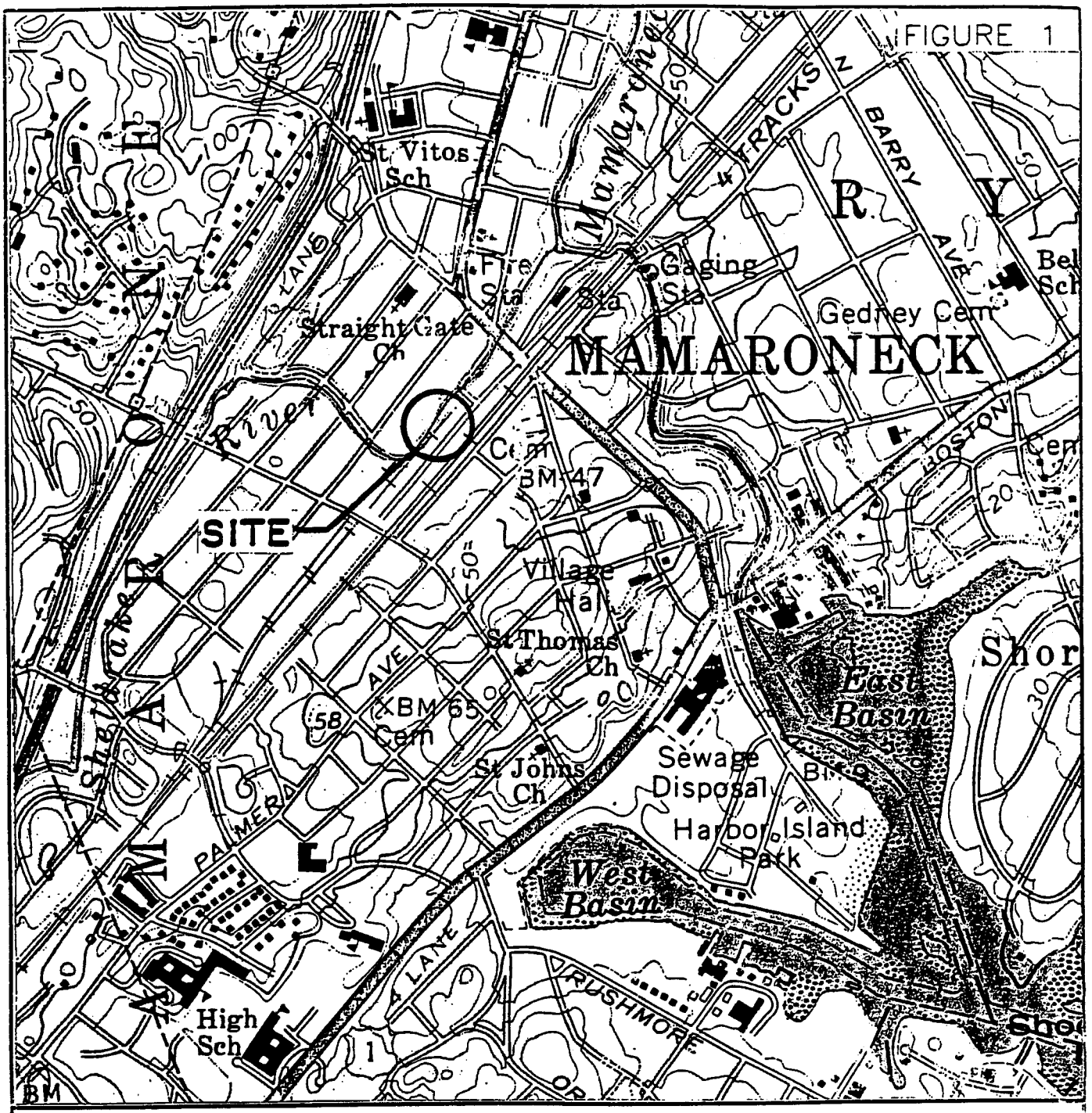
Cost Estimate
Ground Water Monitoring Plan and Continued Operation of Existing GW Treatment System
Contingency Remedy

	Item	Quantity	Unit	Unit Cost	Total Cost
III.	**SUMMARY**				
	GW MONITORING AND CONTINUED IRM OPERATION				
	Total Capital Costs				$0
	Present Worth of O&M Costs				$1,738,118
	CONTINGENCY REMEDY				
	Total Capital Costs				$47,800
	Present Worth of O&M Costs				$144,390
	TOTAL CAPITAL COSTS (INCLUDING CONTINGENCY REMEDY)				**$47,800**
	TOTAL O&M PRESENT WORTH COSTS (INCLUDING CONTINGENCY REMEDY)				**$1,882,508**
	TOTAL ESTIMATED PRESENT WORTH COST (INCLUDING CONTINGENCY REMEDY)				**$1,930,308**
				ROUNDED:	**$1,900,000**

Notes:

1. Cost estimate based on R.S. Means Construction Cost Data, present IRM Program Cost Data, vendor quotes, and O'Brien & Gere Engineers, Inc. professional experience.
2. Line items provided to form budget cost only.
3. The cost in this table were developed based upon the data currently available and several assumptions necessary to evaluate the remedy. Because of the incomplete nature of this information and the possibility that actual conditions may vary considerably from these base assumptions, these costs are not necessarily indicative of the actual remediation costs that will be incurred.
4. Costs assume continued discharge to the WCDEF POTW.
5. Pumps assumed to be electrical and powered by existing electrical supply in treatment building.
6. Annual Report submittal to NYSDEC included in I (d). above.

FIGURE 1



ITT SEALECTRO
MAMARONECK, NEW YORK

QUADRANGLE LOCATION

SITE LOCATION MAP

0 1000 2000

SCALE IN FEET

ADAPTED FROM U.S.G.S. QUAD. 7.5 MIN. QUAD. MAP, MAMARONECK, NEW YORK

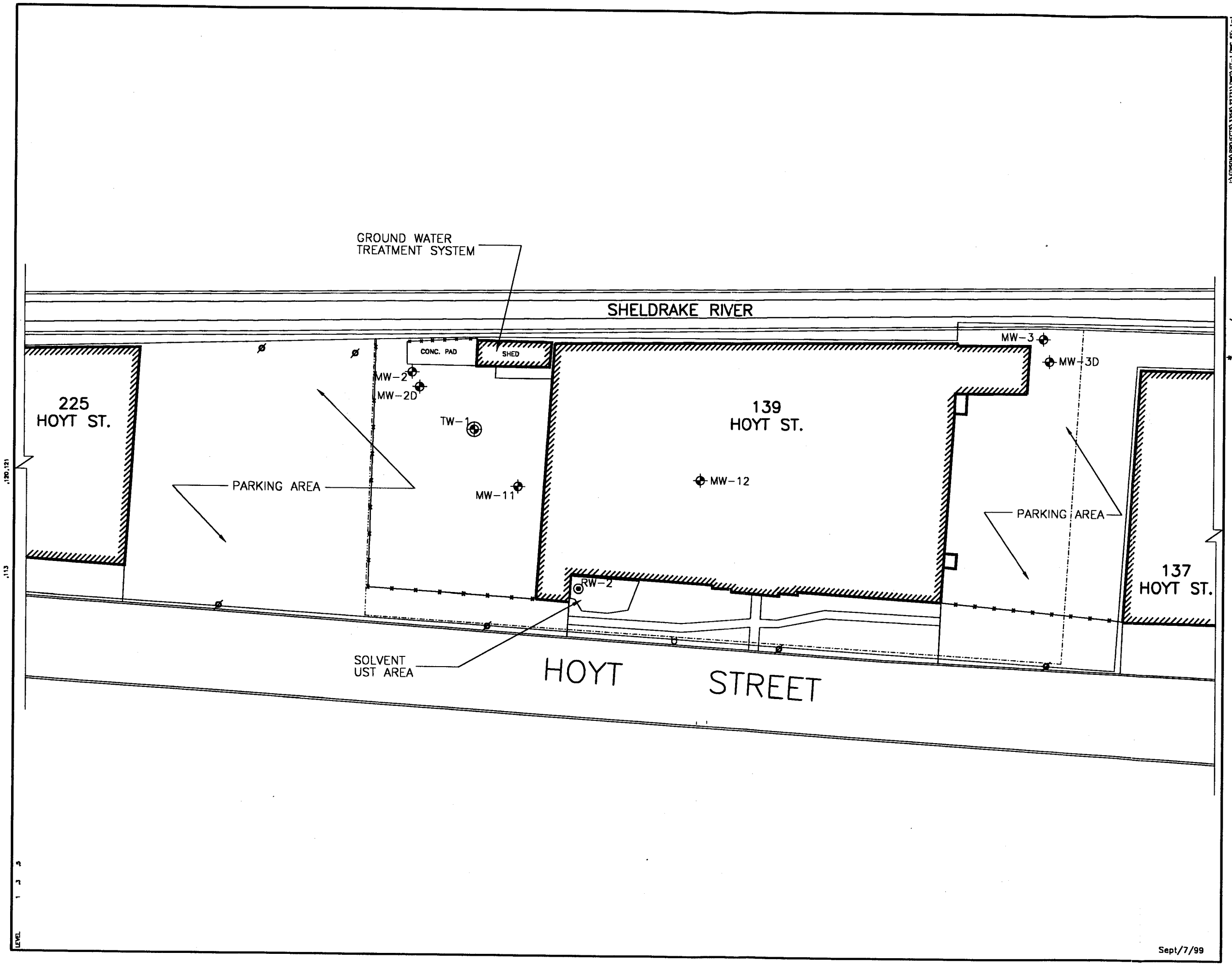
1/28/93

3356.015.25F

8X11

O'BRIEN & GERE
ENGINEERS, INC.

FIGURE 2



LEGEND

- PROPERTY LINE
- FENCE
- MONITORING WELL LOCATION
- RECOVERY WELL LOCATION
- UTILITY POLE
- TEST WELL LOCATION

ITT SEALECTRO
MAMARONECK, NEW YORK

SITE PLAN

40 0 40

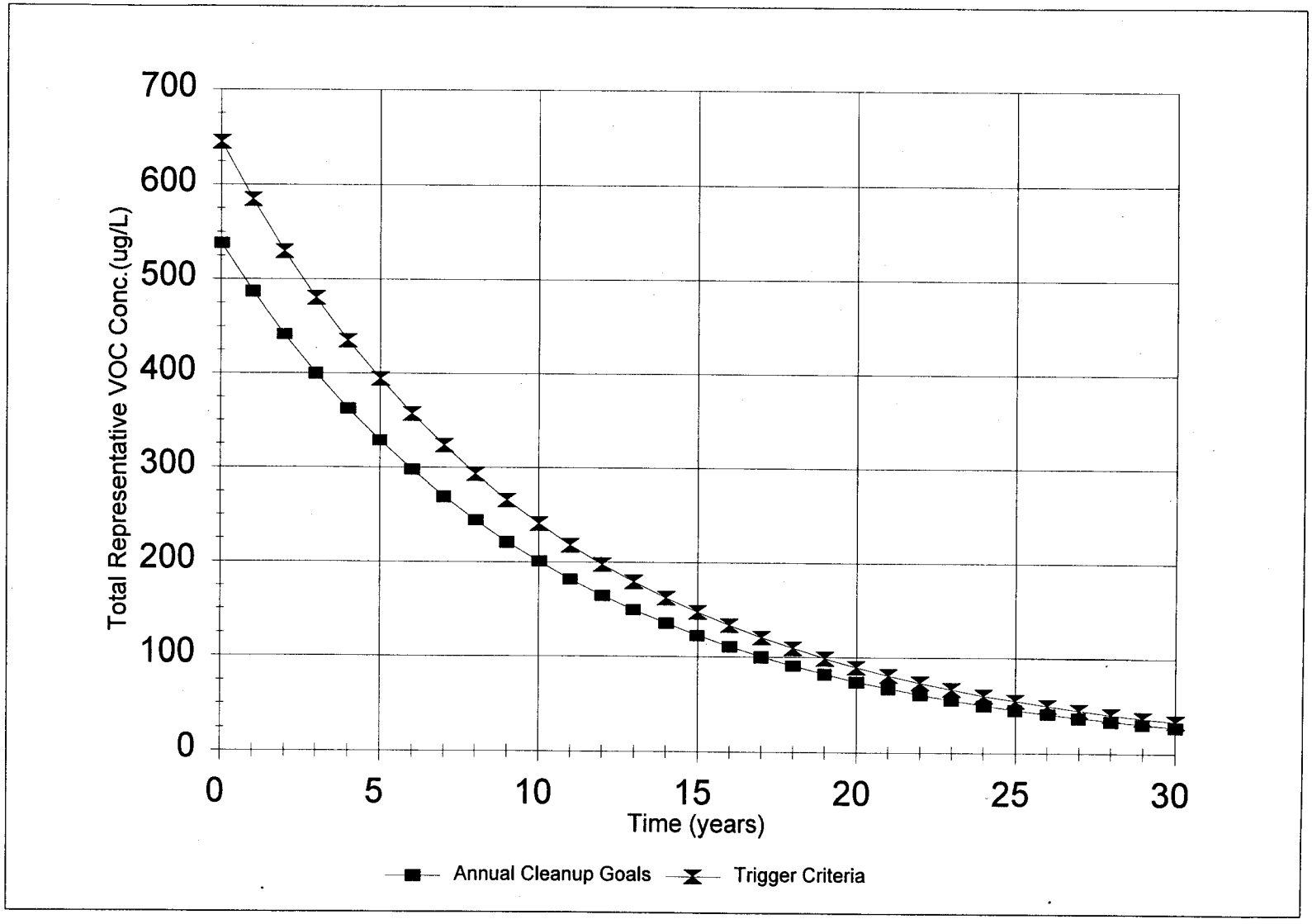
APPROX. SCALE IN FEET

3356.22731-010

O'BRIEN & GERE
ENGINEERS, INC.

Annual Cleanup Goals and Trigger Criteria
MW-2S

Year	Annual Cleanup Goals	Trigger Criteria
0	538	646
1	488	585
2	442	530
3	400	480
4	363	435
5	329	394
6	298	357
7	270	324
8	245	294
9	222	266
10	201	241
11	182	218
12	165	198
13	149	179
14	135	163
15	123	147
16	111	133
17	101	121
18	91	110
19	83	99
20	75	90
21	68	82
22	62	74
23	56	67
24	51	61
25	46	55
26	42	50
27	38	45
28	34	41
29	31	37
30	28	34



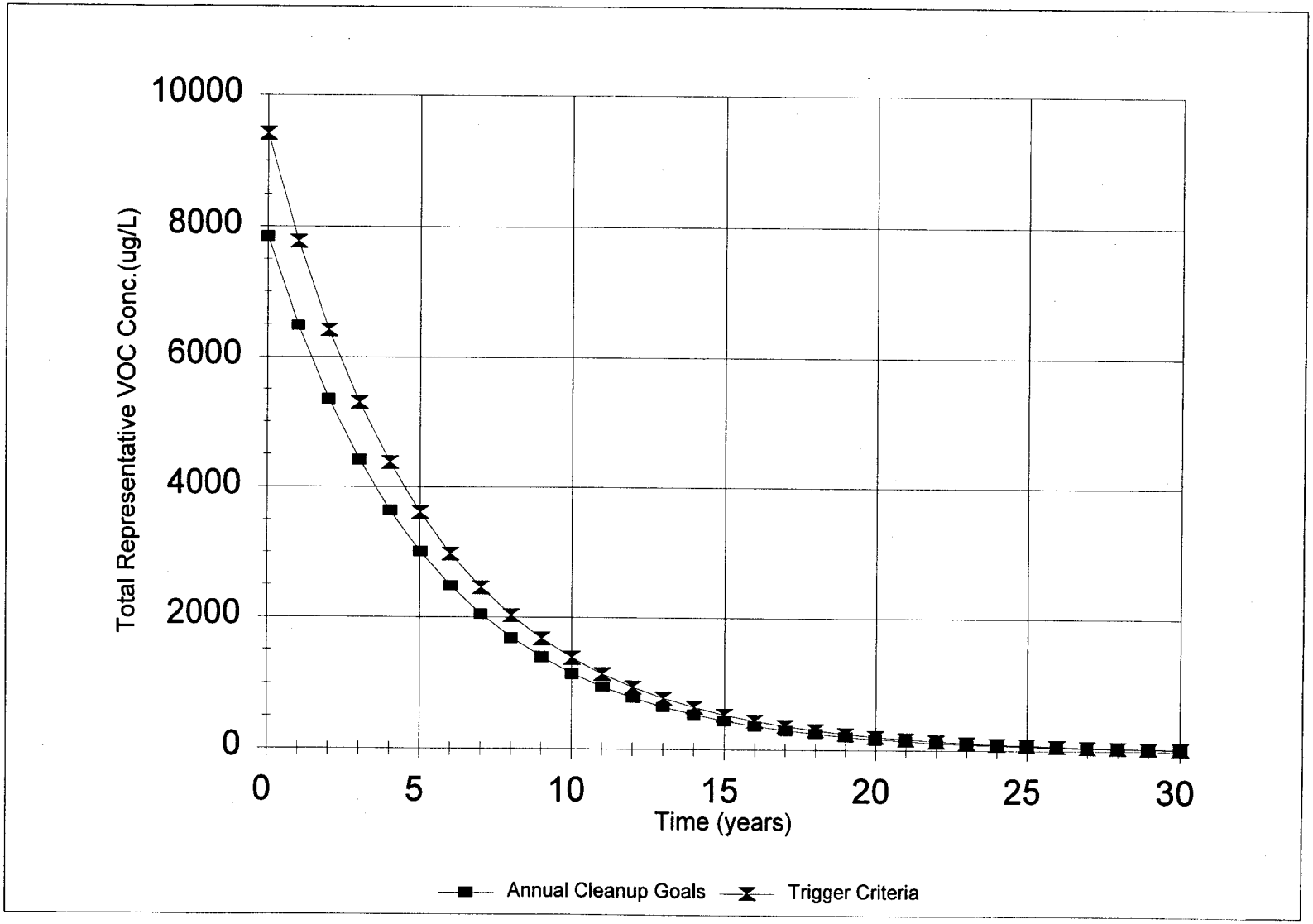
Concentrations in ug/L

Representative compounds include benzene, chloroethane, 1,1-dichloroethane, 1,2-dichloroethene(total), 1,1,1-trichloroethane, trichloroethene, and vinyl chloride

Figure 3

Annual Cleanup Goals and Trigger Criteria
MW-2D

Year	Annual Cleanup Goals	Trigger Criteria
0	7855	9426
1	6485	7782
2	5354	6425
3	4420	5304
4	3649	4379
5	3013	3615
6	2487	2985
7	2053	2464
8	1695	2034
9	1400	1679
10	1155	1387
11	954	1145
12	788	945
13	650	780
14	537	644
15	443	532
16	366	439
17	302	362
18	249	299
19	206	247
20	170	204
21	140	168
22	116	139
23	96	115
24	79	95
25	65	78
26	54	65
27	44	53
28	37	44
29	30	36
30	25	30



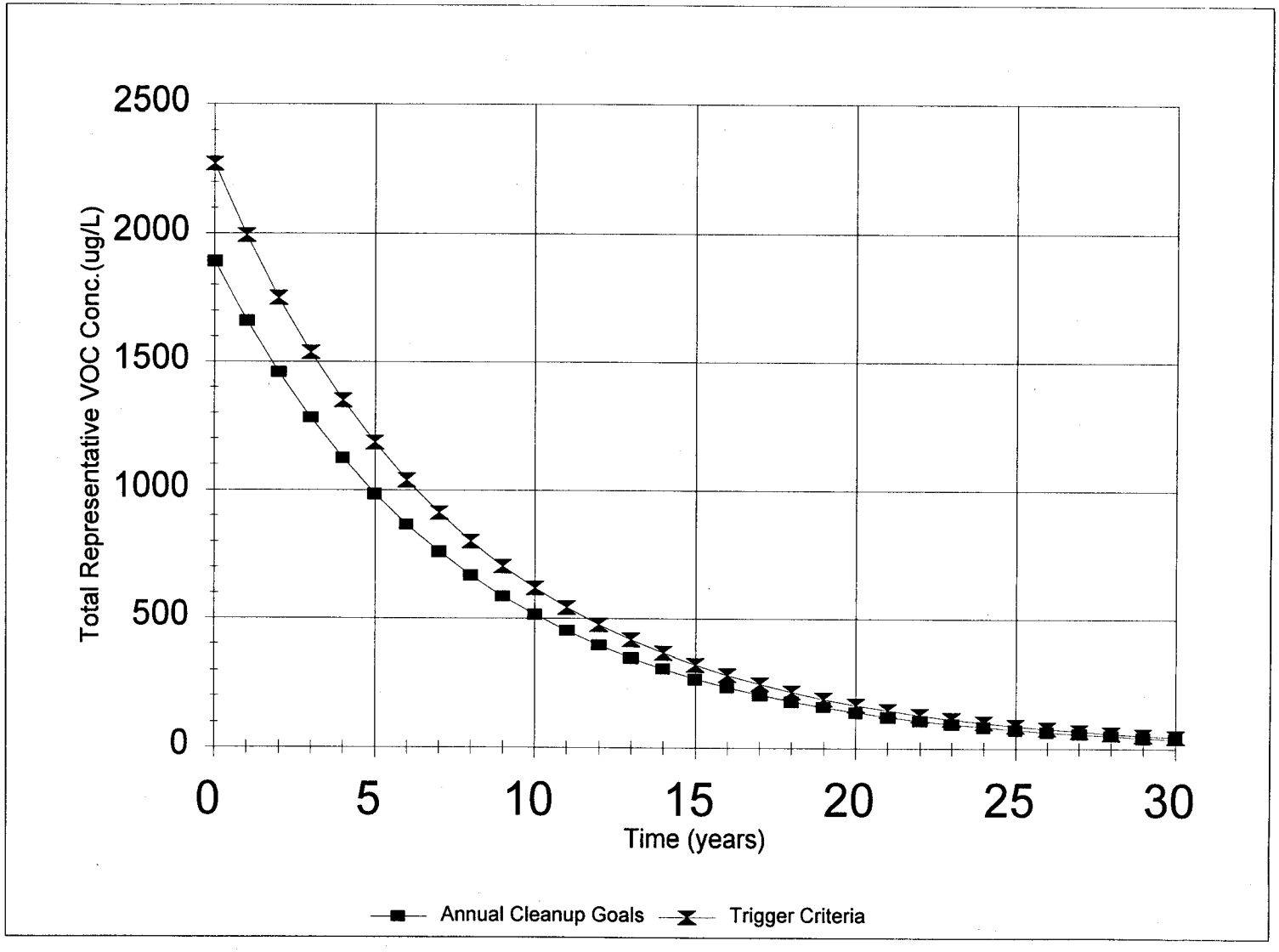
Concentrations in ug/L

Representative compounds include 1,1-dichloroethane, 1,2-dichloroethene(total), tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene

Figure 4

Annual Cleanup Goals and Trigger Criteria
MW-3S

Year	Annual Cleanup Goals	Trigger Criteria
0	1893	2272
1	1662	1994
2	1459	1751
3	1281	1537
4	1124	1349
5	987	1184
6	866	1040
7	760	913
8	668	801
9	586	703
10	514	617
11	452	542
12	396	476
13	348	418
14	306	367
15	268	322
16	235	283
17	207	248
18	181	218
19	159	191
20	140	168
21	123	147
22	108	129
23	95	114
24	83	100
25	73	87
26	64	77
27	56	67
28	49	59
29	43	52
30	38	46



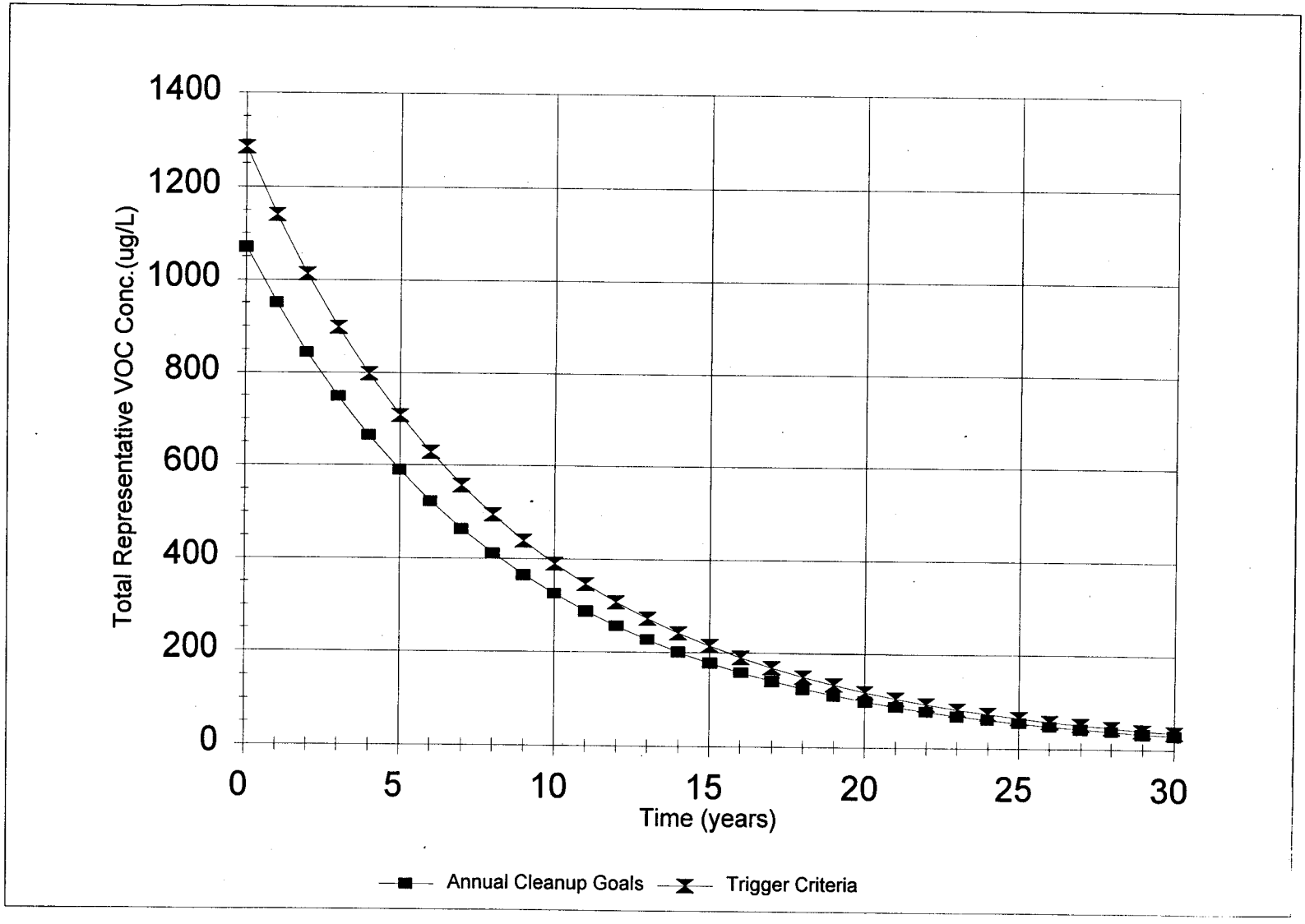
Concentrations in ug/L

Representative compounds include chloroform, dibromochloromethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethene trans-1,3-dichloropropene, tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene

Figure 5

Annual Cleanup Goals and Trigger Criteria
MW-3D

Year	Annual Cleanup Goals	Trigger Criteria
0	1071	1285
1	951	1141
2	844	1013
3	749	899
4	665	798
5	590	708
6	524	629
7	465	558
8	413	495
9	366	440
10	325	390
11	289	346
12	256	308
13	227	273
14	202	242
15	179	215
16	159	191
17	141	169
18	125	150
19	111	134
20	99	119
21	88	105
22	78	93
23	69	83
24	61	74
25	54	65
26	48	58
27	43	51
28	38	46
29	34	41
30	30	36



Concentrations in ug/L

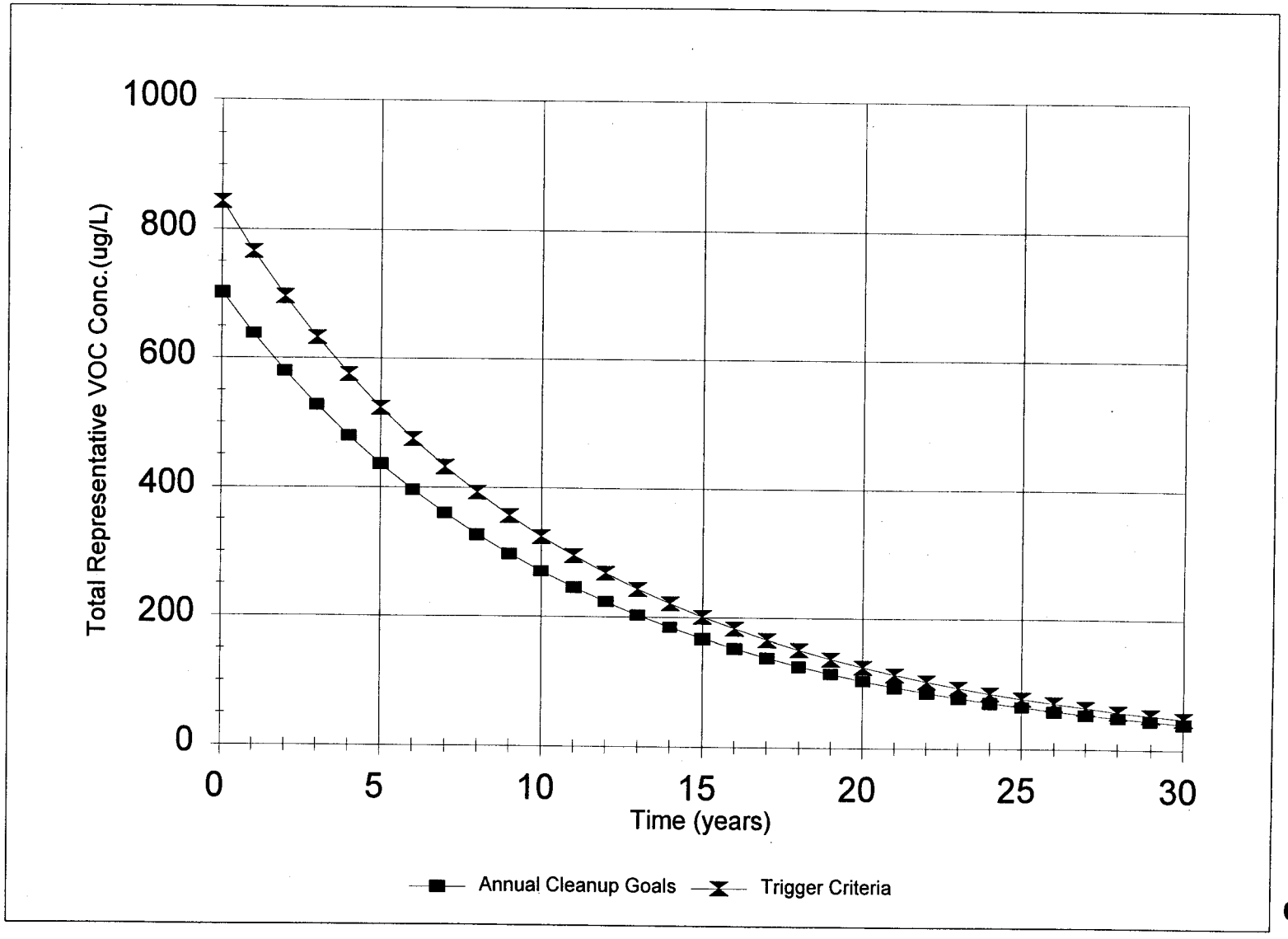
Representative compounds include 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethene (total), tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene

Figure 6

Annual Cleanup Goals and Trigger Criteria
MW-11

Year	Annual Cleanup Goals	Trigger Criteria
0	703	844
1	639	767
2	581	697
3	528	633
4	480	576
5	436	523
6	396	476
7	360	432
8	327	393
9	297	357
10	270	324
11	246	295
12	223	268
13	203	244
14	185	221
15	168	201
16	152	183
17	139	166
18	126	151
19	114	137
20	104	125
21	95	113
22	86	103
23	78	94
24	71	85
25	64	77
26	59	70
27	53	64
28	48	58
29	44	53
30	40	48

Concentrations in ug/L



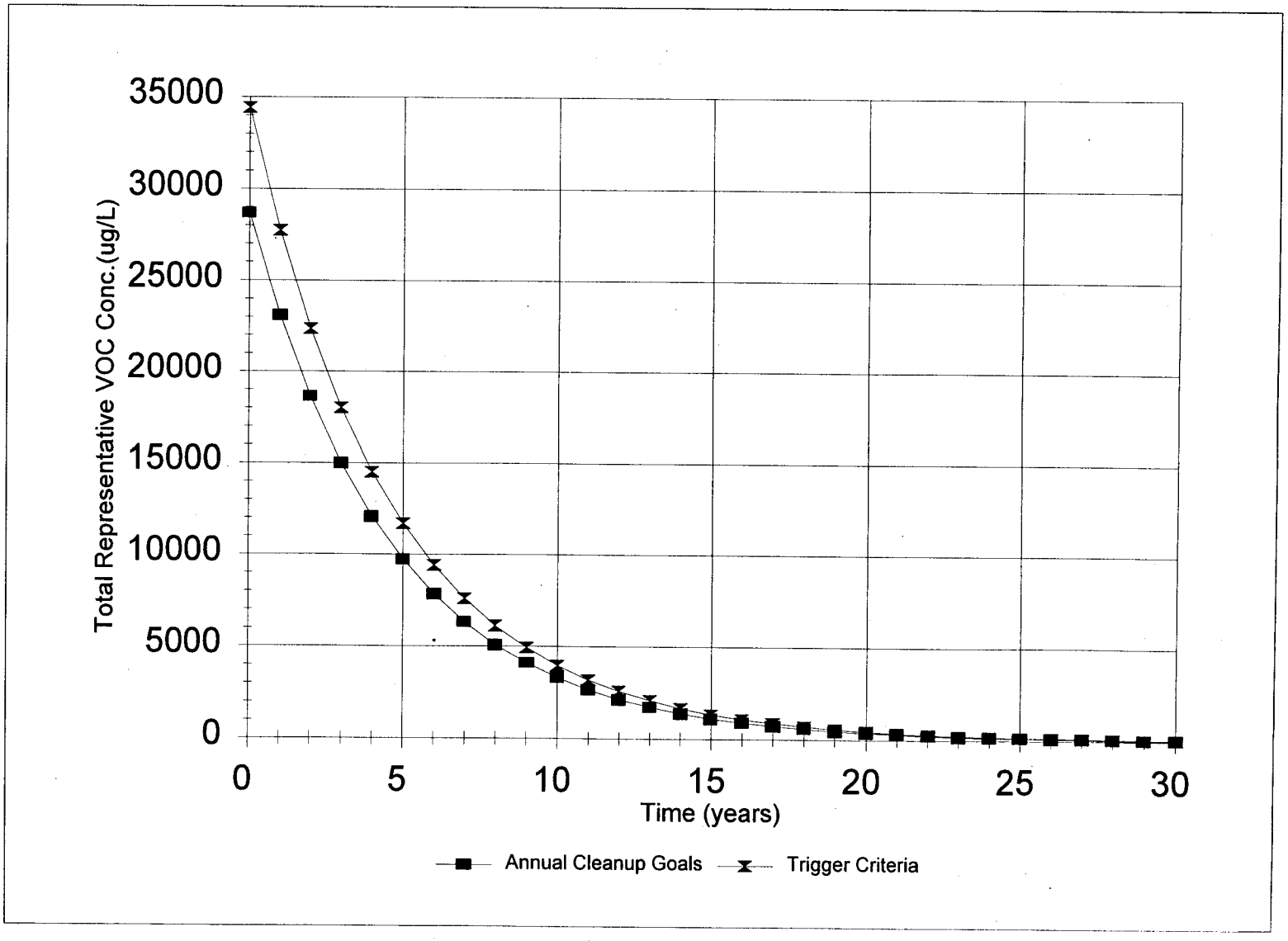
Representative compounds include benzene, chloroform, chloroethane, 1,1-dichloroethane, 1,2-dichloroethene (total), tetrachloroethene, 1,1,1-trichloroethane, trichloroethene, methylene chloride, and vinyl choride

Figure 7

Annual Cleanup Goals and Trigger Criteria
MW-12

Year	Annual Cleanup Goals	Trigger Criteria
0	28689	34427
1	23116	27739
2	18625	22350
3	15007	18008
4	12092	14510
5	9743	11691
6	7850	9420
7	6325	7590
8	5096	6115
9	4106	4927
10	3308	3970
11	2666	3199
12	2148	2577
13	1731	2077
14	1394	1673
15	1124	1348
16	905	1086
17	729	875
18	588	705
19	474	568
20	382	458
21	307	369
22	248	297
23	200	239
24	161	193
25	130	155
26	104	125
27	84	101
28	68	81
29	55	66
30	44	53

Concentrations in ug/L

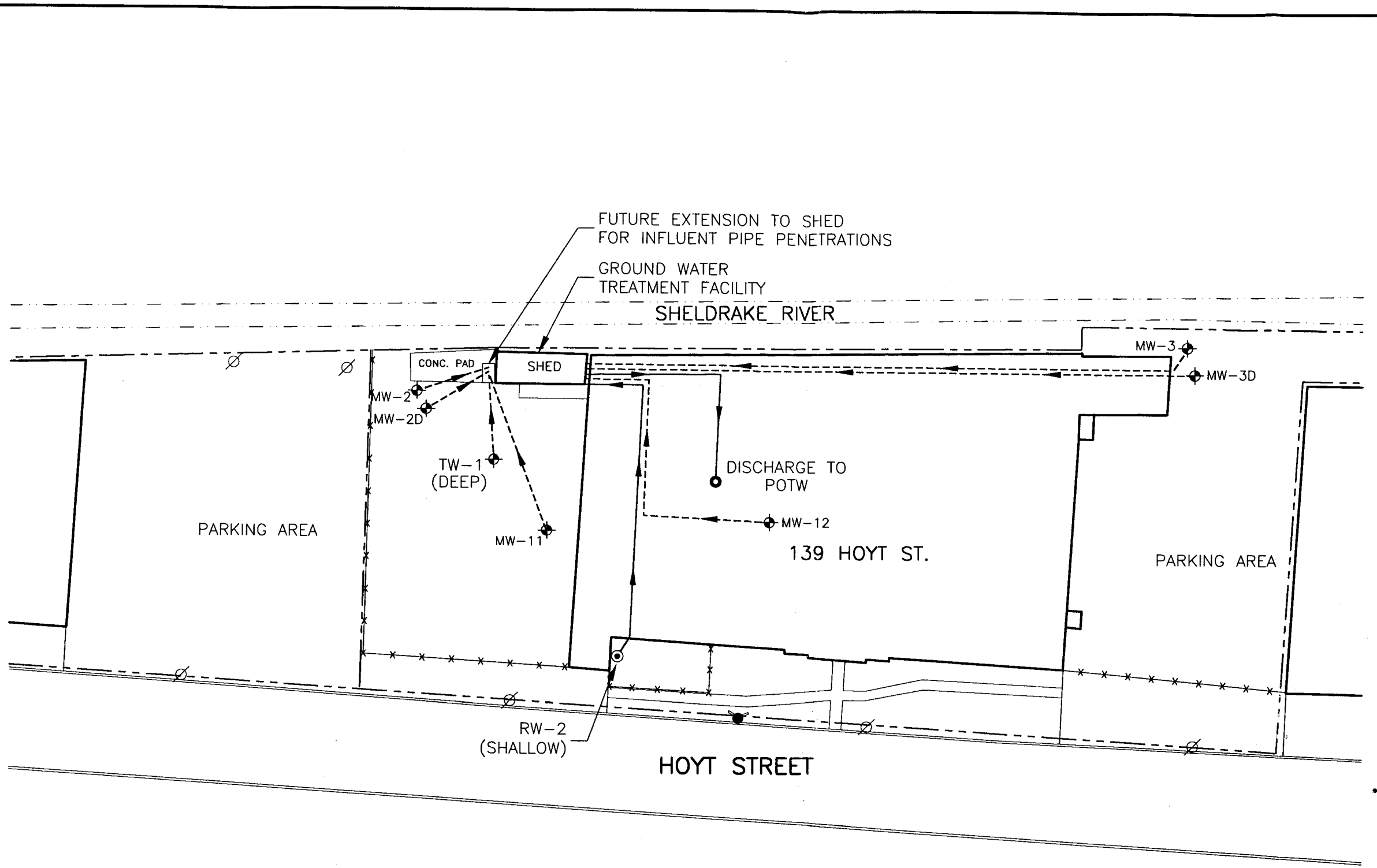


Representative compounds include benzene, chloroform, chloroethane, 1,1-dichloroethane, 1,2-dichloroethene (total), tetrachloroethene, 1,1,1-trichloroethane, trichloroethene, methylene chloride, and vinyl choride

Figure 8

DWG PATH: I:\EDISON\PROJECTS\3356\22731\DWGS\005.DWG SF=1

FIGURE 9



LEGEND

- PROPERTY LINE
- FENCE LINE
- UTILITY POLE
- EXISTING RECOVERY WELL
- EXISTING MONITORING WELL
- EXISTING PIPING
- CONTINGENCY RECOVERY WELL PIPING ROUTE

DRAWING NOTES:

1. PIPING ROUTES ARE CONCEPTUAL. ACTUAL ROUTES TO BE DETERMINED ONCE CONTINGENCY REMEDIAL PLAN IS TRIGGERED.

ITT SEALECTRO
MAMARONECK, NEW YORK

EXISTING AND CONTINGENCY WELL PIPING PLAN

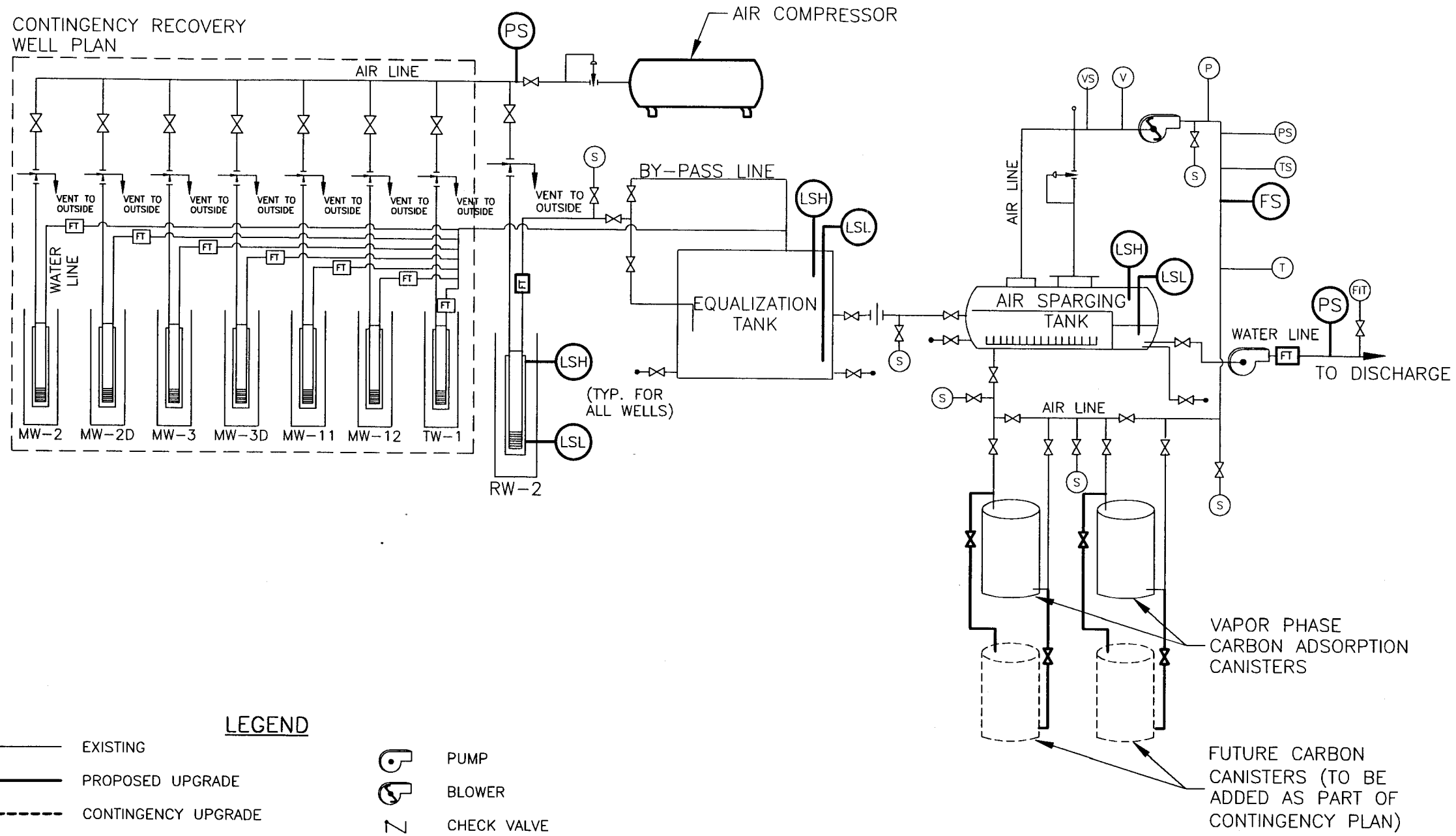
1"=40' 40 0 40

FILE NO. 3356.22731-005
AUGUST 1999

O'BRIEN & GERE
ENGINEERS INC.

PLOT DATE: 8/27/99 EDISON BET

FIGURE 10



LEGEND

- EXISTING
- PROPOSED UPGRADE
- CONTINGENCY UPGRADE
- (S) WATER/AIR SAMPLE PORT
- (P) PRESSURE GAUGE
- (T) TEMP. GAUGE
- (PS) PRESSURE SWITCH
- (TS) TEMP. SWITCH
- (V) VACUUM GAUGE
- (FIT) FLOW INDICATOR/REGULATOR
- (VS) VACUUM SWITCH
- (P) PRESSURE GAUGE
- (S) SAMPLE PORT
- QUICK DISCONNECT HOSE BIB
- BALL VALVE
- PUMP
- BLOWER
- CHECK VALVE
- PRESSURE/VACUUM REGULATOR
- ELECTRIC 3-WAY SOLENOID VALVE
- UNION
- (FT) FLOW TRANSMITTER
- (LSH) LEVEL SWITCH HIGH
- (LSL) LEVEL SWITCH LOW
- (YLC) PROGRAMMABLE LOGIC CONTROL

DRAWING NOTE:
CONTROL OF RECOVERY PUMP TO BE BASED ON LEVEL SWITCHES OR TIMERS BASED ON INDIVIDUAL WELL CHARACTERISTICS.

ITT SEALECTRO
MAMARONECK, NEW YORK

CONTIGENCY PLAN GROUND WATER TREATMENT SYSTEM PROCESS FLOW SCHEMATIC

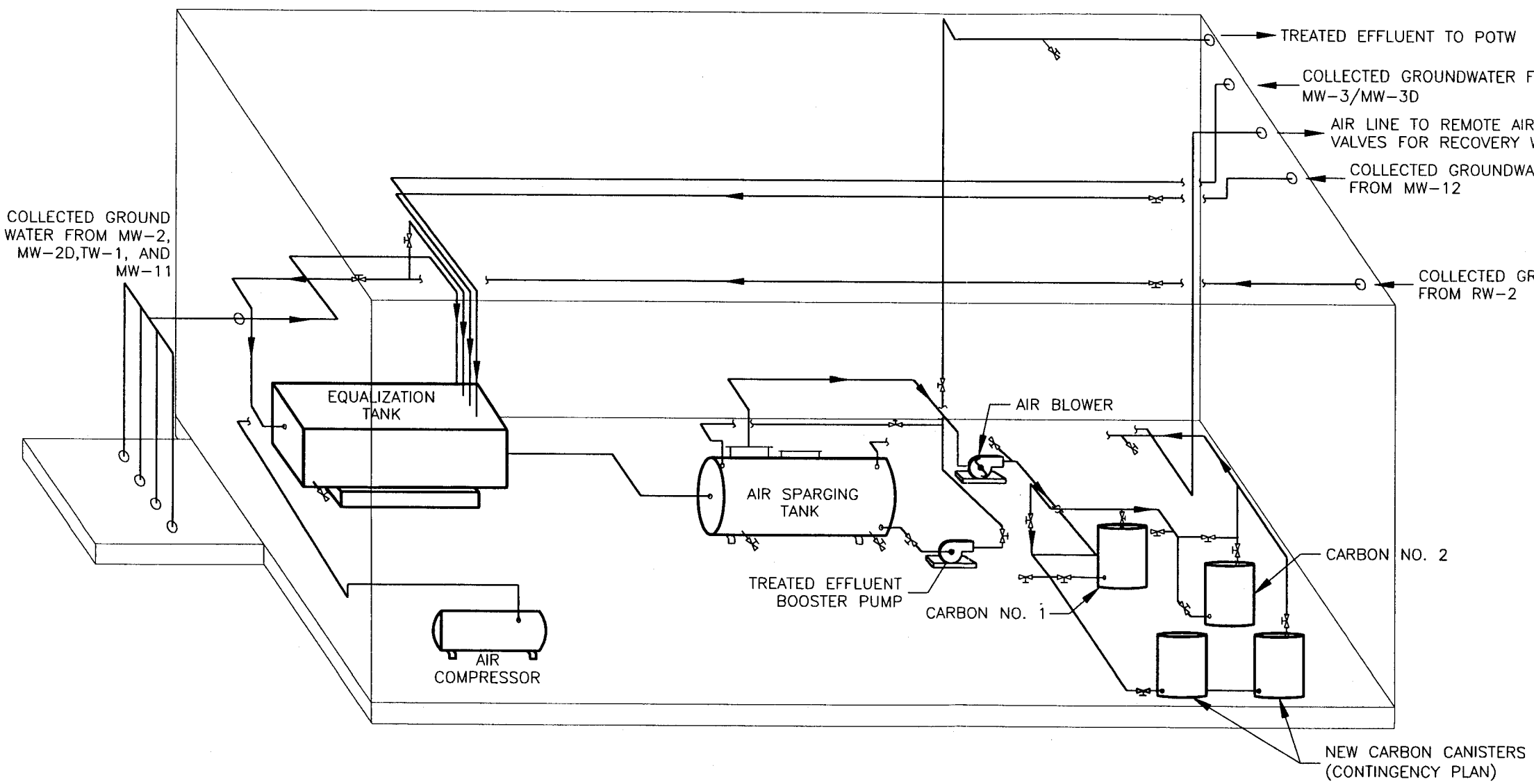
NOT TO SCALE

FILE NO. 3356.22731-004
AUGUST 1999

O'BRIEN & GERE ENGINEERS INC.

DWG PATH: I:\EDISON\PROJECTS\3356\22731\DWGS\003.DWG SF=1

FIGURE 11



LEGEND

BALL VALVE

DRAWING NOTE:

INSTRUMENTATION NOT SHOWN FOR CLARITY.

ITT SEALECTRO
MAMARONECK, NEW YORK

CONTIGENCY PLAN GROUND WATER TREATMENT SYSTEM PIPING AND VALVE ISOMETRIC

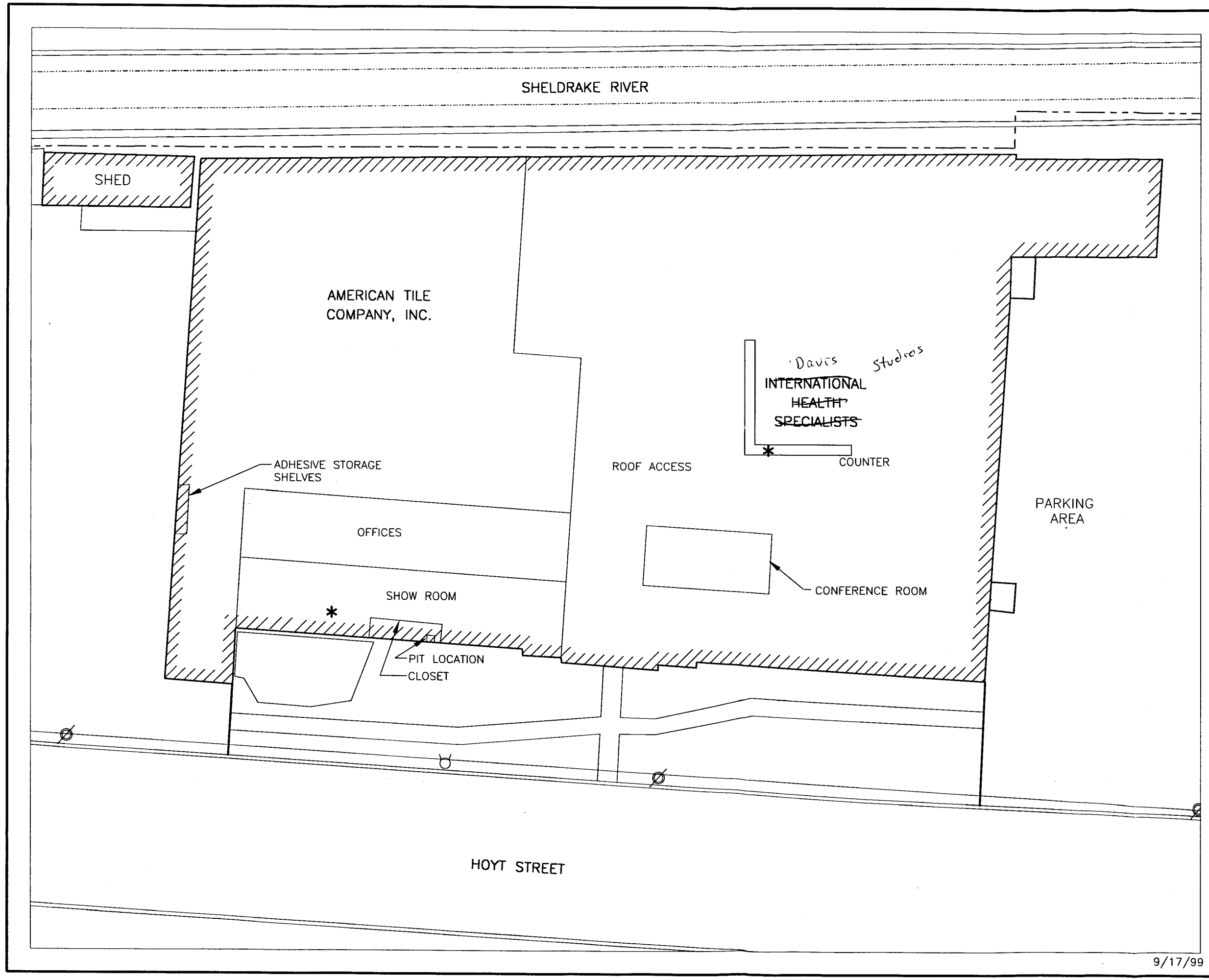
NOT TO SCALE

FILE NO. 3356.22731-003
AUGUST 1999

O'BRIEN & GERE
ENGINEERS INC.

PLOT DATE: 9/03/99 EDISON PMM

FIGURE 12



LEGEND

PROPERTY LINE

LIMITS OF WATER

* AIR SAMPLE

ITT SEALECTRO
MAMARONECK, NEW YORK

INDOOR AIR SAMPLE LOCATION PLAN

1"=20' 20 0 20

SEPTEMBER 1999

FILE NO. 6328.22731-01

O'BRIEN & GERE
ENGINEERS INC.

DWG PATH: I:\EDISON\PROJECTS\6328\22731\DWGS\01.DWG SF 1=1

PLOT DATE: 9/17/99 SYR PWW

Appendix A

Graphs of total VOC concentration vs. time for wells

FIGURE 3

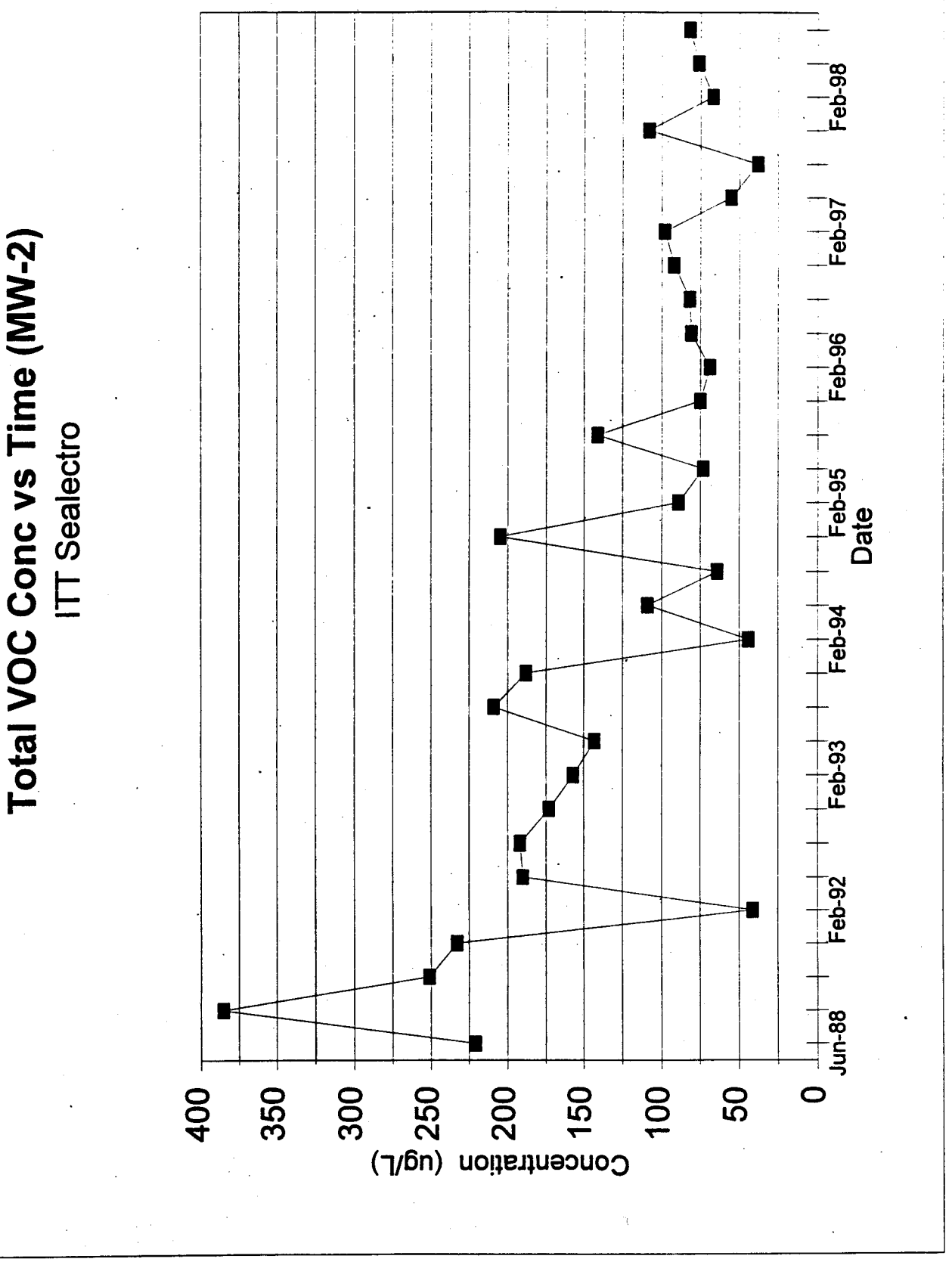

Total VOC Conc vs Time (MW-2)
ITT Sealectro
Concentration (ug/L)
400
350
300
250
200
150
100
50
0
Jun-88
Feb-92
Feb-93
Feb-94
Feb-95
Feb-96
Feb-97
Feb-98
Date

FIGURE 4

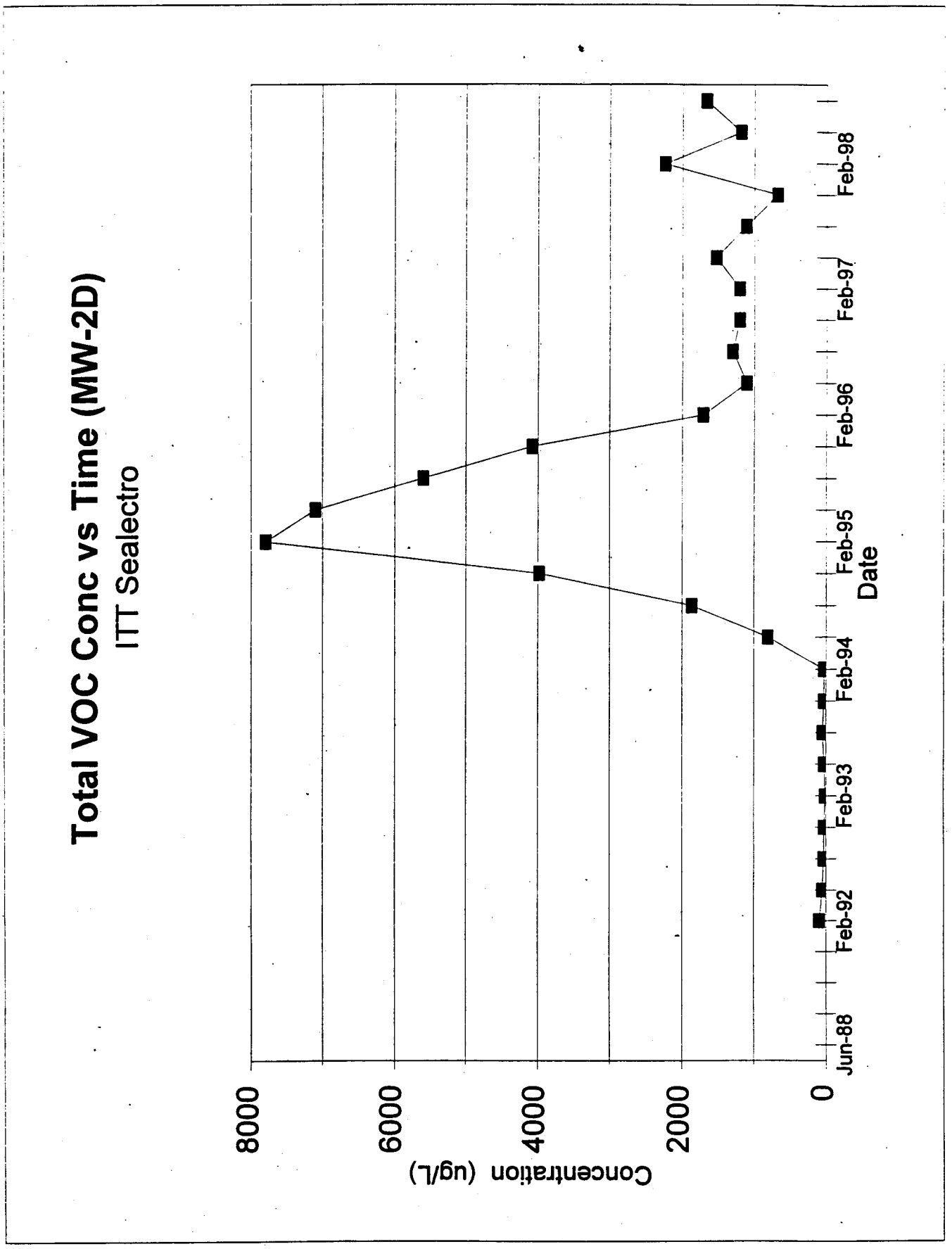

Total VOC Conc vs Time (MW-2D)
ITT Sealectro
Concentration (ug/L)
8000
6000
4000
2000
0
Jun-88
Feb-92
Feb-93
Feb-94
Feb-95
Feb-96
Feb-97
Feb-98
Date

FIGURE 5

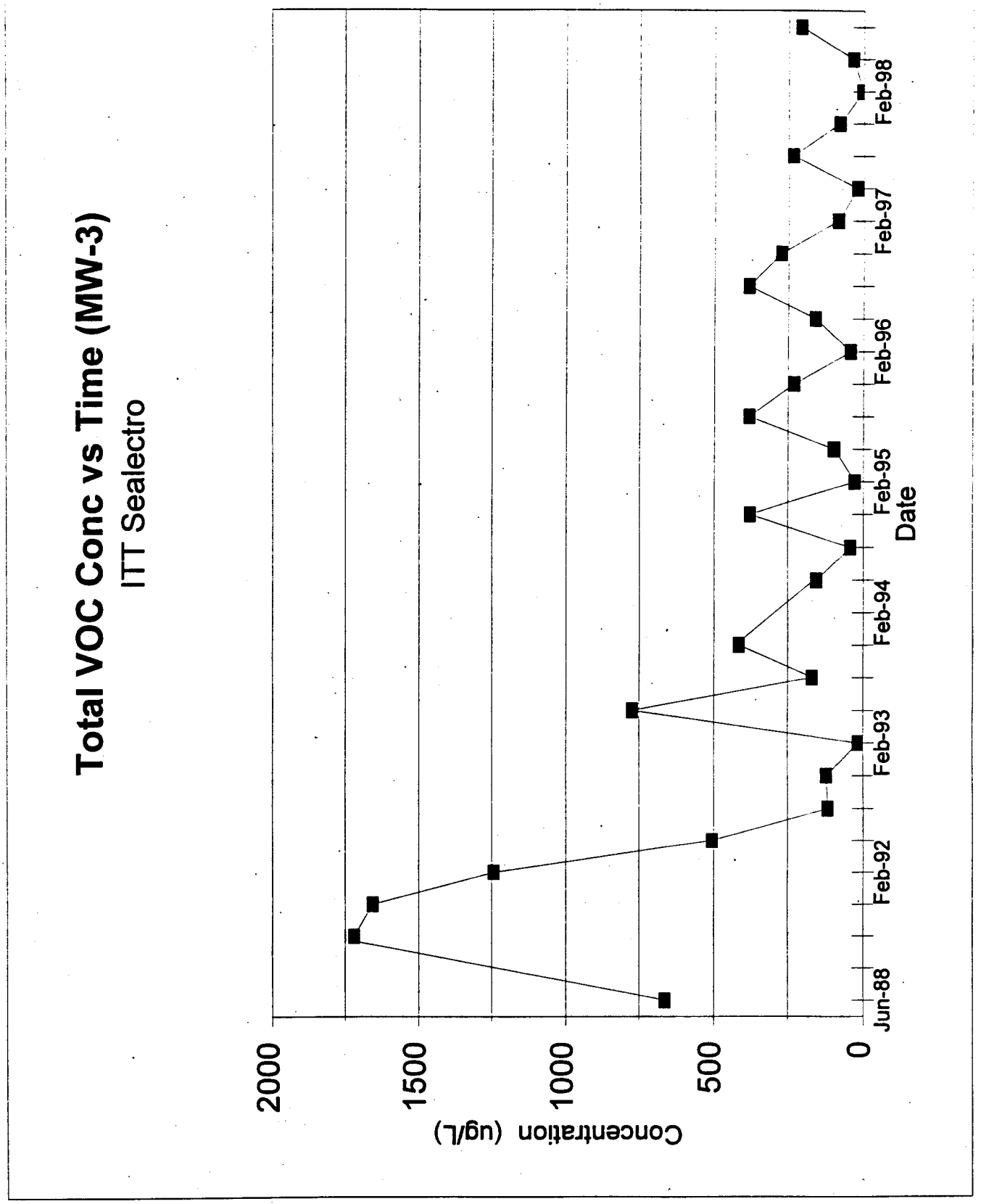

Total VOC Conc vs Time (MW-3)
ITT Sealectro
Concentration (ug/L)
2000
1500
1000
500
0
Jun-88
Feb-92
Feb-93
Feb-94
Feb-95
Feb-96
Feb-97
Feb-98
Date

FIGURE 6

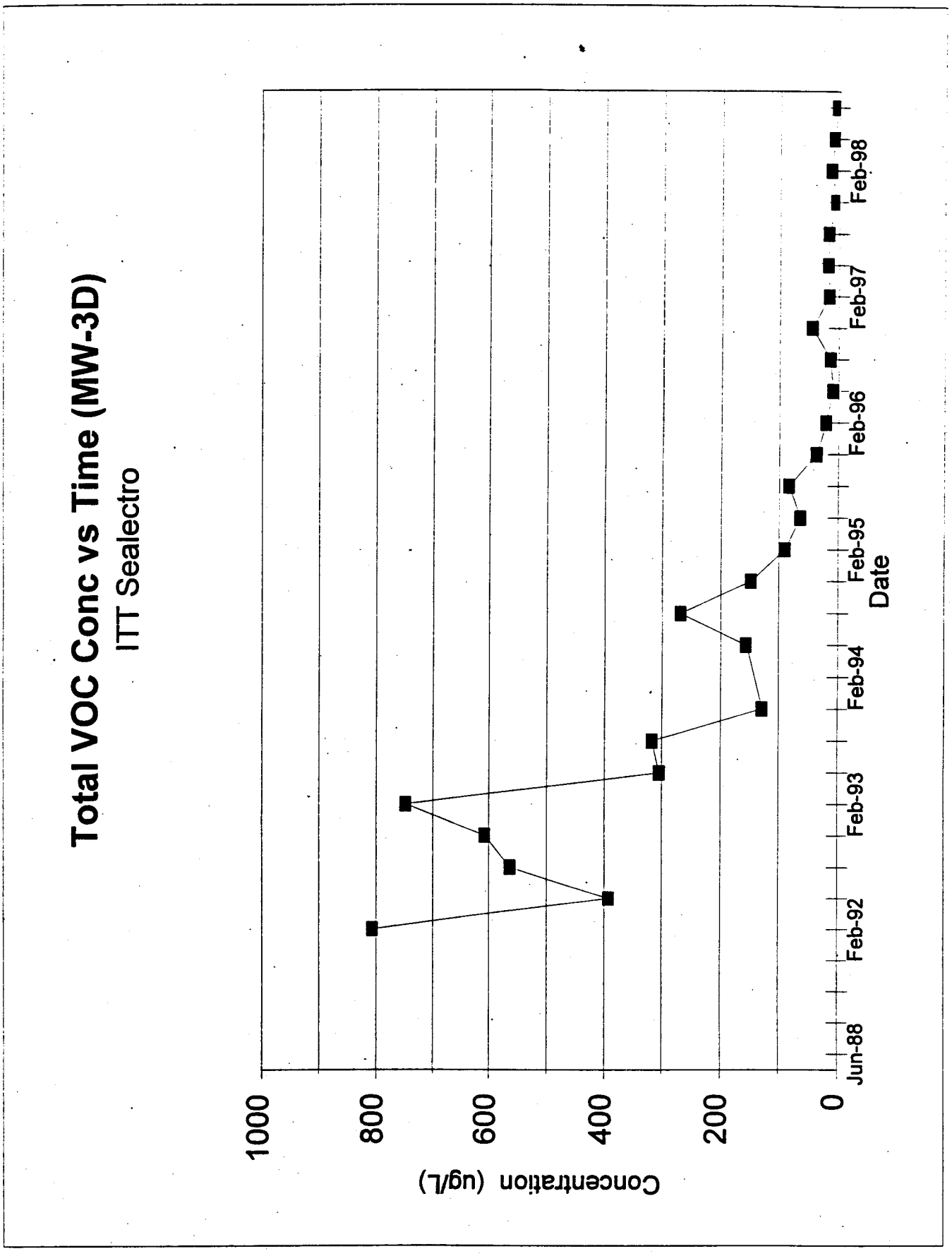

Total VOC Conc vs Time (MW-3D)
ITT Sealectro
Concentration (ug/L)
1000
800
600
400
200
0
Jun-88
Feb-92
Feb-93
Feb-94
Feb-95
Feb-96
Feb-97
Feb-98
Date

FIGURE 7

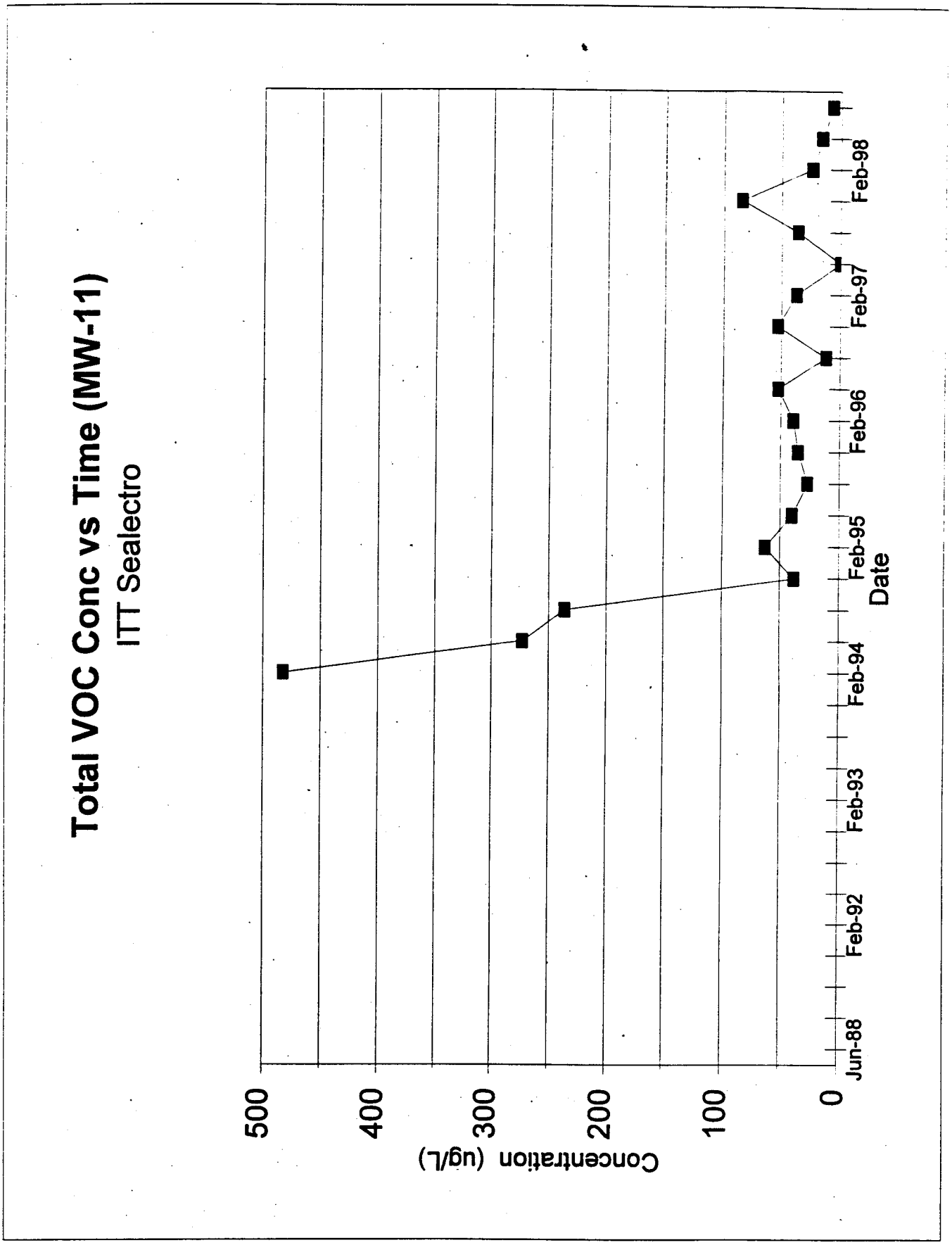
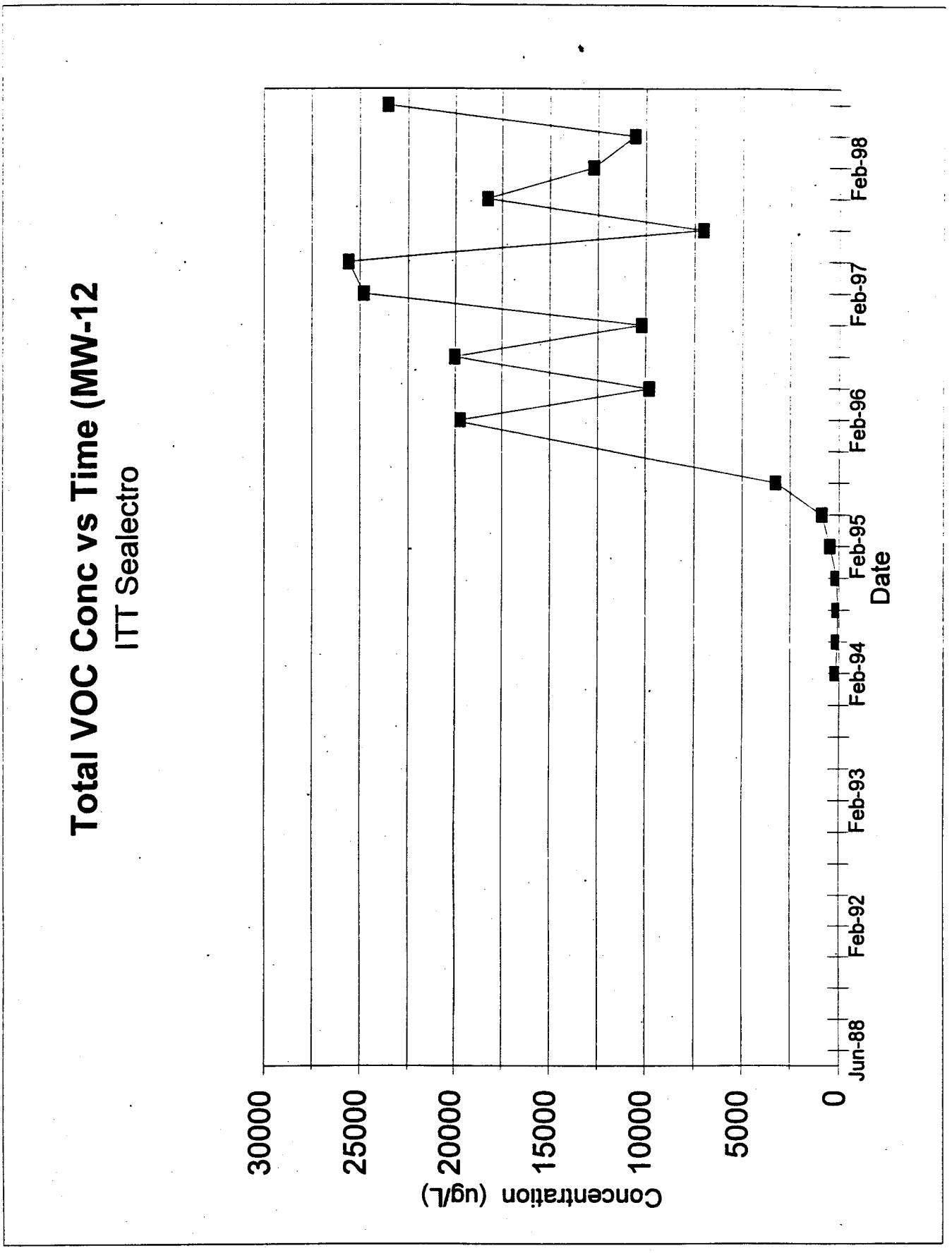

Total VOC Conc vs Time (MW-11)
ITT Sealectro
Concentration (ug/L)
500
400
300
200
100
0
Jun-88
Feb-92
Feb-93
Feb-94
Feb-95
Feb-96
Feb-97
Feb-98
Date

FIGURE 8


Total VOC Conc vs Time (MW-12
ITT Sealectro
Concentration (ug/L)
30000
25000
20000
15000
10000
5000
0
Jun-88
Feb-92
Feb-93
Feb-94
Feb-95
Feb-96
Feb-97
Feb-98
Date

Appendix B

Ground water sampling protocol

MONITORING WELL SAMPLING PROCEDURES

The following procedures will be used to obtain representative ground water samples at the site. A low volume pump may be used to evacuate monitoring wells containing more than a few gallons of water.

Sampling Procedures (BAILER)

1. Identify the well and record the location on the Ground Water Sampling Field Log (attached) or in a field book.

2. Put on a new pair of disposable gloves.

3. Cut a slit in the center of a clean plastic sheet, and slip it over the well creating a clean surface onto which the sampling equipment can be positioned. If surface conditions (snow, mud, etc.) create a hazardous or otherwise unacceptable working condition using the plastic, alternate methods must be used to maintain the cleanliness and integrity of the sampling equipment.

4. Using an electric water level indicator graduated to 0.01 feet, measure the depth to the water table and the depth of the well. Record this information on the Ground Water Sampling Field Log. Clean the well depth probe and rinse it with distilled water after each use.

5. Compute the volume of water in the well, and record this volume on the Ground Water Sampling Field Log

6. Attach enough new, clean polypropylene rope to a disposable Teflon bailer to reach the bottom of the well, and lower the bailer slowly into the well making certain to submerge it only far enough to fill it one-half full. The purpose of this is to observe the physical appearance of the ground water and to recover any oily film which may be present at the ground water surface.

7. Pull the bailer out of the well keeping the polypropylene rope off the ground or on the plastic sheet. Empty the ground water from the bailer into a clean glass container and observe its appearance. Record the physical appearance on the Ground Water Sampling Field Log.

   If a bailer is used to purge the well, then proceed with Step 8. If a pump is used to purge the well, then refer to the pump procedures section of this Appendix.

8. Initiate bailing the well from the top of the water table making certain to keep the

polypropylene rope off the ground or on the plastic sheet. The quantity of water removed from the well should be recorded. Water bailed from the monitoring wells will be containerized, placed in Recovery Sump (RW-2) and will be treated by the on-site system.

9. Continue bailing the well until a minimum of three volumes of ground water in the well has been removed, or until the well is bailed dry. Measurements of pH, temperature, conductivity will be collected after each well volume is removed. If the readings of pH, temperature, and conductivity have not stabilized after removal of three well volumes, purging will continue until the readings stabilize, or a maximum of five well volumes, whichever comes first. Sampling will be performed within approximately 1 hour of final purge. Record this information on the Ground Water Sampling Field Log.

10. Remove the sampling bottles from their transport containers, and prepare the bottles for receiving samples. Inspect all labels to ensure proper sample identification. Sample bottles should be kept cool with their caps on until they are ready to receive samples. Arrange the sampling containers to allow for convenient filling. Always fill the containers labeled "volatiles" (40 ml VOA bottles) first.

11. To minimize agitation of the water in the well, initiate sampling by lowering the bottom disposable Teflon bailer slowly into the well making certain to submerge it only far enough to fill it completely.

12. If the sample bottles cannot be filled quickly, keep them cool with the caps on until they are filled. The vials labeled "volatiles" should be filled from one bailer, then securely capped. To avoid agitation, carefully fill the 40 ml VOA vials. Cap the VOA vials, turn each vial upside down, gently tap, and check for air bubbles. If properly filled, there should not be visible air bubbles.

13. Record the physical appearance of the ground water observed during sampling on the Ground Water Sampling Field Log.

14. After the last sample has been collected, record the date and time. Fill a beaker with water from the surface of the water table and measure and record the pH, specific conductivity, and temperature. Follow the procedures outlined in the equipment operation manuals. Record this information on the Ground Water Sampling Field Log. The beaker must then be rinsed with distilled water prior to reuse.

15. Begin the Chain of Custody Record.

16. Replace the well cap, and lock the well protection assembly before leaving the well

location.

17. Place the polypropylene rope, gloves, disposable bailer, and plastic sheeting into a plastic bag for disposal.

Purging Procedures (PUMP)

If a centrifugal pump is used to purge the well prior to sampling, the procedures will be modified as follows:

1. Prepare the pump for operation. Place a disposable polyethylene foot valve on new polyethylene tubing. Clean the tubing with distilled water as it is placed into the well.

2. Connect the polyethylene tubing to the Centrifugal pump. Prime the centrifugal pump using potable water. Estimate pump discharge rate using either a flow meter or timing the fill rate of a container of known volume. Pumping should continue until a sufficient volume of water has been removed, as specified in Step 10. Water pumped from monitoring wells will be containerized and placed in the Recovery Sump (RW-2). The pump will be used only to evacuate the monitoring well. A disposable Teflon bailer will be used to collect samples.

3. Proceed to Step 11 of the sampling procedures for collection of samples using a bailer.

Ground Water Sampling Log

O'Brien & Gere Engineers, Inc.

Date _____ Personnel _____ Weather _____

Site Name _____ Evacuation Method _____ Well # _____

Site Location _____ Sampling Method _____ Project # _____

Well information:

Depth of Well * _____ ft.

Depth to Water * _____ ft.

Length of Water Column (LWC) _____ ft.

* Measurements taken from

☐ Top of Well Casing

☐ Top of Protective Casing

☐ (Other, Specify)

2 inch diameter wells = 0.163 x LWC = _____ gallons

4 inch diameter wells = 0.653 x LWC = _____ gallons

6 inch diameter wells = 1.469 x LWC = _____ gallons

Well Volumes	Depth to Water	Temperature	pH	Specific Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Notes
Initial								
1								
2								
3								
4								
5								
Sample								

Water sample:

Time collected: _____

Total volume of purged water removed: _____

Physical appearance at start

Color _____

Odor _____

Sheen/Free Product _____

Physical appearance at sampling

Color _____

Odor _____

Sheen/Free Product _____

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

Appendix C

WCDEF permit

DEPARTMENT OF ENVIRONMENTAL FACILITIES

ANDREW J. SPANO
County Executive

ANTHONY M. LANDI, P.E.
Acting Commissioner

Division of Solid Waste

Wastewater Treatment

Water Agency

August 18, 1999

O'Brien & Gere Engineers, Inc.
Rariton Plaza 1
Edison, NJ 08837

Attn: Mr. Steven J. Roland, P.E.

RE : Ground water remediation

Site # - 065-99
ITT Sealectro, Inc, Facility
139 Hoyt Street
Mamaroneck, N.Y.

The wastewater discharge from the above mentioned location may be discharged to the County's sewer system. The limitations and requirements are as follows :

A) Effective dates of Permit - 08/28/99 - 08/31/01 inclusive

B) Maximum discharge to sewer (GPM) - 15

C) Treatment - Sewer Use Ordinance (SUO) limitations (Attached)

D) Analyses of treated wastewater for limitations stated in (SUO) sent to this office within 30 days of permit date

E) Additional set of analyses every 30 days if site is active for longer than 30 days

F) Notification, in writing, is to be sent to this office when site is no longer active and/or remediation work is completed.

If you have any further questions, please contact Mr. Carmine Bova of my staff at (914)637-3035.

Robert Cea
Program Director

270 North Avenue • New Rochelle, N.Y. 10801 • (914) 637-3000
www.co.westchester.ny.us

LOCAL LIMITATIONS

REGULATED POLLUTANT	AVERAGE DAILY CONCENTRATION (mg/L)
Arsenic	0.2
Barium	2.0
Cadmium	0.7
Chromium (Total)	3.0
Chromium (Hex)	2.0
Copper	2.8
Cyanide (Total)	0.8
Lead	0.4
Mercury	0.2
Nickel	2.8
Oil & Grease	100.0
Phenols	4.0
Selenium	0.2
Silver	0.8
Total Toxic Organics	2.1
Zinc	1.8

Basis of design for treatment system

Ground Water Conveyance and Treatment System
Basis of Design Summary

Oil / Water Separator - Equalization Tank (150 gal.)

Parameter	Flow Rate
Maximum Hydraulic Capacity	20 gpm
Maximum Design Capacity	10 gpm
Normal Operating Capacity with oil removal capability	0 - 10 gpm

Operating capacity of an equalization tank is 86 gal.

Closed Loop Air Sparging Tank (900 gal.)

Parameter	Retention Time (minutes)	Air : Water ratio
5 gpm	105	100
10 gpm	52.5	100
15 gpm	35	100
20 gpm	26	100

Operating capacity of air sparging tank is 525 gal.

Air Blower

Parameter	Air Blower size
0 - 15 gpm inlet Ground Water treated	200 cfm
15 - 20 gpm inlet Ground Water treated	300 cfm

Existing Air Blower is 200 cfm capacity.

Effluent Pump

Parameter	Flow Rate vs. TDH
0 - 5 gpm	5 gpm @ 30 TDH
5 - 10 gpm	10 gpm @ 30 TDH
10 - 15 gpm	15 gpm @ 30 TDH
15 - 20 gpm	20 gpm @ 30 TDH

Existing effluent pump is 5 gpm capacity.

Granular Activated Carbon

Parameter	
50 - 100 cfm	Two 200 lbs. GAC canisters in series
100 - 200 cfm	Four 200 lbs. GAC canisters two in series, two in parallel

Existing System has two 200 pound GAC canisters in series
Existing system is treating VOCs from RW - 2.
Carbon usage is dependent on VOC concentrations removed from recovered ground water in GWTS.

Appendix E

O&M plan table of contents

OPERATION & MAINTENANCE MANUAL
FOR
GROUND WATER COLLECTION AND TREATMENT FACILITIES
ITT-SEALECTRO
MAMARONECK, NEW YORK

TABLE OF CONTENTS

LIST OF TABLES	DESCRIPTION
Table 1	Valve Schedule

LIST OF FIGURES	DESCRIPTION
Figure 1	Process Flow Schematic
Figure 2	Equipment and Piping Isometric
Figure 3	Control Panel Foreplate Layout

Appendix F

Health and safety plan

HEALTH AND SAFETY PLAN

Remedial Design/Remedial Action

ITT Sealectro
Mamaroneck, New York

September 1999

O'BRIEN & GERE
ENGINEERS, INC.

Contents

1. Introduction

This Health and Safety Plan (HASP) has been developed to provide the requirements and general procedures to be followed by O'Brien & Gere Engineers, Inc. (O'Brien & Gere) personnel while completing the routine sampling, operations and maintenance activities and activities associated with implementing the (RD/RA) Contingency Remedy at the ITT Sealectro Site in Mamaroneck, New York. This HASP describes the responsibilities, training requirements, protective equipment, and standard operating procedures to be utilized by O'Brien & Gere personnel while on the site to address potential exposure to identified contaminant levels. This plan specifies procedures and equipment to be utilized to minimize exposures of O'Brien & Gere personnel to hazardous materials as well as measures to be employed by O'Brien & Gere personnel for decontamination of personal protective and other field equipment and during emergency response. This plan also identifies the measures to be implemented to protect the health and safety of the community. This HASP incorporates by reference the applicable Occupational Safety and Health Administration requirements in 29 CFR 1910 and 29 CER 1926.

The requirements and guidelines in this HASP are based on a review of available information and an evaluation of potential on-site hazards. This HASP will be discussed with site personnel and will be available on-site for review while work is underway. On-site O'Brien & Gere personnel report to the O'Brien & Gere Site Safety and Health Officer (SSHO) in matters of health and safety. The on-site O'Brien & Gere project supervisors are responsible for enforcement and implementation of the O'Brien & Gere HASP.

This HASP is specifically intended for the conduct of activities within the defined scope of work in specified areas of the site. Changes in site conditions and future actions that may be conducted at this site may necessitate the modification of the requirements of this HASP. Although this HASP can be made available to interested persons for informational purposes, O'Brien & Gere Engineers has no responsibility over the interpretations or activities of any other person or entities other than employees of O'Brien & Gere Engineers, Inc.

1.1. Site background and description

Multiple investigations and several interim remedial measures (IRMs) have been completed at the site to address known areas of contamination. The most recent investigation completed was the Remedial Investigation (RI). The results of the RI and previous investigations are presented in the *Remedial Investigation Report* dated December 1994 and the *Remedial Investigation Report Addendum* dated July 1995. The RI was subsequently approved by the NYSDEC in July 1995. The report concluded that residual dense non aqueous phase liquids (DNAPLs) are heterogeneously distributed in subsurface soils at the site. The residual DNAPLs in the soil act as a continuing source of volatile organic compounds (VOCs) to ground water. A human health risk assessment was completed as part of the RI Report. The risk assessment concluded that the conditions at the site do not pose an unacceptable risk.

Four IRMs were performed at the site. The IRMs completed in 1991 and 1992 included the removal of nine underground storage tanks (USTs), removal and off-site disposal of 148 yd cubic yards (yrd^3) of contaminated soils, recovery of approximately 234 gallons of fuel oil, and removal of 27 pounds (lbs) of VOCs from soil using a pilot *in situ* air stripping system. In addition, a ground water recovery system and treatment system was installed in 1992 at the Solvent UST area. This system is still actively recovering and treating ground water. The ground water recovery and treatment system has recovered more than 325 pounds of VOCs as of October 1998. It has been estimated that the IRM activities have removed more than 50% of the VOC mass from the subsurface.

A ground water sampling program was initiated at the site in 1988. Quarterly sampling was initiated in July 1991 and continues to date. Up to 34 rounds of samples have been collected from selected monitoring wells. The data indicate that the concentrations of VOCs at most wells have decreased substantially over time. This trend suggests that the IRMs have been effective in reducing the concentrations of VOCs in ground water.

A Feasibility Study (FS) was completed for the site and a number of potential remedial alternatives were developed and evaluated in the study. The results were presented in the *Feasibility Study Report* dated January 1999. Based on the FS, the ROD identified Monitored Natural Attenuation

as the selected remedy. The components of the remedy are summarized below:

- The continued operation and maintenance (O&M) of the Solvent UST ground water extraction and treatment system
- The institution of a long term ground water monitoring program, which includes a set of year-by-year cleanup goals, for wells MW-2, MW-2D, MW-3, MW-3D, MW-11, MW-12, and TW-1
- A Contingency Remedy Plan that will be triggered if the maximum annual concentration at any of the wells being monitored exceeds the cleanup goals for three consecutive years. Additionally, if the NYSDOH determines that impacts to indoor air quality from the infiltration of site related contamination requires mitigation measures, the contingency plan or other measures will be implemented.
- An indoor air monitoring program

The aspects of the selected remedy where Health and Safety procedures are required include routine O&M of the ground water extraction and treatment system ground water sampling, ground water elevation monitoring and subsurface trenching associated with implementation of the Contingency Remedy Plan.

1.2. Community health and safety plan

As part of the Community Health and Safety Plan, measurements of respirable particulate concentrations and organic gases will be made using a Mini-ram or TSI Dusttrak and a photoionization detector when invasive work is being completed outdoors.

If respirable particulate concentrations exceed the NYSDEC TAGM (HWRZ 89-4031) on fugitive dust suppression and particulate monitoring at Inactive Hazardous Waste Sites (NYSDEC, 1989a) a standard of 150 ug/m3 above background, engineering efforts will be made to reduce the concentration of airborne particulates. The following techniques may be used for controlling the generation and migration of fugitive dust during invasive activities:

1. Apply water on haul loads.

2. Wetting equipment and excavation faces.

3. Spraying water on buckets during excavation and dumping.

4. Hauling materials in properly tarped or water tight containers.

5. Restricting vehicle access to 10 mph.

6. Covering/excavated areas and materials after excavation activity ceases. PID readings will be recorded at the level of the breathing zone of the most highly exposed worker at least hourly and at 15 minute intervals in the downwind direction if work activities are upwind of residences. If PID readings are greater than 5 ppm above background conditions, monitoring will be initiated at the downwind property boundary. Should PID readings greater than 5 ppm exist at the downwind property boundary, work will immediately cease and the NYSDEC and Project Officer will be immediately notified.

2. Project personnel

While each person involved in activities at the site implicitly has a part in implementing the overall project health and safety plan, certain individuals have specifically designated responsibilities. Within O'Brien & Gere, these are the Project Officer, Project Supervisor, and the Site Safety & Health Coordinator.

Project Officer

Mr. Steve Roland is the Project Officer. The Project Officer is responsible for the overall administration and technical execution of the project. The Project Officer is further responsible for the acquisition and delegation of resources necessary for project completion and HASP implementation.

Project Supervisor

Mr. Guy Swenson is the Project Supervisor. The Project Supervisor is directly responsible for the technical progress and financial control of the project. The Project Supervisor will see that the HASP is implemented.

Company Safety and Health Officer

Dr. Swiatoslav Kaczmar is the Company Safety and Health Officer for this study. The Company Safety and Health Officer is responsible for the development of this HASP.

Site Safety and Health Officer

Mr. Bhavani Rathi , or a designee, is the O'Brien & Gere Site Safety and Health Officer for this study. The Site Safety and Health Officer (SSHO) for O'Brien & Gere employees enforces the health and safety operating standards for the project supervisor and coordinates overall O'Brien & Gere project safety and health activities at the site. The SSHO reviews project plans and revisions to plans to determine that safety and health procedures are maintained. The SSHO suggests changes, if necessary, to the project supervisor. Specifically, the SSHO is responsible for:

1. Providing a copy of the HASP at the site prior to activities and familiarizing workers with it.

2. Conducting on-site health and safety training and briefing sessions.

3. Documenting the availability, use, and maintenance of personal protective, decontamination and other safety or health equipment.

4. Maintaining safety awareness among O'Brien & Gere employees and communicating safety and health matters to them.

5. Reviewing field activities for performance in a manner consistent with O'Brien & Gere policy and this HASP.

6. Monitoring health and safety conditions during field activities.

7. Coordinating with emergency response personnel and medical support facilities.

8. Initiating corrective actions in the event of an emergency, an accident or identification of a potentially unsafe condition.

9. Notifying the project supervisor of an emergency, an accident, the presence of a potentially unsafe condition, a health or safety problem encountered or an exception to this HASP.

10. Recommending improvements in safety and health measures to the project supervisor.

11. Conducting safety and health performance and system audits.

The SSHO has the authority to:

1. Suspend field activities or otherwise. limit exposures if the health or safety of any O'Brien & Gere employee appears to be endangered.

2. Advise O'Brien & Gere personnel to alter work practices that the SSHO deems to not protect them or the environment surrounding the former ITT Sealectro site.

3. Recommend suspension of an O'Brien & Gere employee from field activities for violation of the requirements of this HASP.

3. Health and safety hazards

Volatile organic compounds have been detected at the site in the soil or water during previous investigative studies. These compounds were found in soil and from water samples collected from monitoring wells on the site.

Possible exposure pathways are inhalation of the VOCs; inhalation of dusts, accidental ingestion of chemical compounds; and skin contact/absorption with soils. These chemicals affect the central nervous and gastrointestinal systems. An increase in complaints of fatigue, drowsiness, headache, confusion, increased irritability, or dizziness may be the result of over exposure by inhalation. Overexposure of the skin, eyes and mucous membranes may result in irritation and dryness.

Based upon anticipated site activities and prudent safety and health practices during site work, ingestion of site chemical compounds is unlikely. Hazardous skin contact or absorption by the various compounds is also unlikely because personal protective equipment will be used when necessary. The primary route of exposure is inhalation of organic vapors and dusts containing VOCs. However, inhalation of airborne residuals approaching OSHA PELs is unlikely because of natural ventilation of the work area, safe work practices, PPE, and/or air monitoring. Some compounds may cause noticeable odors during excavation. Confined spaces such as inside tanks and deep excavations (>5 feet), represent special exposure considerations because of the reduced natural ventilation and restricted means of egress. Special procedures will be used to prevent injury and overexposure in confined spaces.

In addition to the hazards stated above, other potential health hazards associated with trenching excavation activities include walking on uneven or unstable terrain, stability of the walls of the trench, falls, entrapment, overhead transport of material loads, water accumulation, and occupation of the trench by animals during unoccupied periods.

Measures within this HASP have been selected to protect workers from dust and water entering the eyes and contacting the skin. Protection from exposure of the respiratory system to mixtures of the VOCs identified in the

soil and ground water and to respirable dusts generated during site activities has also been considered. Measures to minimize risk and prevent injury while working in trenches have been considered. It will be the responsibility of the Project Officer or the SSHO to monitor the stability of the excavation and adjacent structures; implement engineering controls to protect workers from unstable structures and/or soil; and conduct daily inspections of the excavation, and excavation and employee protection systems. This person must be trained and equipped to identify existing and predictable hazards associated with excavations.

Use of the existing O'Brien & Gere Standard Operating Procedures (SOPs) and the engineering controls, work practices and personal protective equipment specified in this HASP is intended to minimize the risks of potential exposure to hazardous materials and conditions. If field measurements or observations indicate that a potential exposure is greater than the protection afforded by the equipment or procedures specified below, work will be stopped and O'Brien & Gere personnel will leave the site until the potential exposure has been reduced to specified limits and/or the level of protection provided has been increased.

4. Personal protective equipment

Personnel will be provided with personal safety equipment and protective clothing selected for the work tasks. Each individual will be trained in the use of this safety equipment before the start of work activities. Cleaning and maintenance of protective equipment and clothing in accordance with the manufacturer's specifications is the responsibility of project personnel. The SSHO will monitor the protective equipment maintenance procedures.

Levels of protective clothing and equipment selected for this project is EPA Level D and modified Level D. Safety equipment and protective clothing will be used as directed by this HASP. Personal protective equipment will be worn at times designated by this HASP.

Level D Protection (Routine O&M of treatment system, ground water sampling and ground water elevation monitoring)

1. Work clothes (long pants, long sleeved shirt).
2. Nitrile gloves.
3. Leather, steel-toed boots.
4. Eye Protection. Splash protective goggles or a full face shield.

Modified Level D Protection (subsurface trenching associated with implementation of Contingent Remedy)

1. Water repellant coveralls or an apron over work clothes.
2. Nitrile gloves (taped over the coveralls).
3. Leather, steel-toed boots.
4. Eye Protection. Splash protective goggles or a full face shield.

5. As required:

   a. A full-face air-purifying respirator equipped with organic vapor cartridges and high-efficiency dust filters available for use by each potential user. Each user must have been trained and medically approved for such use.

   b. Hard hat

   e. Confined space associated life-line equipment.

Only respiratory protective equipment approved by NIOSH/MSHA will be used. No excessive facial hair that interferes with the effectiveness of a respirator will be permitted on personnel potentially required to wear respiratory protection equipment. The respirator must seal against the face so that the wearer receives air only through the air purifying cartridges attached to the respirator. Fit testing will be performed prior to respirator use to ensure that a proper seal is obtained by the wearer. Respirators will be inspected daily by the user. Respirators will be issued for the exclusive use of one worker and will be cleaned and disinfected at the end of each work day that it is used by the worker. Cartridges for air-purifying respirators will be changed at least daily or more often as necessary.

If equipment fails and/or an employee experiences a failure or other alteration of their protective equipment that may affect its protective ability, the buddy team will immediately leave the work area. Re-entry will not be permitted until the equipment has been repaired or replaced and the cause of the failure identified. The Project Supervisor and the SSHO will be notified and, after reviewing the situation, determine the effect of the failure on the continuation of ongoing operations. If the failure affects the safety of personnel, the worksite or the surrounding environment, personnel will be evacuated until appropriate corrective actions have been taken.

5. Activities and associated personal protective requirements

The levels of protection assigned to each activity below represent a best estimate of exposure potential and protective equipment needed for that exposure. Determination of levels was based on data provided by previous studies of the work site. The SSHO may recommend revisions of these levels of protection based on air monitoring results and on-site assessment of actual exposures.

5.1. Ground water sampling and preparation for analysis

1. Operation and tasks to be performed: Ground water samples will be collected quarterly.

2. Potential health hazards and contaminants: VOCs were detected in the ground water. During sampling, the possibility exists for splash of the sampler contents onto personnel. The chemicals may be released at levels that may present a skin contact hazard.

3. Contaminant dispersion pathways: The contaminants can be spread through the air and through skin contact.

4. Contaminant control: Workers will wear Level D protective clothing.

5.2. Ground water elevation monitoring

1. Operation and tasks to be performed: Surface water and ground water elevations will be collected periodically. Decontamination of the well evacuation equipment will be performed in the field.

2. Potential health hazards and contaminants: VOCs were detected in the ground water. During sampling, the possibility exists for splash of the

sampler contents onto personnel. The chemicals may be released at levels that may present a skin contact hazard.

3. Contaminant dispersion pathways: The contaminants can be spread through the air and through skin contact.

4. Contaminant control: Workers will wear Level D protective clothing.

5.3. Routine operations and maintenance

1. Operations and tasks to be performed: weekly compressor oil level checks and replacement as needed; quarterly treatment tank cleanout; vapor-phase carbon change outs as needed; and quarterly recovery pump cleaning and maintenance.

2. Potential health hazards and contaminants: VOCs were detected in the ground water. During operations and maintenance activities, the possibility exists for inhalation of volatile substances and splashing recovered waste contents or oil components onto personnel. The chemicals may be released at levels that may present an inhalation or skin contact hazard.

3. Contaminant dispersion pathways: The contaminants can be spread through the air and through skin contact.

4. Contaminant control: Workers will wear Level D protective clothing.

5.4. Trenching for underground utilities

1. Operations and tasks to be performed: Trench excavation between an existing well or wells and the ground water treatment system for the purpose of placement of underground utilities will be conducted.

2. Potential health hazards and contaminants: VOCs in soils and ground water may be released during excavation activities. The chemical hazards may present an inhalation, ingestion, or skin contact hazard. Potential physical hazards associated with excavations include trench

cave-in, falls, entrapment, water accumulation, and uneven or unstable walking surfaces.

3. Contaminant dispersion pathways: The contaminants may be transported through the air or skin.

4. Contaminant control: Workers will wear modified Level D protective clothing. A PID will be used continuously to monitor potential chemical contaminant levels during excavation activities. In addition, a Mini-ram or Dusttrak will be used to monitor dust levels during excavation activities.

Procedures used to control physical hazards associated with excavations and trenches are detailed in the Site Work Plan. It is the responsibility of the SSHO to conduct daily inspections to ensure that appropriate protective measures are implemented and maintained during excavation activities.

6. Air monitoring and action levels

Concentrations of VOCs in air are expected to be below the OSHA PELs. These measurements will be used as an indication of the need to initiate personal monitoring and/or increase worker protective measures. Because there is minimal potential for methane and hydrogen sulfide to be released, an explosive gas monitor will not be used.

Air monitoring for VOCs will be conducted as follows:

- Monitor for VOCs continuously during invasive work and while sampling MW-12 in the building.

- If the PID measurements of breathing zone air indicates that more than 5 ppm of volatile organic compounds are present, respirators equipped with organic vapor cartridges will be worn by the samplers. If PID measurements exceed 1 ppm, air sampling for vinyl chloride and benzene will be conducted using Drager tubes. Drager tube results will be recorded in the health and safety log book or project log book.

- If PID measurements of breathing zone air indicate that more than 10 ppm of volatile organic compounds are present, personnel will remain out of the active work area until the level is below 10 ppm. At this time the SSHO will don a full-face respirator equipped with organic vapor cartridges and collect air samples for vinyl chloride and benzene using appropriate colormetric detector tubes to determine if respiratory protection is adequate. If colormetric tube measurements for vinyl chloride and benzene indicate airborne concentrations greater than 10 ppm, work will stop and employees will exist the active work area until the hazard is controlled or a higher level of respiratory protection can be acquired.

Monitoring for airborne particulate matter will be conducted as follows during invasive activities:

- Dust concentrations greater than 150 ug/m3 above background levels indicate that dust suppression techniques (e.g., water application and activity controls) will be implemented to reduce the generation of dust.

- If the dust level cannot be maintained below 5 mg/m3, HEPA filters must be added to the respirators worn by the workers.

- A half-face or full face respirator with HEPA cartridges may be used in particulate concentrations of less than 10 mg/m3. A full-face respirator with HEPA cartridges must be used in particulate concentrations of less than 20 mg/m3 but greater than 10 mg/m3.

- If the particulate concentrations exceed 20 mg/m3 in the breathing zone, work will be halted and workers will be evacuated to another area of the site.

Records meeting the requirements of 29 CFR1910.20 will be kept for all employees relative to air monitoring conducted for health and safety protection.

7. Site access and site control

Site control procedures will be established during invasive activities to reduce the possibility of worker contact with compounds present in soil and ground water, to protect the public in the area surrounding the site by preventing the movement of chemicals and materials with chemicals on them from the site and to limit access to the site to these personnel required to be on it.

Work zones that will accomplish the general objective stated above will be established during invasive activities, by the Project Supervisor working with the SSHO. Three categories of work zones: an exclusion/contaminated work zone, a contamination reduction/buffer zone and a support/clean zone, will be established. A map depicting these work zones will be posted in a conspicuous location and reviewed during daily safety briefings. The Project Supervisor and the SSHO will establish a system appropriate to the site, the work and the work zones that will provide routine and emergency communications within and off the site.

A rope barricade will be used to segregate the exclusion zone from the decontamination/buffer zone and decontamination buffer zone from the support zone. Temporary fencing will be placed around any open excavations which are left unattended.

Site access will be monitored by the SSHO, who will maintain a log-in sheet for personnel, that will include, at the minimum, personnel on the site, their arrival and departure times and their destination on the site.

Personnel exiting the exclusion zone will be decontaminated prior to entering the support zone. The Project Supervisor and the SSHO will establish a decontamination system and decontamination procedures appropriate to the site and the work that will prevent potentially hazardous materials from leaving the site (See Section 10). The decontamination procedures will be reviewed at each daily safety briefing.

Personal hygiene facilities meeting at least the minimum requirements of 29 CER 1910.120 will be provided in the support zone.

8. Medical surveillance

The potential chemical hazards identified for this project (See Section 3) will not require any medical monitoring beyond that provided by the O'Brien & Gere Health and Safety Program.

The OSHA has established requirements for medical surveillance programs designed to monitor and reduce health risks to employees potentially exposed to hazardous materials (29 CER1910.120). This program has been designed to provide baseline medical data for each employee involved in hazardous waste operations and to determine the ability to wear personal protective equipment, such as chemical resistant clothing and respirators.

Employees who wear or may wear respiratory protection will be provided respirators as regulated by 29 CFR 19 10.134. This Standard requires that an individuals ability to wear respiratory protection be medically certified before performing designated duties. Where medical requirements of 29 CFR 1910.120 overlap those of 29 CFR 1910.134, the most stringent of the two will be enforced.

Medical examinations are administered on a pre-employment and annual basis and as warranted by symptoms of exposure or specialized activities. The examining physician makes a report to O'Brien & Gere of any medical condition which would place O'Brien & Gere employees at increased risk when wearing a respirator or other personal protective equipment. O'Brien & Gere maintains the medical records of O'Brien & Gere site personnel, as regulated by 29 CFR 1910.120 and 29 CFR 1910.20, where applicable.

9. Personnel training

Employees involved with on-site remedial activities will meet one of the following requirements prior to the start of work on site:

1. An off-site training course of at least 40 hours that meets the requirements specified in 29 CFR 1910.120(e) on safety and health at hazardous waste operations within the last 12 months.

2. An off-site refresher course of at least 8 hours meeting the requirements of 29 CFR 1910.120(e) on safety and health at hazardous waste operations within the last 12 months.

On-site management and, supervisors have completed an off-site training course of at least 8 hours meeting the requirements of 29 CER 1910.120(e) on supervisor responsibilities for safety and health at hazardous waste operations within the last 12 months. Employees who will respond to emergency situations involving hazardous materials have been trained in how to respond to such emergencies in accordance with the provisions of 29 CER 19 10.120(q).

A copy of the written certification of training completion will be maintained for each employee, supervisor and emergency responder requiring such training.

Site specific training will be provided to each employee and will be reviewed at daily safety briefings during invasive activities. Personnel will be briefed by the Project Supervisor or the SSHO as to the potential hazards to be encountered. Topics will include:

- Availability of this HASP.

- General site hazards and specific hazards in the work areas including those attributable to the chemicals present.

- Selection, use, testing and care of the body, eye, hand and foot protection being worn, with the limitations of each.

- Decontamination procedures for personnel, their personal protective equipment and other equipment used on the site.
- Emergency response procedures and requirements.
- Emergency alarm systems and other forms of notification, and evacuation routes to be followed.
- Methods to obtain emergency assistance and medical attention.

10. Decontamination

Splash protection garments will be washed with soap and clean potable water upon leaving the exclusion zone and will be air dried prior to storage. Dirt, oil, grease or other foreign materials that are visible will be removed from surfaces. Scrubbing with a brush may be required to remove materials that adhere to the surfaces.

Sampling equipment will be segregated and, after decontamination, stored separately from splash protection equipment. Decontaminated or clean sampling equipment not in use will be covered with plastic and stored in a designated storage area in the support zone.

Water used for decontaminating personnel and equipment will be contained and placed into the on-site ground water treatment system.

11. Emergency response

11.1. Notification of site emergencies

In the event of an emergency, personnel will signal distress with three blasts from a horn provided by O'Brien & Gere (vehicle horn, air horn, etc.). The Project Supervisor and the SSHO will then be immediately notified of the nature and extent of the emergency.

Table C1 contains Emergency Response Telephone Numbers. Table C2 contains directions to the supporting hospital. These tables will be maintained at the work site by the SSHO. The location of the nearest telephone will be determined prior to initiation of on-site activities.

11.2. Responsibilities

The SSHO will be responsible for responding to emergencies. Prior to initiating activities, the SSHO will::

1. Notify individuals, authorities and/or health care facilities of the potentially hazardous activities and potential wastes that may develop as a result of the investigation;

2. Confirm that the following safety equipment is available: eyewash station, first aid supplies, and fire extinguishers;

3. Have a working knowledge of the safety equipment available; and

4. Confirm that a map detailing the most direct route to the Hospital is prominently posted with the emergency telephone numbers.

The SSHO will be responsible for directing notification, response and follow-up actions and for contacting outside response personnel (ambulance, fire department or others).

In the case of an evacuation, the SSHO will account for personnel. A log of individuals entering and leaving the site will be kept so that everyone can be accounted for in an emergency.

Upon notification of an exposure incident, the SSHO will contact the appropriate emergency response personnel for recommended medical diagnosis and, if necessary, treatment. The SSHO will determine whether and at what levels exposure actually occurred, the cause of such exposure, and the means to prevent similar incidents from occurring.

11.3. Accidents and injuries

In the event of an accident or injury, measures will be taken to assist those who have been injured or exposed and to protect others from hazards. If necessary, immediate medical care will be provided by O'Brien & Gere personnel trained and competent in first aid procedures. Other on-site medical and/or first aid response to an injury or illness will only be provided by trained personnel competent in such matters.

If an individual is transported to a hospital or doctor, a copy of the HASP will accompany the individual.

The SSHO will be notified and will respond according to the seriousness of the incident. The SSHO will perform an investigation of the incident and prepare a signed and dated report documenting the investigation. An exposure-incident reporting form will also be completed by the SSHO, the Project Supervisor and the exposed individual. The form will be filed with the employees medical and safety records to serve as documentation of the incident and the actions taken.

11.4. Communication

Portable telephones will be used during field activities to provide emergency response communications.

11.5. Safe refuge

Vehicles or project trailers will serve as the immediate place of refuge in the event of an emergency. If evacuation from the area is necessary, project vehicles will be used to transport on-site personnel to safety.

11.6. Security and control

Site security and control during emergencies, accidents and incidents will be monitored by the on-site Project Supervisor or the SSHO. They are responsible for limiting access to the site to authorized personnel and for oversight of reaction activities.

11.7. Emergency evacuation

In case of an emergency, personnel will evacuate to the safe refuge identified by the Project Supervisor or SSHO, both for their personal safety and to prevent the hampering of response/rescue efforts.

11.8. Resuming work

Before on-site work is resumed following an emergency, necessary emergency equipment will be recharged, refilled or replaced. Government agencies will be notified as appropriate.

11.9. Fire fighting procedures

A fire extinguisher will be available in the on-site Project Supervisor's vehicle during on-site activities during invasive activities. This extinguisher is intended for small fires. When a fire cannot be controlled with the extinguisher, the area will be evacuated immediately. The SSHO will be responsible for directing notification, response and follow-up actions and for contacting ambulance and fire department personnel.

11.10. Emergency decontamination procedure

The extent of emergency decontamination depends on the severity of the injury or illness and the nature of the contamination. Whenever possible, minimum decontamination will consist of washing, rinsing and/or removal of contaminated outer clothing and equipment. If time does not permit decontamination, the person will be given first aid treatment, and then wrapped in plastic or a blanket prior to transport to medical care. If heat stress is a factor in the victim's illness/injury, the outer protective garment will be removed from the victim immediately.

11.11. Emergency equipment

The following on-site equipment for safety and emergency response will be maintained in the on-site field vehicle of the Project Supervisor and/or the SSHO:

1. fire extinguisher;
2. first aid kit;
3. eye wash station (wash bottles at a minimum);
4. extra copy of this Health and Safety Plan.

12. Special precautions and procedures

The activities associated with this investigation may involve potential risks of exposure to both chemical and physical hazards. The potential for chemical exposure to hazardous substances will be significantly reduced through the use of air monitoring, personal protective clothing, engineering controls, and implementation of safe work practices.

Other potential hazards that are associated with site activities may include heat stress, working around heavy equipment, and working around open trenches. Precautionary measures have been established to reduce these risks to a minimum during work activities. Special care should be taken when working around open trenches to prevent serious injury related to slips and falls and cave-in of trench walls.

12.1. Heat stress/cold injury prevention

Training in prevention of heat and/or cold injuries will be provided as part of the site specific training. The anticipated timing of this project may be such that heat stress/cold stress may pose a threat to the health and safety of personnel. Work/rest regimens will be employed as necessary so that personnel do not suffer adverse effects from heat stress/cold stress. Special clothing and appropriate diet and fluid intake regimes will be recommended to personnel to further reduce these temperature-related hazards. A warm, dry rest area will be required because of the possibility of exposure to cold and/or wet conditions.

12.2. Site refuse

Site refuse will be contained in appropriate areas or facilities. Personnel will make certain that trash is not scattered throughout the area of activity and that trash and scrap materials are immediately and properly disposed.

12.3. Additional safety practices

The following are important safety precautions which will be enforced during this investigation:

1. Activities in the exclusion zone will be conducted using the A Buddy System. The buddy is another worker fully dressed in the appropriate personal protective equipment, who can perform the following activities:

   a. Provide the partner with assistance;

   b. Observe the partner for sign of chemical or heat exposure;

   c. Periodically check the integrity of the partner's personal protective equipment; and

   d. Notify others if emergency help is needed.

2. Medicine and alcohol can potentiate the effect from exposure to certain compounds. Controlled substances and alcoholic beverages will not be consumed during investigation activities. Consumption of prescribed drugs will only be at the direction of a physician familiar with the person's work.

3. Eating, drinking, chewing gum or tobacco, smoking, or other practices that increase the probability of hand-to-mouth transfer and ingestion of material is prohibited except in areas designated by the SSHO.

4. Contact with potentially contaminated surfaces will be avoided whenever possible. Workers will not unnecessarily walk through puddles, mud, or other discolored surfaces; kneel on the ground; or lean, sit or place equipment on drums, containers, vehicles or the ground.

5. Personnel and equipment in the work areas will be minimized, consistent with effective site operations.

6. Unsafe equipment left unattended will be identified by a A DANGER, DO NOT OPERATE TAG.

7. Work areas for various operational activities will be established.

12.4. Daily log contents

The Project Supervisor and the SSHO will establish a system appropriate to the site, the work and the work zones that will record, at a minimum, the following information:

1. Personnel on the site, their arrival and departure times and their destination on the site.

2. Incidents and unusual activities that occur on the site such as, but not limited to, accidents, spills, breaches of security, injuries, equipment failures and weather-related problems.

3. Conversations that may affect the work such as: media visits; safety and health inspections by the SSHO and external agencies; owner/agency meetings; and employee/union meetings.

4. Changes to the Work Plan and the HASP.

5. Daily information generated such as: changes to work and health and safety plans; work accomplished and the current site status; and air monitoring results.

TABLE C1
EMERGENCY RESPONSE TELEPHONE NUMBERS

United Hospital, Port Chester, NY		
	Emergency	914-939-7000
	Ambulance	914-698-2400
Police		914-698-2400
Fire Department		914-698-0200
O'Brien & Gere Contact (Guy Swenson)		315-437-6100 (W) 315-673-3250 (H)
Keith Browne (NYSDEC)		914-255-5453
John Olm (NYSDOH)		518-402-7880
Carlos Torres (Westchester County Health Department)		914-637-4700

TABLE C2

DIRECTIONS TO UNITED HOSPITAL
PORT CHESTER

Turn Left onto Hoyt Avenue from site.

Turn Right onto Mamaroneck Avenue.

Turn left onto US 1, heading North.

Six miles to United Hospital, Port Chester.