SECOR
International Incorporated

In-situ Chemical Oxidation Pilot Test Report of Findings
25 Melville Park Road
Melville, New York

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1.0 INTRODUCTION

On behalf of WHCS Melville, LLC (WHCS), *SECOR* International Inc. (*SECOR*) is pleased to submit this report of findings for the *in-situ* chemical oxidation pilot test conducted at 25 Melville Park Road, Melville, New York in July 1998. The pilot test was performed to evaluate the effectiveness of using Fenton's reagent to chemically oxidize the residual contamination present in groundwater beneath the eastern portion of the site. The pilot test was conducted in accordance with the Revised *In-situ* Oxidation Pilot Test Work Plan (May 19, 1998) approved by the New York State Department of Environmental Conservation (NYSDEC) in June 1998. All modifications to the approved work plan were communicated to the NYSDEC for approval prior to implementation.

2.0 OBJECTIVE

The primary objective of the pilot test was to assess the applicability of *in-situ* chemical oxidation to remediate dissolved and adsorbed chlorinated volatile organic compounds (VOCs) in the water bearing zone at the referenced site. Fenton's reagent (hydrogen peroxide and ferrous sulfate) produces hydroxyl radicals which result in the oxidation of organic material (i.e organic contaminants). The pilot test consisted of injecting Fenton's reagent into the subsurface using a series of shallow wells screened across the water table from 45 to 60 feet below grade and deep wells screened from 75 to 90 feet below grade. The locations and depths of injection were within the primary zone of contamination based on the residual VOC concentrations detected in soil and groundwater. The pilot test was conducted within the property boundaries and the test area was monitored using wells located on the periphery of the area of injection.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

The geology at the site has been characterized as glacial outwash sand and gravel to a depth of approximately 170 feet below grade, beneath which is the Magothy sand and gravel deposit. The Magothy Formation, which is approximately 300 feet thick at the site, is described as a sand and gravel deposit with minor lenses of silt and clay concentrated in its upper portion. Below the Magothy Formation is the Raritan Clay, which is 100 to 300 feet thick. The Raritan Clay is reported to overlie the Lloyd Aquifer, which ranges in thickness from 100 to 300 feet. Competent crystalline metamorphic bedrock is reported to underlie the Lloyd Aquifer.

Groundwater at the site is encountered at a depth of approximately 45 to 50 feet below grade. The direction of groundwater flow has been determined to be to the south-southeast with a gradient of 0.001 in the vicinity of the loading dock.

4.0 PILOT TEST PROCEDURES

The *In-situ* Chemical Oxidation Pilot Test injections were conducted from July 9 - 12, 1998. During the pilot test, water and Fenton's reagent were injected into nine shallow and six deep wells. Groundwater quality monitoring was performed in eleven shallow and six deep observation wells. Prior to conducting the pilot test, a groundwater sampling event was performed from March 30 - April 1, 1998 to establish baseline VOC concentrations and groundwater chemistry. After completing the pilot test injections, three groundwater sampling events were performed on July 15th, July 20th, and August 3 - 4, 1998 to evaluate the effectiveness of the pilot test. Details regarding implementation of the pilot test are provided below.

4.1 Injection and Observation Wells

Construction details for the injection and observation wells used during the pilot test are provided in further detail below and are summarized in Table 1. The locations of the injection and observation wells are shown on Figure 1.

4.1.1 Shallow Zone Injection Wells

Two existing wells (MW-12 and MW-13) and seven injection wells (IW-1 through IW-7) were used to introduce Fenton's reagent into the primary zone of contamination, the upper 20 feet of the saturated zone east of the loading dock. Well MW-12 is screened from 46.5 to 56.5 feet below grade, well MW-13 is screened from 48 to 58 feet below grade, and injection wells IW-1 through IW-7 are screened from 45 to 60 feet below grade. The locations of the nine wells used during the pilot test to inject into the shallow zone are shown on Figure 1.

4.1.2 Deep Zone Injection Wells

One existing well (MW-13D) and five injection wells (IW-8 through IW-12) were used to introduce Fenton's reagent into the deep zone of contamination. Well MW-13D is screened from 80 to 90 feet below grade and injection wells IW-8 through IW-12 are screened from 75 to 90 feet below grade.

The locations of the six wells used during the pilot test to inject into the deep zone are shown on Figure 1.

4.1.3 Observation Wells

Eleven monitoring wells were used as shallow zone observation wells during the pilot test. Wells MW-7, MW-8, MW-9, MW-10, and MW-11 served as downgradient observation wells and wells MW-2, MW-3, MW-4, MW-14, MW-15, and MW-17 served as perimeter observation wells. The shallow zone observation wells are screened from a minimum of 40 feet to a maximum of 60 feet below grade. Six monitoring wells (MW-16D, MW-18D, MW-19D, MW-20D, MW-21D, and MW-23) were used as deep zone observation wells during the pilot test. With the exception of well MW-21D, the deep zone observation wells are screened from a minimum of 70 feet to a maximum of 185 feet below grade. Well MW-21D, which is screened from 50 to 160 feet below grade, monitors both the shallow and deep zones.

4.2 Groundwater Sampling

A groundwater sampling event was performed from March 30 - April 1, 1998 to establish baseline VOC concentrations and groundwater chemistry prior to conducting the pilot test (July 9 - 12, 1998). After completing the pilot test, three post-injection groundwater sampling events were conducted to evaluate the effectiveness of the pilot test. The post-injection sampling was performed three days (July 15th), one week (July 20th), and three weeks (August 3 - 4, 1998) after the final injection.

For the baseline (March/April) and final post-injection (August) sampling events, a minimum of three well volumes were purged from each well. Efforts were made to sample only after turbidity values were less than 50 NTUs. Dedicated disposable bailers were used to obtain the groundwater samples directly from the wells. For the sample collected from monitoring well MW-11 on July 20th in which the turbidity value was greater than 50 NTUs, the sample for metals analyses was collected in a dedicated container and allowed to settle for a two to three hour period, after which time a sample aliquot was decanted. For the July 15th and 20th post-injection sampling events, the wells were not purged prior to sampling to limit the removal of residual Fenton's reagent which was still reacting with

the VOCs present in groundwater. As requested by the NYSDEC, Category B Deliverables are provided for samples collected from wells IW-3, MW-8, and MW-23. Details of the four groundwater sampling events are provided below and summarized in Table 2.

4.2.1 Baseline Groundwater Sampling

The baseline groundwater sampling event performed from March 30 - April 1, 1998 consisted of the following wells and sample analyses:

All 32 wells:

- Volatile organic compounds (VOCs) plus tentatively identified compounds (TICs) by USEPA Method 8260;
- Aquifer chemistry laboratory parameters (sulfate, alkalinity, chlorides, ferrous iron, ferric iron, total iron, total dissolved solids, total organic carbon, biochemical oxygen demand, and chemical oxygen demand);
- Aquifer chemistry field parameters (pH, conductivity, turbidity, dissolved oxygen, temperature, and oxidation-reduction potential); and
- General petroleum degraders (Total Viable and Non-Viable Organisms, Total Viable Organisms, Fluorescent Pseudomonades, Phenanthrene Degraders).

Shallow Injection Wells (IW-1 through IW-7, MW-12 and MW-13) and Deep Injection Wells (IW-8 through IW-12 and MW-13D):

- Cyanide.

Wells IW-3, MW-7, MW-8, MW-10, MW-11, MW-18D, MW-19D, MW-20D, and MW-23:

- 8 RCRA metals plus manganese.

4.2.2 Intermediate Post-Injection Groundwater Sampling

The two intermediate post-injection groundwater sampling events performed on July 15 and 20, 1998 consisted of the following wells and sample analyses:

All 32 wells:

- VOCs plus TICs by USEPA Method 8260; and
- Aquifer chemistry field parameters.

Wells IW-3, IW-11, MW-7, MW-8, MW-10, MW-11, MW-18D, MW-19D, MW-20D, and MW-23:

- Aquifer chemistry laboratory parameters.

4.2.3 Final Post-Injection Groundwater Sampling

The final post-injection groundwater sampling event performed from August 3 - 4, 1998 consisted of the following wells and sample analyses:

All 32 wells:

- VOCs plus TICs by USEPA Method 8260;
- Aquifer chemistry laboratory parameters; and
- Aquifer chemistry field parameters.

Wells IW-3, MW-7, MW-8, MW-10, MW-11, MW-18D, MW-19D, MW-20D, and MW-23:

- 8 RCRA metals plus manganese.

4.3 Injection of Water and Fenton's Reagent

During the pilot test, water and Fenton's reagent were injected by gravity drainage into the nine shallow and six deep injection wells from two temporary 6,500 gallon polyethylene storage tanks. The storage tanks were connected to the injection wells using flexible hose, PVC manifolds, and clear vinyl tubing. Each well was equipped with a totalizing flowmeter and ball valve to control the injection rate. Flexible tubing was extended down the injection wells to below the static water level to enable accurate water level measurements and to minimize aeration of the injected solution.

The pilot test was conducted in three phases which consisted of injection of the following: water into the shallow zone (Phase I), Fenton's reagent into the shallow zone (Phase II), and Fenton's reagent into the shallow and deep zones (Phase III). The three phases of the pilot test are summarized on Table 3 and discussed in the following sections.

4.3.1 Phase I - Water Injection (Shallow Zone)

The first phase of the pilot test was performed on July 9, 1998 by injecting approximately 9,302 gallons of potable water acidified with laboratory grade sulfuric acid (H_2SO_4) into the nine shallow injection wells. Phase I was performed to determine appropriate injection rates for subsequent phases and the extent of mounding. The water was injected into the nine shallow injection wells in approximately 9 hours at rates of approximately 2 to 3 gallons per minute (gpm) per well (18 to 27 gpm total). The water level rise in the injection wells as a results of injecting at rates of 2 to 3 gpm was approximately 0.5 to 1 feet. As shown on Table 3, the amount of water injected into the wells during Phase I ranged from 873 gallons into IW-1 to 1,197 gallons into MW-12. Given the injection wells accepted injection rates of 3 gpm with only minimal mounding in the injection wells, it was apparent that Fenton's reagent could be injected at similar rates with only minimal mounding.

4.3.2 Phase II - Fenton's Reagent Injection (Shallow Zone)

The second phase of the pilot test was performed on July 10, 1998 by injecting 8,867 gallons of 3% hydrogen peroxide and 92 gallons of ferrous sulfate solution into the nine shallow injection wells. The tanker trucks used to deliver the hydrogen peroxide to the site are dedicated by the manufacturer for transporting only hydrogen peroxide. A certificate of analysis was provided by the supplier with each tanker truck delivery of hydrogen peroxide. Copies of the certificates are provided in Appendix A. Additionally, a sample of hydrogen peroxide was collected from the first tanker truck delivery and was submitted to H2M Labs, Inc. for VOC analysis. The hydrogen peroxide sample contained no detectable concentrations of targeted VOCs, although one tentatively identified compound (2-methoxy-2-methyl-propane) was detected at an estimated concentration of 10 ug/l.

The 8,959 gallons of Fenton's reagent was injected into the nine shallow injection wells in approximately 4.5 hours at rates of approximately 3 to 5 gallons per minute (gpm) per well (27 to 45 gpm total). The water level rise in the injection wells as a result of injecting at rates of 3 to 5 gpm was approximately 2 to 4 feet. As shown on Table 3, the amount of Fenton's reagent injected into the wells during Phase II ranged from 562 gallons into IW-1 to 1,116 gallons into IW-3.

4.3.3 Phase III - Fenton's Reagent Injection (Shallow and Deep Zones)

The third phase of injection was performed on July 11 and 12, 1998 by injecting 11,708 gallons of Fenton's reagent into the nine shallow injection wells and 6,504 gallons of Fenton's reagent into the six deep injection wells over a two day period.

Shallow Zone Injection

The 11,708 gallons of Fenton's reagent injected into the nine shallow wells during Phase III was composed of 11,481 gallons of 3% hydrogen peroxide and 228 gallons of ferrous sulfate solution. The 11,708 gallons of Fenton's reagent was injected in approximately 5 hours on July 11th and 4 hours on July 12th at rates of approximately 2 to 4 gpm per well (18 to 36 gpm total). The water level rise in the injection wells as a result of injecting at rates of 2 to 4 gpm was approximately 1 to 3 feet. As shown on Table 3, the amount of Fenton's reagent injected into the shallow wells during Phase III ranged from 1,121 gallons into IW-2 to 1,388 gallons into IW-4.

Deep Zone Injection

The 6,504 gallons of Fenton's reagent injected into the six deep wells during Phase III was composed of 6,473 gallons of 3% hydrogen peroxide and 31 gallons of ferrous sulfate solution. The 6,504 gallons of Fenton's reagent was injected into the six deep injection wells in 5 hours on July 11th and 4 hours on July 12th at rates of approximately 2 to 3 gallons per minute (gpm) per well (18 to 27 gpm total). The water level rise in the injection wells as a result of injecting at rates of 2 to 3 gpm was approximately 2 to 10 feet. As shown on Table 3, the amount of Fenton's reagent injected into the deep wells during Phase III ranged from 898 gallons into IW-9 to 1,246 gallons into IW-12.

4.3.4 Summary of Pilot Test Injections

Table 3 provides a summary of the amount of water and Fenton's reagent injected during the pilot test. A total of approximately 9,302 gallons of water and 20,667 gallons of Fenton's reagent were injected into the nine shallow injection wells during the pilot test. Additionally, approximately 6,504 gallons of Fenton's reagent were injected into the six deep injection wells during the pilot test. The quantity of water and Fenton's reagent injected during the pilot test was consistent with the approved work plan.

However, the amount of ferrous sulfate used to mix the Fenton's reagent was increased from approximately 31 pounds to 167 pounds. This work scope modification was pre-approved by the NYSDEC.

4.4 Groundwater and Air Quality Monitoring

Groundwater quality monitoring was performed during the pilot test using field instruments to determine the zone of influence associated with the injection of water and Fenton's reagent. The groundwater monitoring was performed at the eleven shallow and six deep observation wells prior to, during, and immediately following the injections, and included depth to water, pH, conductivity, turbidity, dissolved oxygen, temperature, oxidation-reduction potential, and hydrogen peroxide. Groundwater samples were collected from the observation wells using dedicated bailers several times per day during the injection phase of the pilot test. The primary parameters which would be indicative of influence associated with the injection of Fenton's reagent include water level rise, decreased pH, increased dissolved oxygen, and detection of hydrogen peroxide at parts per million (ppm) concentrations.

Since the reaction of Fenton's reagent also releases gases, air quality monitoring was performed during the pilot test using field instruments. Air monitoring was performed for VOCs using a photoionization detector (PID), for explosive vapors and oxygen using an LEL/ O_2 meter, and for carbon monoxide (CO), carbon dioxide (CO_2), hydrogen sulfide (H_2S), chlorine (Cl_2), and hydrogen cyanide (HCN) using single or multi-gas monitors calibrated in accordance with manufacturers recommendations. Air monitoring was performed during the injection phase of the pilot test on a near continuous basis by alternating between outdoor and indoor monitoring stations and recording instrument readings.

Indoor air monitoring was performed inside the eastern portion of the building adjacent to the pilot test area to ensure that unacceptable concentrations of gases did not infiltrate or collect within the adjacent office building as a result of the pilot test activities. At the time the pilot test was conducted (July 9 - 12, 1998), the eastern portion of the building was undergoing renovation which included activities such as dry wall spackling and painting. Outdoor air monitoring was performed to ensure worker safety in accordance with the Health and Safety Plan prepared for the pilot test. Air monitoring was also

performed within injection and observation wells approximately one foot below grade to monitor off gases resulting from the reaction of Fenton's reagent with the contaminants in groundwater.

The Suffolk County Department of Health Services (SCDHS) also performed air monitoring within the adjacent office building and at several injection wells prior to, during, and following the pilot test injections.

5.0 PILOT TEST RESULTS

The pilot test was performed to determine the effectiveness of using *in-situ* chemical oxidation to remediate the dissolved and adsorbed phase VOCs present at the site. The results of groundwater monitoring performed prior to, during, and after the shallow and deep zone injections as well as air monitoring performed during the injections are presented in this section.

5.1 Shallow Zone Injection

During the pilot test approximately 9,302 gallons of water and 20,667 gallons of Fenton's reagent (hydrogen peroxide and ferrous sulfate solution) were injected into nine shallow injection wells. Baseline groundwater quality data, pilot test field parameter data, and post-injection groundwater quality data were collected from the nine shallow injection wells and from eleven nearby shallow monitoring wells. An analysis of the data and a discussion of the results are provided below.

5.1.1 Data Analysis (Shallow Zone)

Pilot Test Field Parameters

Prior to, during and immediately following the pilot test injections, field parameters (depth to water, pH, conductivity, turbidity, dissolved oxygen, temperature, oxidation-reduction potential, and hydrogen peroxide concentration) were measured in the eleven shallow observation wells. The pilot test field parameter data is provided in Appendix B. The pre-injection depth to water was approximately 45 feet below ground surface, the pH ranged from 5.66 to 6.18, and the dissolved oxygen concentration ranged from 0.95 to 6.34 milligrams per liter (mg/L). The data collected during and immediately following the injections remained unchanged from the pre-injection data with the following exceptions:

- the dissolved oxygen concentration increased from 1.63 to 9.92 mg/L in MW-7;
- the dissolved oxygen concentration increased from 2.74 to 8.12 mg/L and the pH decreased from 5.90 to 5.58 in MW-8;

- the dissolved oxygen concentration increased from 1.67 to 3.70 mg/L and the pH decreased from 6.07 to 4.00 in MW-9;

- the dissolved oxygen concentration increased from 0.95 to 3.23 mg/L in MW-10;

- the dissolved oxygen concentration increased from 5.08 to 10.81 mg/L in MW-11; and

- the dissolved oxygen concentration increased from 3.99 to greater than 20 mg/L and hydrogen peroxide was detected during and after the pilot test at concentrations ranging from 0.2 to 6 mg/L in MW-17.

Based on the field parameters monitored during the injections, downgradient observation wells MW-7, MW-8, MW-9, MW-10, and MW-11 and perimeter observation well MW-17 showed a response to the injection of Fenton's reagent.

Groundwater Sampling Event Field Parameters

During the baseline and final post-injection groundwater sampling events, field parameters (depth to water, temperature, pH, conductivity, dissolved oxygen, and oxidation-reduction potential) were measured in the nine shallow injection wells and eleven shallow observation wells. The pH and dissolved oxygen results from the groundwater sampling events is summarized in Table 4. The following appreciable changes were observed in the pH and dissolved oxygen concentration in the observation wells from the pre-injection to the post-injection events:

- the pH decreased from 6.14 to 5.34 in MW-7;

- the pH decreased from 6.10 to 5.08 in MW-9;

- the pH decreased from 5.92 to 5.44 in MW-10;

- the pH decreased from 6.18 to 5.35 and the dissolved oxygen concentration increased from 3.2 to 6.0 mg/L in MW-11; and

- the pH decreased from 6.04 to 5.74 and the dissolved oxygen concentration increased from 3.4 to 5.3 mg/L in MW-17.

These changes, while minor, are consistent with the field parameter data collected during and immediately following the pilot test. While changes were observed in the downgradient observation wells and perimeter observation well MW-17, no appreciable changes in field parameters were observed in perimeter observation wells MW-2, MW-3, MW-4, MW-14, and MW-15.

In the shallow injection wells the pH ranged from 5.57 (IW-3) to 6.34 (IW-1) prior to the test, from 2.1 (IW-1, IW-3, and IW-4) to 2.3 (IW-2, IW-5, and MW-13) immediately after the test, and from 3.22 (IW-1) to 5.00 (IW-7) three weeks after the test. Therefore, in just three weeks the pH has partially returned to the pre-injection levels. Dissolved oxygen concentrations ranged from 1.5 (MW-12) to 4.7 mg/L (IW-2) prior to the test. The dissolved oxygen concentrations were greater than 20 mg/L in all the injection wells immediately after the test and ranged from 6.6 (IW-7) to greater than 20 mg/L (IW-1, IW-2, IW-5, and MW-12) three weeks after the test. These elevated dissolved oxygen levels three weeks after the test will help to continue the oxidation process.

Groundwater Sampling Event Chemistry Data

In order to determine the areal extent of influence and monitor the geochemical effects of injection, a significant amount of aquifer chemistry data was collected from the injection and observation wells at the site. During the baseline and final post-injection groundwater sampling events, groundwater samples from the nine shallow injection wells and eleven shallow observation wells were analyzed for aquifer chemistry parameters (sulfate, alkalinity, chloride, ferrous iron, ferric iron, total iron, TDS, TOC, BOD, and COD). Groundwater samples from IW-3, MW-7, MW-8, MW-10, and MW-11 were analyzed for RCRA metals (plus manganese). During the two intermediate post-injection sampling events, shallow injection well IW-3 and shallow observation wells MW-7, MW-8, MW-10, and MW-11 were analyzed for aquifer chemistry parameters. The groundwater sampling event chemistry data is summarized in Table 4. The following trends were observed in these parameters in the observation wells:

- ferrous iron concentrations increased in MW-7, MW-8, MW-9, and MW-10;
- total iron concentrations increased in MW-3, MW-7, MW-8, MW-9, MW-10, and MW-15;
- sulfate concentrations increased in downgradient observation wells MW-7, MW-8, MW-9,

MW-10, and MW-11 to a maximum concentration during the final post-injection sampling event of 130 mg/L;

- sulfate concentrations increased in perimeter observation wells MW-2, MW-3, MW-4, MW-14, MW-15, and MW-17 to a maximum concentration during the final post-injection sampling event of 45 mg/L; and

- no significant changes in concentrations of RCRA metals were observed, with the exception of an increase in the manganese concentration from 157 ug/L to 1,960 ug/L in MW-8.

The injection of Fenton's reagent resulted in increased iron and sulfate concentrations in the injection wells. Consistent with the field parameter data, changes in aquifer chemistry parameters, specifically iron and sulfate, were observed in the downgradient observation wells, and to a lesser extent, in the perimeter observation wells. The analytical data suggest that the pilot test system was able to deliver the reagents to a large portion of the pilot study area. However, more importantly, the aquifer chemistry data indicate that the pilot test injections did not adversely alter the aquifer chemistry.

Groundwater Sampling Event VOC Data

Groundwater samples collected from the shallow injection and observation wells during the baseline and three post-injection sampling events were analyzed for VOCs plus tentatively identified compounds. Historically, the primary VOCs of concern at the site have been 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethene (1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA), trichloroethene (TCE), and tetrachloroethene (PCE). The historical groundwater sample results for these five VOCs are summarized in Table 5 and presented as bar graphs in Appendix C. A comparison of the pre- and post-injection results for the five primary VOCs is provided in Table 6. The results of the VOCs detected other than the five primary compounds are summarized in Table 7. The following observations were made for the five primary VOCs in the shallow wells:

Six Shallow Perimeter Observation Wells

- the total concentration ranged from 70 to 598 ug/l in April 1997, from 22 to 239 ug/l in April 1998, and from 18 to 207 ug/l in August 1998;

- the average total concentration was 209 ug/l in April 1997, 104 ug/l in April 1998, and 114 ug/l in August 1998;

- the above data indicate the pilot test injections had no significant affect on the six shallow perimeter observation wells.

Five Shallow Downgradient Observation Wells

- the total concentration ranged from 1,379 to 23,260 ug/l in April 1997, from 676 to 7,572 ug/l in April 1998, and from 350 to 4,280 ug/l in August 1998;

- the average total concentration was 11,855 ug/l in April 1997, 3,051 ug/l in April 1998, and 1,673 ug/l in August 1998;

- as shown on Table 5, 1,2-DCE (a breakdown product of PCE and TCE) typically represented less than 10% of the total concentration of the five primary VOCs prior to the pilot test, but represented in excess of 50% of the total in downgradient observation wells MW-7, MW-8, and MW-9 after the pilot test injections;

- the above data indicate the pilot test injections had a positive affect on the five shallow downgradient observation wells as total concentrations in these five wells decreased by an average of 1,378 ug/l (45%) from April to August 1998.

Nine Shallow Injection Wells

- the total concentration ranged from 313 to 50,258 ug/l in April 1998 and from 212 to 12,224 ug/l in August 1998;

- the average total concentration was 12,802 ug/l in April 1998 and 2,024 ug/l in August 1998;

- the above data indicates the pilot test injections had a positive affect on the nine shallow injection wells as total concentrations in these nine wells decreased by an average of 10,777 ug/l (84%) from April to August 1998.

Review of the data suggests that there is a significant decrease in concentrations in the majority of the shallow observation wells between April 1997 and the pre-injection baseline sampling in April 1998. Although the cause for this decrease is unknown, it represents a favorable trend towards the overall remediation of the site. However, as discussed in the following section, the decrease in the estimated contaminant mass between April 1997 and April 1998 (22 pounds over a period of 1 year) is comparable to the decrease between April 1998 and August 1998 (39 pounds over a period of 3 months), although the rate of decline was greater from April to August 1998.

As shown on Table 7, VOCs other than the five primary chlorinated VOCs were only detected sporadically and at relatively low concentrations. The exception to this is acetone, which was detected in the baseline and post-injection sampling events in several of the shallow injection wells. However, the concentrations declined in the final post-injection sampling event. The presence of acetone may be attributable to the degradation of xylene or a laboratory contaminant. Given xylene concentrations are not persistent at the site and the presence of acetone is a temporary by-product of the degradation of xylene, the presence of acetone is not considered to be a significant concern at the site.

5.1.2 Discussion of Results (Shallow Zone)

The field parameter and groundwater chemistry data from prior to, during and up to three weeks after the pilot test injections showed significant changes in pH, dissolved oxygen concentration, sulfate concentration and ferrous and total iron concentrations in the injection wells and the downgradient observation wells and little or no changes in the perimeter observation wells. Based on the observed changes, the pilot test area of influence in the shallow zone is shown on Figure 2. The zone of influence is consistent with the VOC concentration results, which showed reductions in the injection and downgradient observation wells within the zone of influence and little or no change in concentrations in the perimeter observation wells outside the zone.

Using the area of influence shown in Figure 2 (16,400 square feet), an influenced thickness in the shallow zone of 20 feet (from 45 to 65 feet below ground surface), and a formation porosity of 0.3 (30%), approximately 736,000 gallons of groundwater were in the zone of influence. Consequently, the pilot test injection influenced a relatively large volume of impacted groundwater. Additionally, the 29,500 gallons of liquid injected during the pilot test represents 3% of the total quantity (736,000 gallons) within the zone of influence. Therefore, the effects of 3% dilution would be insignificant and the reductions in VOC concentrations in the area of influence can be attributed primarily to the chemical oxidation process.

The total concentration of the five primary chlorinated VOCs were used to prepare isoconcentration contour maps for the shallow zone for the April 1997, the baseline (March/April 1998) and the final post-injection (August 1998) groundwater sampling events, Figures 3, 4, and 5, respectively. For the

April 1997 sampling event, the concentrations detected in April 1998 in newly installed injection wells IW-1 (43,987 ug/l) and IW-3 (50,258 ug/l) were used for contouring purposes. Since the concentrations in the majority of the wells were significantly higher in 1997 than in 1998, it is conservative to assume that the concentrations at IW-1 and IW-3 would have been as high (if not higher) in 1997 as they were in 1998.

A comparison of these figures indicates that the area within the 1,000 ug/l contour decreased from 11,489 ft^2 in April 1997 to 8,480 ft^2 in April 1998 to 3,800 ft^2 in August 1998. At the same time the average concentration between the 1,000 and 10,000 ug/L contour increased from 2,912 ug/l in April 1997 to 3,865 ug/l in April 1998 and then decreased to 2,129 ug/l in August 1998. Similarly, the area within the 10,000 ug/l contour decreased from 3,565 ft^2 in April 1997 to 1,168 ft^2 in April 1998 to 335 ft^2 in August 1998. At the same time the average concentration within the 10,000 ug/l contour increased from 27,551 ug/l in April 1997 to 47,123 ug/l in April 1998 and then decreased to 12,224 ug/l in August 1998. The reductions in both areal extent and concentration indicate the pilot test caused a significant reduction in the mass of VOCs in the shallow zone.

The mass of VOCs dissolved in groundwater within the 100, 1,000 and 10,000 ug/L contours was calculated using the area and average concentration within each interval. Although the estimate is limited to the site property and the 100 ug/l contour extends off-site for the April 1997 sampling event, the mass within the 100 ug/l contour is minimal as compared to the mass within the 1,000 and 10,000 ug/l contours. A thickness of 20 feet and a formation porosity of 0.3 were also used in calculating the dissolved mass of total VOCs in the shallow zone. The adsorbed mass was calculated from the dissolved mass using a distribution coefficient estimated from site hydrogeological and contaminant data. The contaminant mass calculations and assumptions are provided in Appendix D. The mass distribution of VOCs (65% dissolved and 35% adsorbed) is based on an estimated retardation factor of 1.5 (see Appendix D). These calculations indicate the total mass in the shallow zone (45 to 65 feet) within the 100 ug/L contour decreased from approximately 73 pounds in April 1997 to 51 pounds in April 1998 (a 30% reduction) and from 51 pounds in April 1998 to 12 pounds in August 1998 (a 77% reduction). Given the pilot test focused on the source area, the greatest mass reduction was observed in the area within the 10,000 ug/L contour. The calculations indicate the mass within the 10,000 ug/L contour decreased from 32 pounds to 2 pounds between April and August. Similarly, but to a lesser

extent, the mass within the 1,000 ug/L contour decreased from 16 pounds to 4 pounds.

In summary, the chemical oxidation pilot test influenced an area around and immediately down-gradient of the injection wells, but had little or no impact on the perimeter wells. Within this area of influence, the VOC concentrations decreased significantly and, correspondingly, the mass of VOCs in the dissolved and adsorbed phases was estimated to decrease dramatically. Three weeks after the test, the pH was returning to baseline levels, dissolved oxygen concentrations were still elevated, and other parameters appeared unchanged.

5.2 Deep Zone Injection

During Phase III of the pilot test approximately 6,504 gallons of Fenton's reagent were injected into six deep injection wells. Baseline groundwater quality data, pilot test field data, and post-injection groundwater quality data were collected from the six deep injection wells and from six nearby deep monitoring wells. An analysis of the data and a discussion of the results are provided below.

5.2.1 Data Analysis (Deep Zone)

Pilot Test Field Parameters

Prior to, during, and immediately following the pilot test injections, field parameters (depth to water, pH, conductivity, turbidity, dissolved oxygen, temperature, oxidation-reduction potential, and hydrogen peroxide concentration) were measured in six deep observation wells. The pilot test field parameter data is provided in Appendix B. The pre-injection depth to water was approximately 45 feet below ground surface, the pH ranged from 5.93 to 6.13, and the dissolved oxygen concentration ranged from 1.27 to 5.56 mg/L. The data collected during and immediately following the injections remained unchanged from the pre-injection data with the following exceptions:

- the dissolved oxygen concentration increased from 1.27 to greater than 20 mg/L and hydrogen peroxide was detected at concentrations ranging from 0.1 to 50 mg/L in MW-21D; and

- the dissolved oxygen concentration increased from 1.92 to greater than 20 mg/L in MW-23.

Based on the field parameters monitored during the injections, deep observation wells MW-21D and MW-23 showed a response to the injection of Fenton's reagent. Changes were not anticipated in observation wells MW-18D, MW-19D, and MW-20D because the screened intervals in these wells are significantly deeper than the screened interval of the deep injection wells (Table 1). However, it should be noted that some of the influence observed in MW-21D, which is screened from 50 to 160 feet, is attributed to the shallow zone injections, since increased dissolved oxygen and hydrogen peroxide concentrations were observed after the Phase II injection into the shallow zone, but before the Phase III injection into the deep zone.

Groundwater Sampling Event Field Parameters

During the baseline and final post-injection groundwater sampling events, field parameters (depth to water, pH, conductivity, turbidity, dissolved oxygen, temperature, oxidation-reduction potential, and hydrogen peroxide concentration) were measured in six deep injection wells and six deep observation wells. The pH and dissolved oxygen results from the groundwater sampling events is summarized in Table 4. The following appreciable changes were observed in the pH and dissolved oxygen concentration in the observation wells from the pre-injection to the post-injection events:

- the pH decreased from 6.00 to 5.69 and the dissolved oxygen concentration increased from 3.7 to 6.9 mg/L in MW-21D; and

- the pH decreased from 5.68 to 5.14 and the dissolved oxygen concentration increased from 3.5 to 19.1 mg/L in MW-23.

These changes are consistent with the field parameter data collected during and immediately following the pilot test. No appreciable changes in field parameters were observed in deep observation wells MW-16D, MW-18D, MW-19D, MW-20D.

In the deep injection wells the pH ranged from 5.49 (IW-11) to 6.38 (IW-8) prior to the test, from 2.20 (IW-9) to 2.90 (IW-12, and MW-13D) immediately after the test, and from 2.63 (IW-10) to 3.18 (IW-8) three weeks after the test. Therefore, in just three weeks the pH has started to return to the pre-injection levels. Therefore, the pilot test injections did not adversely alter the pH of the aquifer. Dissolved oxygen concentrations ranged from 2.6 (IW-8) to 5.2 mg/L (IW-12 and MW-13D) prior to

the test. The dissolved oxygen concentrations were greater than 20 mg/L in all the injection wells immediately after and three weeks after the test.

Groundwater Sampling Event Chemistry Data

During the baseline and final post-injection groundwater sampling events, groundwater samples from the six deep injection wells and six deep observation wells were analyzed for aquifer chemistry parameters (sulfate, alkalinity, chloride, ferrous iron, ferric iron, total iron, TDS, TOC, BOD, and COD). Groundwater samples from MW-18D, MW-19D, MW-20D, and MW-23 were analyzed for RCRA metals (plus manganese). During the two intermediate post-injection sampling events, deep injection well IW-11 and deep observation wells MW-18D, MW-19D, MW-20D, and MW-23 were analyzed for aquifer chemistry parameters. The groundwater sampling event chemistry data is summarized in Table 4. The following trends were observed in these parameters in the observation wells:

- ferrous, ferric, total iron and sulfate concentrations increased in MW-21D.

The injection of Fenton's reagent resulted in the increase in iron and sulfate concentrations in the deep injection wells and deep observation well MW-21D. Consistent with the field parameter data, no appreciable changes in aquifer chemistry parameters were observed in deep observation wells MW-16D, MW-18D, MW-19D, MW-20D, and MW-23. Considering the screen interval of 50 to 160 feet in MW-21D and the proximity of the well to the shallow injection wells, the increase in iron and sulfate concentrations in this well may be attributed to the shallow zone injections.

Groundwater Sampling Event VOC Data

Groundwater samples collected from the deep injection and observation wells during the baseline and three post-injection sampling events were analyzed for VOCs plus tentatively identified compounds. As with the shallow zone, only the five primary chlorinated VOCs of concern (1,1-DCA, 1,2-DCE, 1,1,1-TCA, TCE, and PCE) were evaluated as a part of the pilot test. The groundwater sample results for these five VOCs are summarized in Table 5 and presented as bar graphs in Appendix C. A comparison of the pre- and post-injection results for the five primary VOCs is provided in Table 6. The results of the VOCs detected other than the five primary compounds are summarized in Table 7. The following

observations were made for the five primary VOCs in the deep wells:

Six Deep Observation Wells

- the total concentration ranged from 37 to 4,205 ug/l in April 1997, from 42 to 3,010 ug/l in April 1998, and from 33 to 5,243 ug/l in August 1998;

- the average concentration was 1,140 ug/l in April 1997, 1,492 ug/l in April 1998, and 2,266 ug/l in August 1998;

- the above data indicates the pilot test injections had a slight negative affect on the six deep observation wells as concentrations in six wells increased by an average of 774 ug/l (52%) between April and August 1998; however, it should be noted that the largest increase in VOC concentrations were observed in observation wells MW-19D, MW-21D, and MW-23 and based on the screen interval, location of wells, and that no purging was performed during the two July 1998 sampling events and the high purge rates in August 1998, it is plausible that the sample collected from MW-21D was more representative of shallow groundwater.

Six Deep Injection Wells

- the total concentration ranged from 119 to 5,211 ug/l in April 1998 and from 30 to 6,118 ug/l in August 1998;

- the average concentration was 1,810 ug/l in April 1998 and 1,274 ug/l in August 1998;

- the above data indicates the pilot test injections had a positive affect on the six shallow injection wells as concentrations in these nine wells decreased by an average of 536 ug/l (30%) between April and August 1998.

5.2.2 Discussion of Results (Deep Zone)

The field parameter and groundwater chemistry data from prior to, during and up to three weeks after the pilot test showed significant changes in pH, dissolved oxygen concentration, sulfate concentration and ferrous and total iron concentrations in the injection wells, but little or no changes in the observation wells, with the exception of MW-19D and MW-23. Based on the observed changes, the pilot test area of influence in the deep zone is shown on Figure 5. The deep monitoring wells beyond this area of influence had insignificant or no changes in field parameter or groundwater chemistry data.

The zone of influence is consistent with the VOC concentration results, which showed significant reductions in concentration were limited to the injection wells and little or no change in concentrations in the wells outside the zone. These results, indicating a limited extent of influence, can be attributed to the following:

- only 6,504 gallons (or 24% of the total quantity) of Fenton's reagent were injected into the deep wells, which was planned due to the need to focus in the shallow zone containing significantly higher VOC concentrations;

- the screened intervals in deep monitoring well MW-18D, MW-19D, and MW-20D are significantly deeper than the deep injection wells where the Fenton's reagent was injected; and

- monitoring well MW-16D, while screened at a comparable interval to the deep injection wells, is located too far from the injection wells to be influenced, especially given the limited volume injected.

Using the area of influence shown in Figure 6 (5,790 square feet), an influenced thickness in the deep zone of 20 feet (from 75 to 95 feet below ground surface), and a formation porosity of 0.3, approximately 260,000 gallons of groundwater were in the zone of influence. Similar to the shallow zone, the 6,504 gallons of liquid injected during the pilot test represents 2.5% of the 260,000 gallons within the zone of influence. Therefore, the effects of 2.5% dilution would be insignificant and the reductions in VOC concentrations in the area of influence can be attributed primarily to the chemical oxidation process.

The total concentration of the five primary chlorinated VOCs were used to prepare isoconcentration contour maps for the deep zone for the baseline (March/April 1998) and the final post-injection (August 1998) groundwater sampling events, Figures 7 and 8, respectively. An isoconcentration contour map was not prepared for the deep zone for the April 1997 groundwater sampling event given the limited number of wells (five), the differences in screened intervals, and their linear alignment. A comparison of the Figures 7 and 8 indicates that from April to August the area within the 100 ug/L contour decreased from 9,967 ft^2 to 6,303 ft^2 and the average concentration between the 100 and 1,000 ug/L contour increased slightly from 432 ug/l to 437 ug/l. Similarly, from April to August the area within the 1,000 ug/L contour decreased from 4,788 ft^2 to 2,455 ft^2 and the average concentration within the

1,000 ug/L contour increased from 2,946 ug/l to 5,328 ug/l. Although the average concentration within the 1,000 ug/L contour increased, the mass of VOCs was reduced slightly due to the reduction in areal extent.

The mass of VOCs dissolved in groundwater within the 100 and 1,000 ug/L contours was calculated using the area and average concentration within each interval. A thickness of 20 feet and a formation porosity of 0.3 were also used in calculating the dissolved mass of total VOCs in the deep zone. The adsorbed mass was calculated from the dissolved mass using a distribution coefficient determined from site hydrogeological and contaminant data. The contaminant mass calculations and assumptions are provided in Appendix D. The mass distribution of VOCs (65% dissolved and 35% adsorbed) is based on a retardation factor of 1.5 (see Appendix D). These calculations indicate the total mass in the deep zone (75 to 95 feet) within the 100 ug/L contour decreased slightly from approximately 9.4 pounds in April to 8.5 pounds in August, a 10% reduction.

In summary, the chemical oxidation pilot test influenced an area around and immediately downgradient of the injection wells, but had little or no impact on the deep observation wells. Within this area of influence, the areal extent of VOCs decreased and, correspondingly, the mass of VOCs in the dissolved and adsorbed phases was estimated to decrease. Three weeks after the test, the pH was returning to baseline levels, dissolved oxygen concentrations were still elevated, and other parameters appeared relatively unchanged.

5.3 Air Monitoring Results

Air monitoring was performed in the following three areas during the pilot test: inside the building, outside the building in the work area, and within select injection and observation wells. The results of the air monitoring are provided in Appendix E. A discussion of the results for each area is provided below.

5.3.1 Indoor Air Monitoring

The indoor air monitoring results indicate that no elevated concentrations of gases were detected inside

the building which could be attributed to the pilot test injections. Readings of LEL, CO, H_2S, and HCN were not detected and oxygen concentrations remained at 20.9% for the duration of the pilot test. The only gases detected indoors during the pilot test (except for O_2) were occasional low levels of VOCs, CO_2, and Cl_2. The detected VOC readings, which ranged from 1 to 10 parts per million by volume (ppmv), were determined to be caused by the renovation activities (spackling, painting) being conducted in the building. The highest detected CO_2 concentrations, which ranged from 0.05 to 0.15%, were detected inside the building on July 8th, one day before the pilot test injections were started. The detected Cl_2 concentrations, which ranged from 0.02 to 0.24 ppmv, were detected periodically throughout the monitoring, including prior to the start of injections. The New York State Department of Health (NYSDOH) representative observing the pilot test activities believed the low concentrations of Cl_2 could be attributed to either background concentrations or problems associated with instrument sensitivity.

5.3.2 Outdoor Air Monitoring

The outdoor air monitoring results were similar to the indoor results, with only low levels of certain gases detected. Readings of LEL and CO were not detected and oxygen concentrations remained at 20.9%. Although low concentrations of VOCs, CO_2, H_2S, Cl_2, and HCN were detected, the readings were below their respective outdoor action levels. The highest concentrations detected outdoors were as follows: 1 ppmv VOCs , 0.05% CO_2, 1 ppmv H_2S, 0.36 ppmv Cl_2, and 1 ppmv HCN.

5.3.3 Injection and Observation Well Air Monitoring

The concentrations of all gases monitored during the pilot test, except for Cl_2, were higher inside the injection and observation wells during active injection as compared to the indoor and outdoor ambient readings. The highest readings of VOCs (190 ppmv), LEL (3%), and HCN (80 ppmv) were detected in shallow injection well IW-1 while injecting Fenton's reagent during Phase II. Both O_2 and CO were detected above the instrument operating ranges (30% for O_2 and 300 ppmv for CO) in several of the injection wells during injection of Fenton's reagent. The highest CO_2 (3.4%) and lowest O_2 (15.9%) readings were detected in shallow injection well IW-5 after the injection of the acidified water during Phase I. Concentrations of H_2S were not detected, with the exception of two readings (1 and 2.8

ppmv) from shallow injection well IW-6. Concentrations of Cl_2 detected within the injection and observation wells (0 to 0.26 ppmv) were similar to those obtained indoors and outdoors, indicating the pilot test injections did not cause a measurable increase in Cl_2 concentrations.

6.0 CONCLUSIONS

The pilot test results indicate that *in-situ* chemical oxidation can be used to effectively address the dissolved and adsorbed phase VOCs present at the site. Significant reductions in VOC concentrations were observed in the areas influenced by the pilot test injections. The reductions in VOC concentrations were most pronounced in the shallow zone wells where the majority of the Fenton's reagent was injected. The estimated mass of contaminants decreased in both the shallow and deep zones. Little or no changes were observed in VOC concentrations (or other groundwater quality parameters) in the wells outside the zones of influence. Air monitoring results from the building and the pilot test work area indicate that the injections can be performed safely.

7.0 RECOMMENDATIONS

Based on the results of the July 1998 *in-situ* chemical oxidation pilot test, the results of the August 1998 groundwater sampling event, and prior characterization of the site conditions, the following actions are recommended to address the remaining dissolved and adsorbed phase VOCs present at the site:

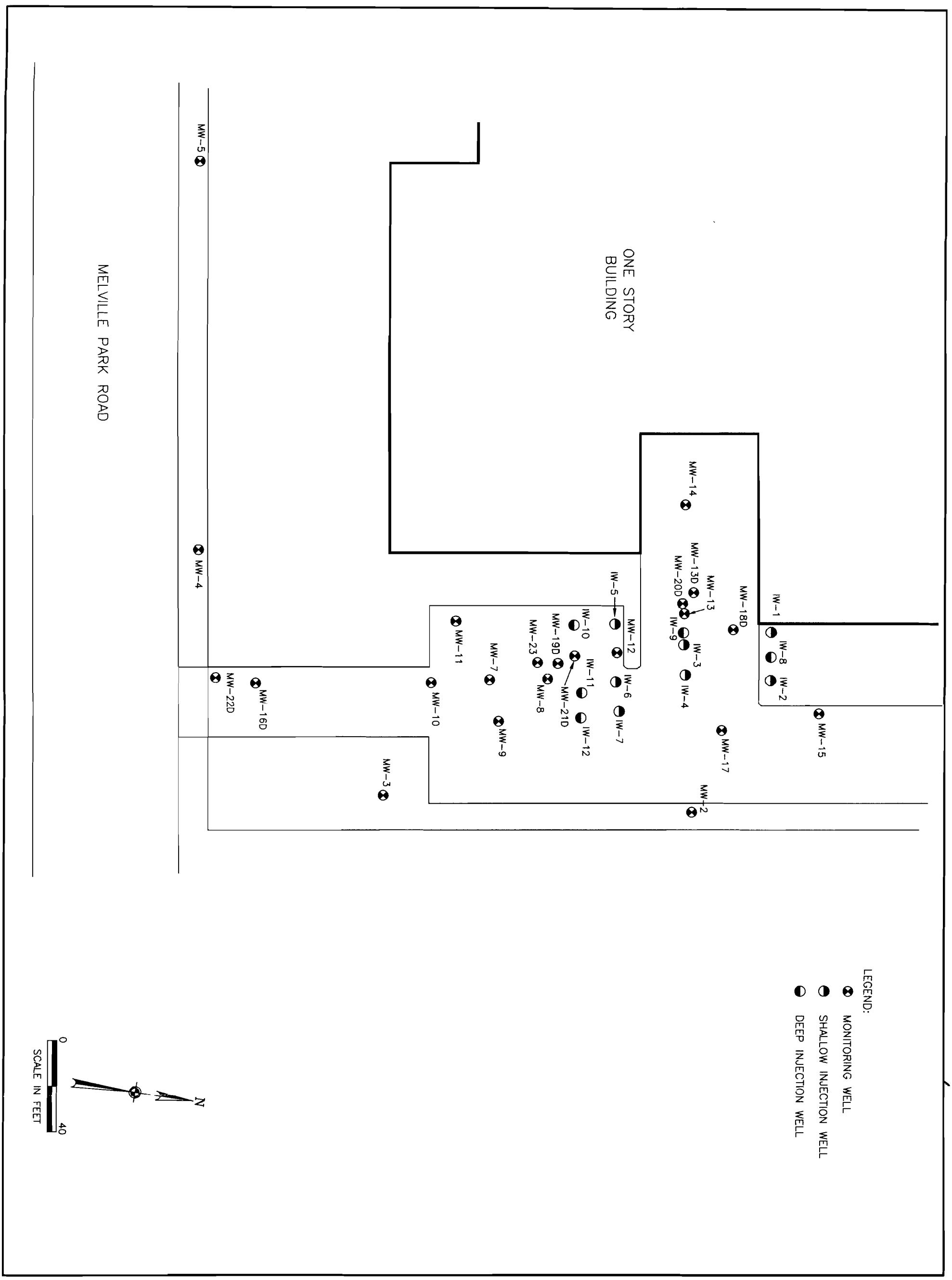
- properly seal/abandon well MW-21D, which is screened across the shallow and deep zones (from 50 to 160 feet below grade), to eliminate a path for vertical migration of VOCs to the deep zone;

- conduct injections of Fenton's reagent into the shallow groundwater zone on a periodic basis (i.e. monthly, bi-monthly, quarterly) and expand the injection well network to include downgradient observation wells MW-7, MW-8, MW-9, MW-10, and MW-11 to address the chlorinated VOCs in this portion of the shallow groundwater zone;

- conduct injections of Fenton's reagent on a periodic basis into vadose zone wells screened from approximately 15 to 25 feet below grade to address residual contamination in the vadose/capillary zone in the vicinity of IW-1, IW-3, IW-4, and MW-13;

- conduct injections of Fenton's reagent into the deep groundwater zone following the remediation of the shallow zone groundwater and install additional deep zone observation wells to determine the effects of remediation.

FIGURES



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SITE PLAN

FIGURE 1

25 MELVILLE PARK ROAD
MELVILLE, NEW YORK
PROJECT NO. U0063-001-01

PREPARED BY: PJ CADD/PJ | FILE NAME: MELV-1 | DATE: 11/12/98

LEGEND:

- MONITORING WELL
- SHALLOW INJECTION WELL
- DEEP INJECTION WELL
- PILOT TEST AREA OF INFLUENCE BASED ON FIELD AND LAB AQUIFER CHEMISTRY

ONE STORY BUILDING

MW-15
IW-1
IW-8
IW-2
MW-18D
MW-17
MW-13
MW-14
MW-13D
IW-3
IW-4
MW-20D
IW-9
MW-2
MW-12
IW-6
IW-7
IW-5
IW-10
IW-11
IW-12
MW-21D
MW-19D
MW-8
MW-23
MW-9
MW-7
MW-11
MW-10
MW-3
MW-16D
MW-22D
MW-5
MW-4

MELVILLE PARK ROAD

N

0 40

SCALE IN FEET

FIGURE 2

PILOT TEST AREA OF INFLUENCE
SHALLOW ZONE (45-65')

25 MELVILLE PARK ROAD
MELVILLE, NEW YORK
PROJECT NO. U0063-001-01

PREPARED BY: PJ CADD/PJ | FILE NAME: MELV-2 | DATE: 11/12/98

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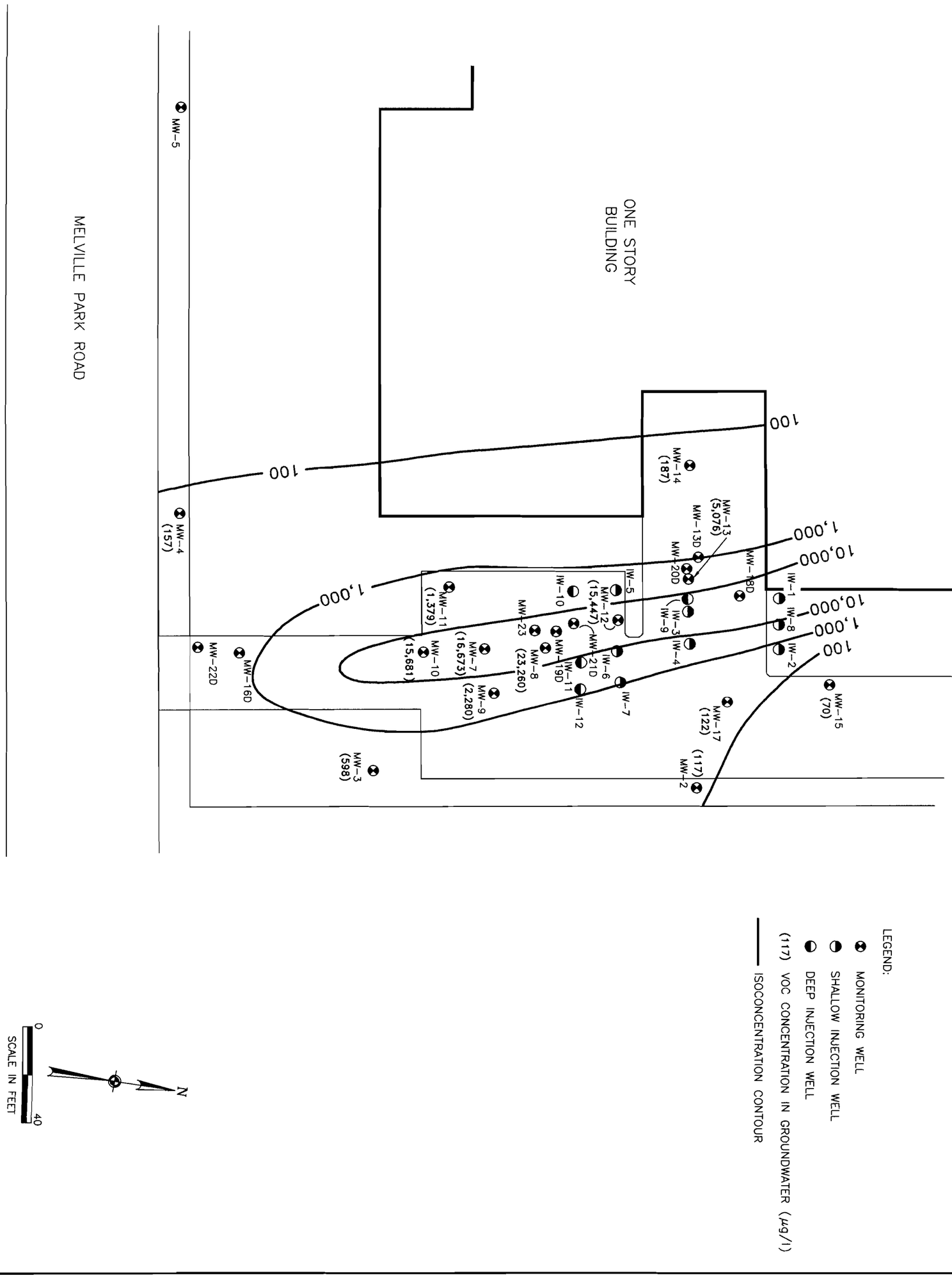

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VOC CONCENTRATIONS IN GROUNDWATER-
SHALLOW ZONE
APRIL 1997

FIGURE 3

25 MELVILLE PARK ROAD
MELVILLE, NEW YORK
PROJECT NO. U0063-001-01

PREPARED BY: PJ CADD/PJ | FILE NAME: MELV-3 | DATE: 11/12/98

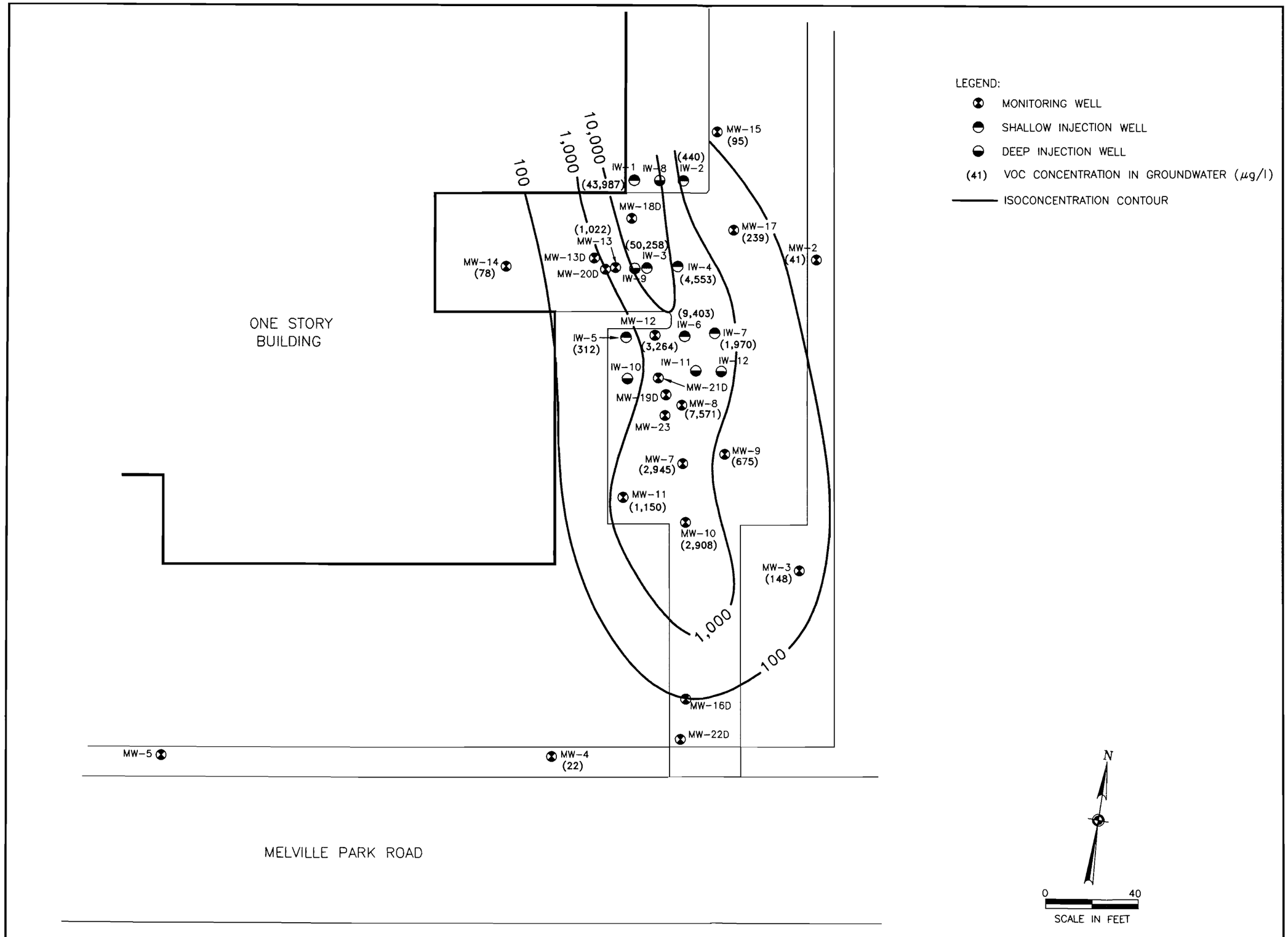

FIGURE 4

VOC CONCENTRATIONS IN GROUNDWATER–
SHALLOW ZONE
MARCH/APRIL 1998

25 MELVILLE PARK ROAD
MELVILLE, NEW YORK
PROJECT NO. U0063-001-01

PREPARED BY: PJ CADD/PJ | FILE NAME: MELV-4 | DATE: 11/12/98

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LEGEND:

- MONITORING WELL
- SHALLOW INJECTION WELL
- DEEP INJECTION WELL
- (83) VOC CONCENTRATION IN GROUNDWATER (µg/l)
- ISOCONCENTRATION CONTOUR

ONE STORY BUILDING

MW-15 (88)
(286) IW-2
IW-1 IW-8
10,000
1,000
100
(12,224)
MW-18D
(395) MW-13
MW-13D
(2,265) IW-3
MW-20D
IW-9
IW-4 (497)
MW-14 (118)
MW-17 (172)
MW-2 (83)
(1,196)
MW-12
(880) IW-6
IW-5 (212)
IW-7 (261)
IW-11
IW-12
IW-10
MW-21D
MW-19D
MW-8 (1,431)
MW-23
MW-9 (823)
MW-7 (1,476)
MW-11 (350)
MW-10 (4,279)
MW-3 (206)
1,000
100
MW-16D
MW-22D
MW-5
MW-4 (18)

MELVILLE PARK ROAD

N

0 40

SCALE IN FEET

FIGURE 5

VOC CONCENTRATIONS IN GROUNDWATER–
SHALLOW ZONE
AUGUST 4, 1998

25 MELVILLE PARK ROAD
MELVILLE, NEW YORK
PROJECT NO. U0063-001-01

PREPARED BY: PJ CADD/PJ | FILE NAME: MELV-5 | DATE: 11/12/98

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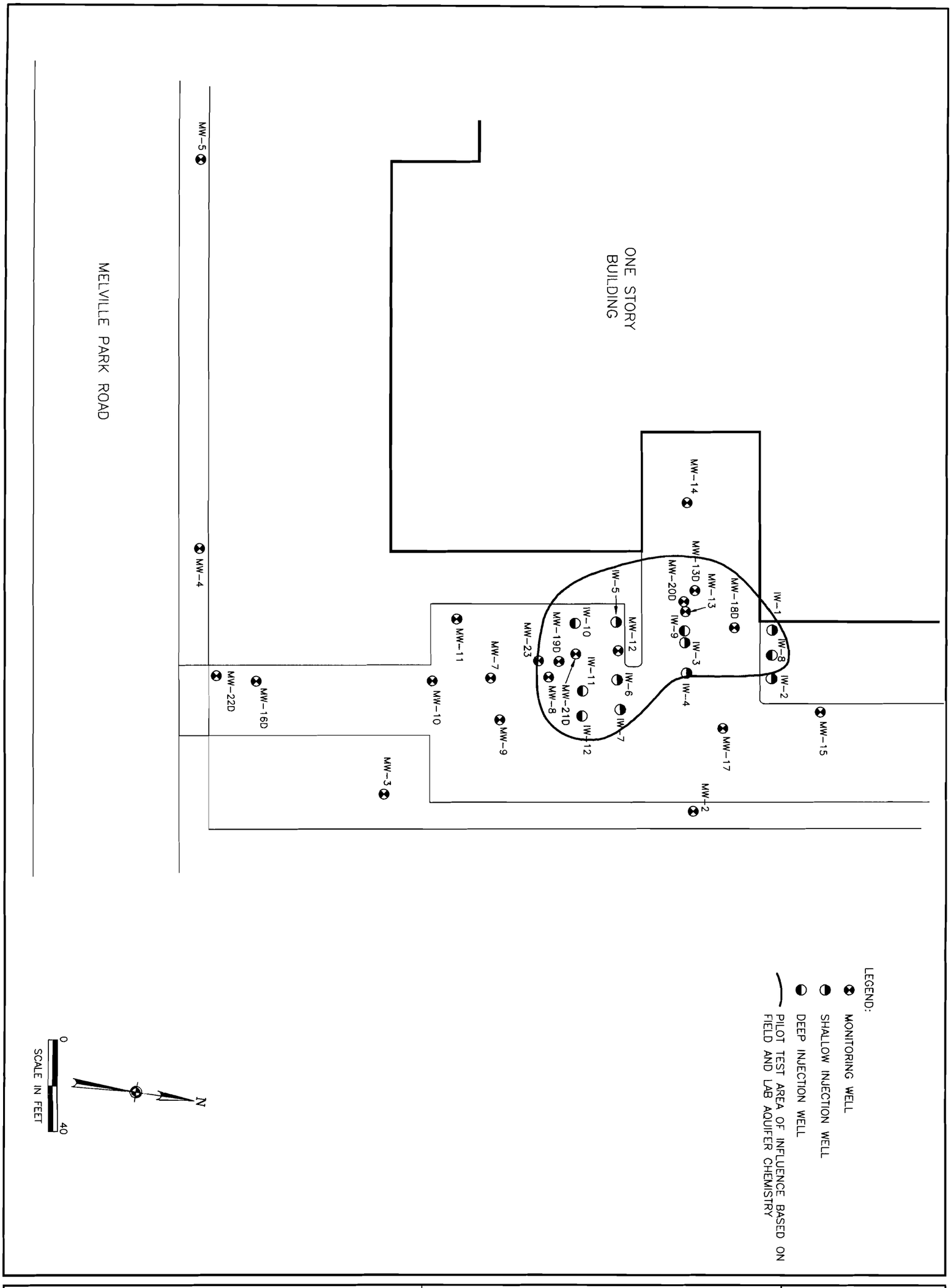

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PILOT TEST AREA OF INFLUENCE
DEEP ZONE (75-95')

FIGURE 6

25 MELVILLE PARK ROAD
MELVILLE, NEW YORK
PROJECT NO. U0063-001-01

PREPARED BY: PJ CADD/PJ | FILE NAME: MELV-6 | DATE: 11/12/98

LEGEND:

- MONITORING WELL
- SHALLOW INJECTION WELL
- DEEP INJECTION WELL
- (119) VOC CONCENTRATION IN GROUNDWATER ($\mu g/l$)
- ISOCONCENTRATION CONTOUR

ONE STORY BUILDING

MW-15
(3073)
IW-1
IW-8
IW-2
MW-18D
MW-17
MW-2
(627)
MW-13
MW-14
MW-13D
IW-3
IW-4
MW-20D
IW-9
(5211)
MW-12
IW-6
IW-5
IW-7
(1276)
IW-10
IW-11
IW-12 (119)
MW-21D (2161)
MW-19D
MW-8
MW-23
(3010)
MW-9
MW-7
MW-11
1,000
100
1,000
100
MW-10
MW-3
MW-16D
(2038)
MW-22D
MW-5
MW-4

MELVILLE PARK ROAD

N

0 40

SCALE IN FEET

FIGURE 7

VOC CONCENTRATIONS IN GROUNDWATER-
DEEP ZONE
MARCH/APRIL 1998

25 MELVILLE PARK ROAD
MELVILLE, NEW YORK
PROJECT NO. U0063-001-01

PREPARED BY: PJ CADD/PJ | FILE NAME: MELV-7 | DATE: 11/12/98

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LEGEND:

- MONITORING WELL
- SHALLOW INJECTION WELL
- DEEP INJECTION WELL
- (163) VOC CONCENTRATION IN GROUNDWATER ($\mu g/l$)
- ISOCONCENTRATION CONTOUR

ONE STORY BUILDING

MW-15
(713)
IW-1
IW-8
IW-2
MW-18D
MW-17
MW-2
(564)
MW-13
MW-14
MW-13D
IW-3
IW-4
MW-20D
IW-9
(6118)
MW-12
IW-6
IW-7 (163)
IW-5
(30)
IW-10
IW-11
IW-12 (65)
MW-21D (4623)
MW-19D
MW-8
MW-23
(5243)
MW-9
MW-7
100
1,000
1,000
100
MW-11
MW-10
MW-3
MW-16D
(2760)
MW-22D
MW-5
MW-4

MELVILLE PARK ROAD

N

0 40

SCALE IN FEET

FIGURE 8

VOC CONCETRATIONS IN GROUNDWATER-
DEEP GROUNDWATER
AUGUST 1998

25 MELVILLE PARK ROAD
MELVILLE, NEW YORK
PROJECT NO. U0063-001-01

PREPARED BY: PJ CADD/PJ

FILE NAME: MELV-8

DATE: 11/12/98

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TABLE 4
SUMMARY OF GROUNDWATER CHEMISTRY SAMPLE RESULTS
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well / Date	3 Well Volumes (gallons)	Volume Purged (gallons)	Purge Rate (gpm)	pH (s.u.)	DO (mg/l)	BOD (mg/l)	COD (mg/l)	Chloride (mg/l)	Sulfate (mg/l)	Total Alk. (mg/l)	TDS (mg/l)	TOC (mg/l)	Total CN (ug/l)	As (ug/l)	Ba (ug/l)	Cd (ug/l)	Cr (ug/l)	Pb (ug/l)	Mn (ug/l)	Hg (ug/l)	Se (ug/l)	Ag (ug/l)	Iron (mg/l)	Ferric (mg/l)	Ferrous (mg/l)	Phenanthrene Degraders (col/ml)	Total Organisms (cells/ml)	Florescent Pseudomonads (col/ml)	Viable Organisms (col/ml)
Deep Zone Observation Wells																													
MW-16D (79.5 - 89.5 ft)																													
30-Mar-98	20	140	4	5.52	5.2	2	<10	41.3	16.2	7.0	117	1.2	--	--	--	--	--	--	--	--	--	--	0.351	0.351	< 0.100	< 100	1,100,000	< 100	1,000
04-Aug-98	21	40	4	5.40	5.3	<2	31	46.5	19.9	7.5	143	7.0	--	--	--	--	--	--	--	--	--	--	0.149	0.149	< 0.100	--	--	--	--
MW-18D (133 - 143 ft)																													
01-Apr-98	188	200	15	5.72	2.3	3	25	44.2	15.3	44.7	209	2.4	--	1.9	131	0.3	3.9	3.0	741	<0.10	<2.4	<0.80	1.090	1.090	< 0.100	--	--	--	--
15-Jul-98	--	--	--	--	--	NA	25	45.3	15.4	46.7	180	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	<2	13	46.7	12.9	46	187	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
04-Aug-98	191	250	25	5.75	3.5	<2	16	53.1	14	50.4	208	2.3	--	<1.4	151	0.4	1.9	2.8	716	<0.10	<2.0	<0.61	0.150	0.150	< 0.100	--	--	--	--
MW-19D (160 - 170 ft)																													
01-Apr-98	242	525	15	5.53	6.0	4	19	90.5	3.1	7.6	170	4.0	<10	2.2	111	<0.20	3.0	1.2	43.3	<0.10	<2.4	<0.80	0.532	0.532	< 0.100	< 100	2,000,000	25,000	610,000
15-Jul-98	--	--	--	--	--	NA	25	90.5	12.1	23	211	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	2	34	86.7	9.3	20.8	210	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
04-Aug-98	245	300	20	5.49	6.6	<2	16	92.3	13.2	7.2	207	1.7	--	<1.4	107	<0.31	6.0	4.2	43.9	<0.10	<2.0	1.3	1.110	1.110	< 0.100	--	--	--	--
MW-20D (175 - 185 ft)																													
01-Apr-98	271	300	15	5.49	6.3	4	<10	93.3	14.4	8.7	187	2.1	--	<1.1	97.7	<0.20	2.5	1.5	53.3	<0.10	<2.4	<0.80	< 0.100	< 0.100	< 0.100	< 100	1,800,000	35,000	288,000
15-Jul-98	--	--	--	--	--	NA	<10	86.2	18	37.8	229	1.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	NA	19	86.3	15.6	39.5	255	2.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
04-Aug-98	275	375	25	5.73	6.2	<2	16	89.7	18.5	7.1	197	2.1	--	<1.4	79.4	<0.31	0.9	1.2	28.4	<0.10	<2.0	<0.61	0.226	0.226	< 0.100	--	--	--	--
MW-21D (50 - 160 ft)																													
01-Apr-98	222	450	15	6.00	3.7	3	19	38.1	15.2	24.4	136	4.2	--	--	--	--	--	--	--	--	--	--	0.823	0.823	< 0.100	< 100	540,000	1,300	77,000
04-Aug-98	225	500	20	5.69	6.9	<2	19	37.5	31.8	13.3	170	4.7	--	--	--	--	--	--	--	--	--	--	4.530	3.360	1.170	--	--	--	--
MW-23 (70 - 85 ft)																													
30-Mar-98	17	40	4	5.68	3.5	6	<10	16.7	14	30	162	9.7	--	<1.1	113	<0.20	2.4	<0.70	175	<0.10	<2.4	<0.80	0.929	0.929	< 0.100	< 100	2,300,000	1,900	68,000
15-Jul-98	--	--	--	--	--	NA	<10	13.6	17.5	27	113	2.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	3	<10	10.9	13.6	24.6	90	5.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03-Aug-98	18	60	4	5.14	19.1	NR	19	30.9	16.8	24.2	192	3.8	--	<1.4	102	<0.31	2.5	<0.90	92.5	<0.10	3.3	<0.61	0.355	0.355	< 0.100	--	--	--	--

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TABLE 4
SUMMARY OF GROUNDWATER CHEMISTRY SAMPLE RESULTS
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well / Date	3 Well Volumes (gallons)	Volume Purged (gallons)	Purge Rate (gpm)	pH (s.u.)	DO (mg/l)	BOD (mg/l)	COD (mg/l)	Chloride (mg/l)	Sulfate (mg/l)	Total Alk. (mg/l)	TDS (mg/l)	TOC (mg/l)	Total CN (ug/l)	As (ug/l)	Ba (ug/l)	Cd (ug/l)	Cr (ug/l)	Pb (ug/l)	Mn (ug/l)	Hg (ug/l)	Se (ug/l)	Ag (ug/l)	Iron (mg/l)	Ferric (mg/l)	Ferrous (mg/l)	Phenanthrene Degraders (col/ml)	Total Organisms (cells/ml)	Florescent Pseudomonads (col/ml)	Viable Organisms (col/ml)
Shallow Zone Perimeter Observation Wells																													
MW-2 (40 - 60 ft)																													
01-Apr-98	11	300	15	5.80	8.2	6	66	5.1	6.5	23.5	53	5.0	--	--	--	--	--	--	--	--	--	--	1.010	1.010	< 0.100	< 100	720,000	600	650,000
04-Aug-98	14	60	6	5.77	6.0	<2	13	6.0	15.7	34.0	91	6.6	--	--	--	--	--	--	--	--	--	--	0.370	0.370	< 0.100	--	--	--	--
MW-3 (40 - 60 ft)																													
01-Apr-98	20	150	15	5.81	3.2	3	34	8.9	18.2	38.9	88	6.1	--	--	--	--	--	--	--	--	--	--	< 0.100	< 0.100	< 0.100	< 100	2,500,000	8,000	43,000
04-Aug-98	24	60	6	5.69	5.0	<2	<10	8.7	27.2	40.9	103	3.6	--	--	--	--	--	--	--	--	--	--	0.518	0.518	< 0.100	--	--	--	--
MW-4 (40 - 60 ft)																													
01-Apr-98	21	225	15	5.91	5.0	2	19	43.5	34.6	43.6	169	3.9	--	--	--	--	--	--	--	--	--	--	0.431	0.431	< 0.100	< 100	1,800,000	6,000	26,000
04-Aug-98	24	90	6	5.65	6.6	<2	<10	31.4	45.4	34.2	186	2.3	--	--	--	--	--	--	--	--	--	--	0.312	0.312	< 0.100	--	--	--	--
MW-14 (46 - 56 ft)																													
31-Mar-98	5	80	4	5.85	5.9	6	34	27.7	24.6	15.2	136	5.6	--	--	--	--	--	--	--	--	--	--	0.218	0.218	< 0.100	< 100	720,000	59,000	134,000
03-Aug-98	6	60	4	5.02	7.5	<2	13	17.8	42.2	12.9	137	2.2	--	--	--	--	--	--	--	--	--	--	0.113	0.113	< 0.100	--	--	--	--
MW-15 (48.5 - 58.5 ft)																													
31-Mar-98	6	80	4	5.88	4.3	3	48	15.1	20.9	17	84	4.0	--	--	--	--	--	--	--	--	--	--	0.344	0.344	< 0.100	< 100	1,100,000	5,000	25,000
03-Aug-98	7	40	4	5.79	4.8	<2	19	12.1	23.2	25.2	101	3.8	--	--	--	--	--	--	--	--	--	--	1.710	< 0.100	< 0.100	--	--	--	--
MW-17 (50 - 60 ft)																													
31-Mar-98	7	40	1	6.04	3.4	3	34	9.7	11	21.3	68	4.1	--	--	--	--	--	--	--	--	--	--	1.380	1.380	< 0.100	< 100	720,000	1,000	7,000
03-Aug-98	3	40	2	5.74	5.3	<2	10	12.0	18.3	22.6	96	5.9	--	--	--	--	--	--	--	--	--	--	0.463	< 0.100	< 0.100	--	--	--	--
Shallow Zone Downgradient Observation Wells																													
MW-7 (40 - 60 ft)																													
30-Mar-98	5	80	4	6.14	2.1	2	66	25.7	31.1	30.2	165	14.5	--	4.5	147	<0.20	2.7	<0.70	1,180	<0.10	<2.4	<0.80	8.210	8.210	< 0.100	< 100	1,100,000	4,000	10,000
15-Jul-98	--	--	--	--	--	<2	102	22.4	128	28.2	179	24.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	3	99	19.2	88.4	31.4	186	28.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
04-Aug-98	6	40	4	5.34	2.1	8	90	23.0	130	66.6	361	22.5	--	6.5	96	0.6	9.3	<0.90	1,500	<0.10	7.1	2.9	51.200	3.700	47.500	--	--	--	--
MW-8 (40 - 60 ft)																													
30-Mar-98	5	100	4	5.44	1.8	3	81	21.5	45.4	33.5	190	22.5	--	1.7	92.4	<0.20	2.1	1.0	157	<0.10	<2.4	<0.80	26.900	26.700	0.222	< 100	2,500,000	< 100	16,000
15-Jul-98	--	--	--	--	--	<2	81	7.4	47.2	15.8	93	16.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	29	117	4.7	197	<1.0	455	39.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03-Aug-98	6	120	4	5.43	1.5	8	87	--	128	28.8	329	19.5	--	9.8	61.1	<0.31	10.0	0.9	1,960	<0.10	6.4	<0.61	51.900	6.400	45.500	--	--	--	--
MW-9 (45 - 60 ft)																													
30-Mar-98	6	200	4	6.10	3.6	4	43	6.6	14.2	59.9	73	4.9	--	--	--	--	--	--	--	--	--	--	1.170	1.170	< 0.100	< 100	1,400,000	600	6,000
04-Aug-98	7	60	4	5.08	2.7	<2	102	9.7	76.4	36.1	206	14.1	--	--	--	--	--	--	--	--	--	--	2.230	1.600	0.625	--	--	--	--
MW-10 (45 - 60 ft)																													
30-Mar-98	6	180	4	5.92	1.9	4	34	31.0	45.6	34.1	168	7.4	--	5.2	171	<0.20	5.4	<0.70	1,240	<0.10	<2.4	<0.80	12.000	12.000	< 0.100	< 100	360,000	< 100	1,000
15-Jul-98	--	--	--	--	--	NA	43	39.9	130	29.0	269	9.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	NA	54	37.1	105	26.4	280	8.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
04-Aug-98	6	120	4	5.44	1.9	<2	45	24.9	65.4	34.7	214	9.0	--	3.7	110	<0.31	4.2	<0.90	1,300	<0.10	5.7	<0.61	12.200	1.800	10.400	--	--	--	--
MW-11 (45 - 60 ft)																													
30-Mar-98	5	300	4	6.18	3.2	2	34	23.0	10.6	38.9	129	3.7	--	1.3	324	<0.20	4.1	1.2	225	<0.10	<2.4	<0.80	2.320	2.320	< 0.100	< 100	110,000	2,500	11,000
15-Jul-98	--	--	--	--	--	NA	25	9.0	44.1	40.0	150	2.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	NA	28	9.3	42	39.4	145	4.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
04-Aug-98	6	60	4	5.35	6.0	<2	13	15.5	45.9	37.6	144	2.9	--	<1.4	161	<0.31	2.1	<0.90	25.0	<0.10	<2.0	1.0	0.366	0.366	< 0.100	--	--	--	--

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TABLE 4
SUMMARY OF GROUNDWATER CHEMISTRY SAMPLE RESULTS
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well / Date	3 Well Volumes (gallons)	Volume Purged (gallons)	Purge Rate (gpm)	pH (s.u.)	DO (mg/l)	BOD (mg/l)	COD (mg/l)	Chloride (mg/l)	Sulfate (mg/l)	Total Alk. (mg/l)	TDS (mg/l)	TOC (mg/l)	Total CN (ug/l)	As (ug/l)	Ba (ug/l)	Cd (ug/l)	Cr (ug/l)	Pb (ug/l)	Mn (ug/l)	Hg (ug/l)	Se (ug/l)	Ag (ug/l)	Iron (mg/l)	Ferric (mg/l)	Ferrous (mg/l)	Phenanthrene Degraders (col/ml)	Total Organisms (cells/ml)	Florescent Pseudomonads (col/ml)	Viable Organisms (col/ml)
Shallow Zone Injection Wells																													
IW-1 (45 - 60 ft)																													
31-Mar-98	6	80	4	6.34	4.0	2	325	21.6	27.6	48.8	134	6.6	51.6	--	--	--	--	--	--	--	--	--	0.526	0.526	< 0.100	< 100	2,500,000	300,000	285,000
03-Aug-98	7	80	4	3.22	>20	NR	87	52.1	140	<1.0	354	6.9	--	--	--	--	--	--	--	--	--	--	3.560	2.410	1.150	--	--	--	--
IW-2 (45 - 60 ft)																													
31-Mar-98	6	20		6.28	4.7	3	48	19.8	39.4	51	140	2.8	105.0	--	--	--	--	--	--	--	--	--	0.467	0.467	< 0.100	< 100	1,100,000	1,000	97,000
03-Aug-98	7	40	4	3.46	>20	NR	<10	12.1	112.0	<1.0	251	3.3	<10	--	--	--	--	--	--	--	--	--	2.070	1.400	0.665	--	--	--	--
IW-3 (45 - 60 ft)																													
30-Mar-98	7	45	3	5.57	2.0	7	729	31.7	10.6	50	162	10.4	67.9	6.0	170	0.6	2.9	<0.70	1,040	<0.10	<2.4	<0.80	15.000	6.920	8.080	< 100	4,500,000	11,000	74,000
15-Jul-98	--	--	--	--	--	NA	221	109	568	<1.0	1,170	58.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	NA	176	20.6	219	<1.0	568	42.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03-Aug-98	8	80	4	3.24	15.6	NR	132	54	88.8	<1.0	323	27.6	--	<1.4	46.4	2.7	16.1	12.2	1,740	<0.10	21.8	0.7	13.700	7.650	6.050	--	--	--	--
IW-4 (45 - 60 ft)																													
31-Mar-98	6	100	4	6.16	1.9	3	423	27.6	25	45.5	137	7.4	18.7	--	--	--	--	--	--	--	--	--	3.720	2.240	1.480	< 100	360,000	100	35,000
03-Aug-98	7	40	4	3.71	14.8	NR	63	17.3	110	<1.0	236	13.1	--	--	--	--	--	--	--	--	--	--	1.920	1.050	0.867	--	--	--	--
IW-5 (45 - 60 ft)																													
31-Mar-98	7	45	4	5.88	2.7	3	45	16.3	42.3	31.2	108	8.2	98.4	--	--	--	--	--	--	--	--	--	0.258	0.258	< 0.100	< 100	1,600,000	14,000	27,000
03-Aug-98	7	40	4	3.67	>20	NR	25	11.8	72.1	<1.0	192	3.9	47	--	--	--	--	--	--	--	--	--	0.362	0.362	< 0.100	--	--	--	--
IW-6 (45 - 60 ft)																													
31-Mar-98	7	80	4	5.80	1.7	2	147	29.1	44.2	52	140	15.5	<10	--	--	--	--	--	--	--	--	--	10.200	5.440	4.760	< 100	2,000,000	200	44,000
03-Aug-98	8	40	4	3.64	15.7	NR	72	14	118	<1.0	289	15.9	--	--	--	--	--	--	--	--	--	--	17.100	16.700	0.354	--	--	--	--
IW-7 (45 - 60 ft)																													
31-Mar-98	19	80	4	5.83	1.6	4	90	16.3	12.1	11.6	113	14.4	26	--	--	--	--	--	--	--	--	--	7.720	3.630	4.090	< 100	180,000	1,100	39,000
03-Aug-98	20	40	4	5.00	6.6	4	102	18.6	146	<1.0	378	22.9	--	--	--	--	--	--	--	--	--	--	39.500	38.800	0.645	--	--	--	--
MW-12 (46.5 - 56.5 ft)																													
31-Mar-98	6	60	6	5.68	1.5	3	63	19.5	25.5	37.1	138	12.5	14.2	--	--	--	--	--	--	--	--	--	7.170	6.920	0.254	< 100	720,000	< 100	5,000
03-Aug-98	6	40	4	3.62	>20	NR	75	12.5	109	<1.0	266	14.7	--	--	--	--	--	--	--	--	--	--	4.730	2.490	2.240	--	--	--	--
MW-13 (48 - 58 ft)																													
31-Mar-98	6	80	4	6.16	2.2	2	164	15.7	38	48.4	130	2.6	209.0	--	--	--	--	--	--	--	--	--	0.801	0.801	< 0.100	< 100	6,500,000	55,000	240,000
03-Aug-98	6	60	4	4.87	14.2	NR	114	13.1	48.1	9.8	157	6.9	54.0	--	--	--	--	--	--	--	--	--	2.130	1.190	0.936	--	--	--	--

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TABLE 4
SUMMARY OF GROUNDWATER CHEMISTRY SAMPLE RESULTS
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well / Date	3 Well Volumes (gallons)	Volume Purged (gallons)	Purge Rate (gpm)	pH (s.u.)	DO (mg/l)	BOD (mg/l)	COD (mg/l)	Chloride (mg/l)	Sulfate (mg/l)	Total Alk. (mg/l)	TDS (mg/l)	TOC (mg/l)	Total CN (ug/l)	As (ug/l)	Ba (ug/l)	Cd (ug/l)	Cr (ug/l)	Pb (ug/l)	Mn (ug/l)	Hg (ug/l)	Se (ug/l)	Ag (ug/l)	Iron (mg/l)	Ferric (mg/l)	Ferrous (mg/l)	Phenanthrene Degraders (col/ml)	Total Organisms (cells/ml)	Florescent Pseudomonads (col/ml)	Viable Organisms (col/ml)
Deep Zone Injection Wells																													
IW-8 (75 - 90 ft)																													
31-Mar-98	21	80	4	6.38	2.6	2	19	24.7	16.4	26.4	140	6.1	< 10	--	--	--	--	--	--	--	--	--	< 0.100	< 0.100	< 0.100	< 100	2,300,000	69,000	112,000
03-Aug-98	21	40	4	3.18	> 20	NR	19	22.3	126	< 1.0	295	3.1	--	--	--	--	--	--	--	--	--	--	10.700	9.630	1.070	--	--	--	--
IW-9 (75 - 90 ft)																													
31-Mar-98	22	100	4	5.97	3.9	2	22	35.2	14.3	10.9	126	4.1	< 10	--	--	--	--	--	--	--	--	--	< 0.100	< 0.100	< 0.100	< 100	< 180,000	45,000	207,000
03-Aug-98	23	80	4	2.76	> 20	NR	45	29	234	< 1.0	519	5.9	--	--	--	--	--	--	--	--	--	--	38.600	33.400	5.150	--	--	--	--
IW-10 (75 - 90 ft)																													
30-Mar-98	20	60	4	5.99	5.1	3	13	35.1	6.7	48.9	112	8.5	< 10	--	--	--	--	--	--	--	--	--	< 0.100	< 0.100	< 0.100	< 100	360,000	21,000	9,000
04-Aug-98	21	40	4	2.63	> 20	NR	22	14.4	338	< 1.0	692	10.2	--	--	--	--	--	--	--	--	--	--	46.600	44.400	2.240	--	--	--	--
IW-11 (75 - 90 ft)																													
31-Mar-98	22	80	4	5.49	4.3	4	13	32	23.9	10.7	110	11.5	< 10	--	--	--	--	--	--	--	--	--	< 0.100	< 0.100	< 0.100	< 100	2,000,000	300,000	480,000
15-Jul-98	--	--	--	--	--	NA	43	< 1.0	865	< 1.0	1,680	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20-Jul-98	--	--	--	--	--	NA	25	< 1.0	712	< 1.0	1,320	11.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
04-Aug-98	23	40	4	2.70	> 20	NR	25	17.7	306	< 1.0	663	6.9	--	--	--	--	--	--	--	--	--	--	41.900	40.000	1.890	--	--	--	--
IW-12 (75 - 90 ft)																													
31-Mar-98	20	60	4	5.62	5.2	5	13	36.1	21	11.7	112	5.9	< 10	--	--	--	--	--	--	--	--	--	< 0.100	< 0.100	< 0.100	< 100	360,000	28,000	150,000
04-Aug-98	18	40	4	2.89	> 20	NR	22	28	142	< 1.0	355	4.1	--	--	--	--	--	--	--	--	--	--	10.300	9.330	0.970	--	--	--	--
MW-13D (80 - 90 ft)																													
31-Mar-98	7	60	4	5.74	5.2	3	22	25.9	31.4	6.4	113	2.4	< 10	--	--	--	--	--	--	--	--	--	< 0.100	< 0.100	< 0.100	< 100	2,200,000	56,000	180,000
03-Aug-98	22	40	4	2.68	> 20	NR	25	10.9	291	< 1.0	580	3.7	--	--	--	--	--	--	--	--	--	--	25.100	18.500	6.560	--	--	--	--

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TABLE 5
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
FIVE PRIMARY CHLORINATED VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

		Concentration in ug/l and % of Total										
		1,1-DCA		1,2-DCE		1,1,1-TCA		TCE		PCE		Total
Well Type	Well / Date	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)
	MW-2 (40 - 60 ft)											
	20-Dec-94	5	2%	35	15%	23	10%	51	22%	120	51%	234
	03-Apr-97	2	2%	ND	0%	11	9%	7	6%	97	83%	117
	01-Apr-98	5	12%	ND	0%	10	24%	3	7%	23	56%	41
	15-Jul-98	5	12%	ND	0%	14	35%	2	5%	19	47%	41
	20-Jul-98	4	9%	1	2%	17	40%	2	5%	18	42%	43
	04-Aug-98	2	2%	6	7%	14	17%	15	18%	46	55%	83
	MW-3 (40 - 60 ft)											
	20-Dec-94	10	5%	28	13%	21	10%	48	22%	110	51%	217
	03-Apr-97	2	0%	110	18%	6	1%	160	27%	320	53%	598
	01-Apr-98	ND	0%	44	30%	4	3%	25	17%	75	51%	148
	15-Jul-98	3	1%	82	38%	3	1%	50	23%	78	36%	217
	20-Jul-98	4	1%	260	53%	6	1%	90	18%	130	26%	491
	04-Aug-98	2	1%	89	43%	2	1%	38	18%	75	36%	207
	MW-4 (40 - 60 ft)											
	20-Dec-94	ND	0%	ND	0%	ND	0%	ND	0%	ND	0%	ND
	03-Apr-97	2	1%	30	19%	6	4%	19	12%	100	64%	157
	01-Apr-98	ND	0%	2	9%	ND	0%	2	9%	18	81%	22
Shallow	15-Jul-98	ND	0%	ND	0%	ND	0%	2	24%	6	73%	8
	20-Jul-98	ND	0%	1	10%	ND	0%	2	19%	7	68%	10
Perimeter	04-Aug-98	ND	0%	2	11%	ND	0%	1	6%	15	83%	18
	MW-14 (46 - 56 ft)											
Observation	04-Mar-96	ND	0%	705	52%	28	2%	260	19%	360	27%	1,354
	04-Apr-97	1	1%	34	18%	6	3%	26	14%	120	64%	187
Wells	31-Mar-98	ND	0%	8	10%	3	4%	20	26%	47	60%	78
	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	9	100%	9
	20-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	6	100%	6
	03-Aug-98	ND	0%	3	3%	1	1%	4	3%	110	93%	118
	MW-15 (48.5 - 58.5 ft)											
	04-Mar-96	ND	0%	13	5%	13	5%	63	26%	150	63%	239
	04-Apr-97	2	3%	ND	0%	4	6%	4	6%	60	86%	70
	31-Mar-98	2	2%	ND	0%	12	13%	ND	0%	81	85%	95
	15-Jul-98	1	2%	ND	0%	27	50%	ND	0%	26	48%	55
	20-Jul-98	1	1%	ND	0%	39	55%	ND	0%	31	43%	72
	03-Aug-98	2	2%	1	1%	17	19%	2	2%	66	75%	88
	MW-17 (50 - 60 ft)											
	22-Jul-96	ND	0%	ND	0%	9	27%	3	9%	21	63%	33
	04-Apr-97	3	2%	2	2%	16	13%	8	7%	93	76%	122
	31-Mar-98	4	2%	ND	0%	10	4%	5	2%	220	92%	239
	15-Jul-98	2	2%	5	5%	10	9%	4	4%	85	80%	106
	20-Jul-98	2	3%	2	3%	9	12%	2	3%	63	81%	78
	03-Aug-98	2	1%	7	4%	6	3%	7	4%	150	87%	172

TABLE 5
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
FIVE PRIMARY CHLORINATED VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

		Concentration in ug/l and % of Total										
		1,1-DCA		1,2-DCE		1,1,1-TCA		TCE		PCE		Total
Well Type	Well / Date	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)
	MW-7 (40 - 60 ft)											
	25-Jan-95	ND	0%	1,600	8%	180	1%	5,200	27%	12,600	64%	19,580
	31-May-95	25	0%	52	0%	61	1%	3,200	27%	8,300	71%	11,638
	03-Apr-97	13	0%	900	5%	260	2%	1,500	9%	14,000	84%	16,673
	30-Mar-98	5	0%	1,900	64%	10	0%	310	11%	720	24%	2,946
	15-Jul-98	7	0%	1,300	88%	ND	0%	72	5%	96	7%	1,476
	20-Jul-98	14	0%	3,100	96%	ND	0%	62	2%	41	1%	3,218
	04-Aug-98	8	1%	1,300	88%	ND	0%	110	7%	58	4%	1,477
	MW-8 (40 - 60 ft)											
	31-May-95	17	0%	65	0%	270	1%	12,900	29%	31,700	71%	44,952
	03-Apr-97	10	0%	2,200	9%	150	1%	1,900	8%	19,000	82%	23,260
	30-Mar-98	8	0%	4,200	55%	53	1%	910	12%	2,400	32%	7,572
	15-Jul-98	9	0%	2,100	96%	1	0%	44	2%	28	1%	2,183
	20-Jul-98	5	0%	960	89%	2	0%	70	6%	43	4%	1,081
	03-Aug-98	6	0%	980	68%	8	1%	87	6%	350	24%	1,432
Shallow	MW-9 (45 - 60 ft)											
	31-May-95	8	1%	14	2%	21	3%	290	44%	330	50%	664
Downgradient	03-Apr-97	7	0%	520	23%	13	1%	540	24%	1,200	53%	2,280
	30-Mar-98	ND	0%	390	58%	ND	0%	220	33%	65	10%	676
Observation	15-Jul-98	8	0%	2,200	95%	2	0%	83	4%	17	1%	2,311
	20-Jul-98	9	0%	1,800	94%	2	0%	82	4%	12	1%	1,906
Wells	04-Aug-98	ND	0%	730	89%	ND	0%	48	6%	45	5%	824
	MW-10 (45 - 60 ft)											
	31-May-95	9	1%	12	1%	24	2%	670	49%	640	47%	1,356
	03-Apr-97	11	0%	1,200	8%	170	1%	2,300	15%	12,000	77%	15,681
	30-Mar-98	2	0%	1,000	34%	16	1%	690	24%	1,200	41%	2,909
	15-Jul-98	7	0%	2,300	55%	20	0%	270	6%	1,600	38%	4,198
	20-Jul-98	9	0%	2,200	41%	23	0%	390	7%	2,700	51%	5,322
	04-Aug-98	7	0%	1,700	40%	22	1%	450	11%	2,100	49%	4,280
	MW-11 (45 - 60 ft)											
	31-May-95	ND	0%	ND	0%	16	1%	260	18%	1,200	81%	1,476
	03-Apr-97	9	1%	130	9%	40	3%	300	22%	900	65%	1,379
	30-Mar-98	5	0%	100	9%	25	2%	360	31%	660	57%	1,150
	15-Jul-98	ND	0%	24	14%	3	2%	30	18%	110	66%	167
	20-Jul-98	ND	0%	29	19%	3	2%	31	20%	90	59%	153
	04-Aug-98	1	0%	68	19%	6	2%	85	24%	190	54%	350

TABLE 5
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
FIVE PRIMARY CHLORINATED VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

		Concentration in ug/l and % of Total										
		1,1-DCA		1,2-DCE		1,1,1-TCA		TCE		PCE		Total
Well Type	Well / Date	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)
	IW-1 (45 - 60 ft)											
	31-Mar-98	37	0%	30	0%	620	1%	1,300	3%	42,000	95%	43,987
	15-Jul-98	ND	0%	ND	0%	280	96%	ND	0%	10	3%	291
	20-Jul-98	ND	0%	ND	0%	120	8%	6	0%	1,300	91%	1,426
	03-Aug-98	1	0%	3	0%	140	1%	80	1%	12,000	98%	12,224
	IW-2 (45 - 60 ft)											
	31-Mar-98	3	1%	13	3%	15	3%	29	7%	380	86%	440
	15-Jul-98	ND	0%	ND	0%	2	73%	ND	0%	ND	0%	3
	20-Jul-98	ND	0%	10	10%	8	8%	6	6%	80	77%	104
	03-Aug-98	1	0%	8	3%	13	5%	14	5%	250	87%	286
	IW-3 (45 - 60 ft)											
	30-Mar-98	8	0%	2,800	6%	450	1%	11,000	22%	36,000	72%	50,258
	15-Jul-98	ND	0%	14	9%	1	1%	31	20%	110	70%	156
	20-Jul-98	7	1%	61	9%	10	1%	65	10%	540	79%	683
	03-Aug-98	3	0%	240	11%	12	1%	210	9%	1,800	79%	2,265
	IW-4 (45 - 60 ft)											
	31-Mar-98	ND	0%	1,100	24%	53	1%	1,500	33%	1,900	42%	4,554
	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	ND	0%	ND
	20-Jul-98	ND	0%	28	60%	ND	0%	12	26%	6	13%	47
	03-Aug-98	2	0%	91	18%	14	3%	140	28%	250	50%	497
Shallow	IW-5 (45 - 60 ft)											
	31-Mar-98	1	0%	32	10%	9	3%	120	38%	150	48%	313
Injection	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	ND	0%	ND
	20-Jul-98	ND	0%	140	64%	3	1%	16	7%	59	27%	219
Wells	03-Aug-98	1	0%	37	17%	6	3%	38	18%	130	61%	212
	IW-6 (45 - 60 ft)											
	31-Mar-98	10	0%	8,700	93%	13	0%	370	4%	310	3%	9,404
	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	ND	0%	ND
	20-Jul-98	5	0%	2,300	99%	2	0%	12	1%	2	0%	2,322
	03-Aug-98	4	0%	650	74%	6	1%	120	14%	100	11%	881
	IW-7 (45 - 60 ft)											
	31-Mar-98	13	1%	1,400	71%	ND	0%	460	23%	97	5%	1,971
	15-Jul-98	ND	0%	15	0%	ND	0%	ND	0%	ND	0%	ND
	20-Jul-98	8	0%	1,800	99%	ND	0%	7	0%	ND	0%	1,816
	03-Aug-98	3	1%	200	76%	2	1%	33	13%	23	9%	262
	MW-12 (46.5 - 56.5 ft)											
	04-Mar-96	ND	0%	2,015	8%	730	3%	4,300	18%	17,000	71%	24,045
	03-Apr-97	9	0%	2,200	14%	38	0%	6,100	39%	7,100	46%	15,448
	31-Mar-98	3	0%	1,500	46%	11	0%	1,300	40%	450	14%	3,265
	15-Jul-98	ND	0%	4	26%	ND	0%	4	26%	7	45%	16
	20-Jul-98	ND	0%	29	19%	3	2%	31	20%	90	59%	153
	03-Aug-98	3	0%	610	51%	3	0%	350	29%	230	19%	1,197
	MW-13 (48 - 58 ft)											
	04-Mar-96	ND	0%	4,500	6%	1,300	2%	7,600	10%	59,000	81%	72,400
	03-Apr-97	7	0%	950	19%	29	1%	590	12%	3,500	69%	5,076
	31-Mar-98	ND	0%	78	8%	14	1%	130	13%	800	78%	1,022
	15-Jul-98	ND	0%	3	5%	2	4%	4	7%	47	84%	56
	20-Jul-98	ND	0%	4	3%	1	1%	3	3%	110	93%	118
	03-Aug-98	ND	0%	23	6%	8	2%	94	24%	270	68%	395

TABLE 5
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
FIVE PRIMARY CHLORINATED VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

		Concentration in ug/l and % of Total										
		1,1-DCA		1,2-DCE		1,1,1-TCA		TCE		PCE		Total
Well Type	Well / Date	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)
	MW-16D (79.5 - 89.5 ft)											
	22-Jul-96	6	0%	ND	0%	30	0%	100	1%	9,800	99%	9,936
	04-Apr-97	ND	0%	5	2%	ND	0%	1	0%	260	98%	266
	30-Mar-98	ND	0%	13	1%	2	0%	23	1%	2,000	98%	2,038
	15-Jul-98	ND	0%	8	1%	1	0%	15	1%	1,100	98%	1,124
	20-Jul-98	ND	0%	9	1%	1	0%	16	1%	1,600	98%	1,626
	04-Aug-98	3	0%	840	30%	7	0%	110	4%	1,800	65%	2,760
	MW-18D (133 - 143 ft)											
	22-May-97	ND	0%	16	0%	ND	0%	89	2%	4,100	98%	4,205
	01-Apr-98	ND	0%	13	1%	2	0%	39	2%	1,600	97%	1,654
	15-Jul-98	ND	0%	7	1%	ND	0%	20	2%	1,200	98%	1,227
	20-Jul-98	ND	0%	8	1%	1	0%	22	2%	1,200	97%	1,231
	04-Aug-98	ND	0%	5	1%	ND	0%	10	2%	500	97%	515
	MW-19D (160 - 170 ft)											
	22-May-97	ND	0%	ND	0%	ND	0%	ND	0%	37	100%	37
	01-Apr-98	ND	0%	3	6%	ND	0%	7	15%	37	78%	47
	15-Jul-98	ND	0%	ND	0%	ND	0%	1	11%	8	88%	9
Deep	20-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	11	100%	11
	04-Aug-98	ND	0%	9	2%	ND	0%	22	5%	390	93%	421
Observation	MW-20D (175 - 185 ft)											
	22-May-97	ND	0%	ND	0%	ND	0%	ND	0%	51	100%	51
Wells	01-Apr-98	ND	0%	ND	0%	ND	0%	1	2%	41	98%	42
	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	19	100%	19
	20-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	20	100%	20
	04-Aug-98	ND	0%	ND	0%	1	3%	ND	0%	32	97%	33
	MW-21D (50 - 160 ft)											
	01-Apr-98	2	0%	450	21%	9	0%	600	28%	1,100	51%	2,161
	15-Jul-98	3	0%	850	9%	60	1%	960	10%	7,600	80%	9,473
	20-Jul-98	3	0%	870	9%	50	1%	840	9%	7,400	81%	9,163
	04-Aug-98	3	0%	740	16%	40	1%	740	16%	3,100	67%	4,623
	MW-23 (70 - 85 ft)											
	01-Apr-98	ND	0%	410	14%	ND	0%	200	7%	2,400	80%	3,010
	15-Jul-98	4	0%	990	27%	14	0%	110	3%	2,500	69%	3,618
	20-Jul-98	5	0%	710	39%	14	1%	75	4%	1,000	55%	1,804
	03-Aug-98	2	0%	210	4%	21	0%	110	2%	4,900	93%	5,243

TABLE 5
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
FIVE PRIMARY CHLORINATED VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

		Concentration in ug/l and % of Total										
		1,1-DCA		1,2-DCE		1,1,1-TCA		TCE		PCE		Total
Well Type	Well / Date	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)	(%)	(ug/l)
	IW-8 (75 - 90 ft)											
	31-Mar-98	ND	0%	21	1%	42	1%	110	4%	2,900	94%	3,073
	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	15	100%	15
	20-Jul-98	ND	0%	4	8%	4	8%	5	10%	35	73%	48
	03-Aug-98	ND	0%	15	2%	19	3%	79	11%	600	84%	713
	IW-9 (75 - 90 ft)											
	31-Mar-98	ND	0%	42	1%	39	1%	130	2%	5,000	96%	5,211
	15-Jul-98	ND	0%	ND	0%	28	1%	12	0%	3,800	99%	3,840
	20-Jul-98	ND	0%	2	0%	29	1%	24	1%	3,600	98%	3,655
	03-Aug-98	ND	0%	4	0%	32	1%	82	1%	6,000	98%	6,118
	IW-10 (75 - 90 ft)											
	30-Mar-98	ND	0%	220	40%	ND	0%	140	25%	190	35%	551
	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	5	100%	5
Deep	20-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	10	100%	10
	04-Aug-98	ND	0%	1	3%	ND	0%	3	10%	26	86%	30
Injection	IW-11 (75 - 90 ft)											
	31-Mar-98	2	0%	210	16%	7	1%	57	4%	1,000	78%	1,276
Wells	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	3	100%	3
	20-Jul-98	ND	0%	11	31%	ND	0%	1	3%	23	65%	35
	04-Aug-98	ND	0%	2	1%	ND	0%	1	1%	160	98%	163
	IW-12 (75 - 90 ft)											
	31-Mar-98	ND	0%	5	4%	ND	0%	4	3%	110	92%	119
	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	ND	0%	ND
	20-Jul-98	1	1%	120	90%	ND	0%	7	5%	5	4%	134
	04-Aug-98	ND	0%	53	80%	ND	0%	4	6%	8	12%	66
	MW-13D (80 - 90 ft)											
	04-Mar-96	ND	0%	ND	0%	ND	0%	5,800	100%	ND	0%	5,801
	03-Apr-97	ND	0%	6	0%	ND	0%	10	0%	4,600	100%	4,616
	31-Mar-98	ND	0%	ND	0%	ND	0%	7	1%	620	99%	627
	15-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	ND	0%	ND
	20-Jul-98	ND	0%	ND	0%	ND	0%	ND	0%	2	100%	2
	03-Aug-98	ND	0%	ND	0%	ND	0%	4	1%	550	99%	554

TABLE 6
COMPARISON OF PRE- AND POST-INJECTION VOC RESULTS
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well Type	Well	Screened Interval (ft bgs)	Total Concentration of Five Primary VOCs (ug/l)			Change from April 1998 to August 1998	
			April/May 1997	April 1998	August 1998	(ug/l)	(%)
Shallow Perimeter Observation Wells	MW-2	40 - 60	117	41	83	42	102%
	MW-3	40 - 60	598	148	207	59	40%
	MW-4	40 - 60	157	22	18	-4	-18%
	MW-14	46 - 56	187	78	118	40	51%
	MW-15	48.5 - 58.5	70	95	88	-7	-7%
	MW-17	50 - 60	122	239	172	-67	-28%
		Low	70	22	18	--	--
		High	598	239	207	--	--
		Average	209	104	114	11	10%
Shallow Downgradient Observation Wells	MW-7	40 - 60	16,673	2,946	1,477	-1469	-50%
	MW-8	40 - 60	23,260	7,572	1,432	-6140	-81%
	MW-9	45 - 60	2,280	676	824	148	22%
	MW-10	45 - 60	15,681	2,909	4,280	1371	47%
	MW-11	45 - 60	1,379	1,150	350	-800	-70%
		Low	1,379	676	350	--	--
		High	23,260	7,572	4,280	--	--
		Average	11,855	3,051	1,673	-1378	-45%
Shallow Injection Wells	IW-1	45 - 60	NA	43,987	12,224	-31763	-72%
	IW-2	45 - 60	NA	440	286	-154	-35%
	IW-3	45 - 60	NA	50,258	2,265	-47993	-95%
	IW-4	45 - 60	NA	4,554	497	-4057	-89%
	IW-5	45 - 60	NA	313	212	-101	-32%
	IW-6	45 - 60	NA	9,404	881	-8523	-91%
	IW-7	45 - 60	NA	1,971	262	-1709	-87%
	MW-12	46.5 - 56.5	15,448	3,265	1,197	-2068	-63%
	MW-13	48 - 58	5,076	1,022	395	-627	-61%
		Low	NA	313	212	--	--
		High	NA	50,258	12,224	--	--
		Average	NA	12,802	2,024	-10777	-84%
Deep Observation Wells	MW-16D	79.5 - 89.5	266	2,038	2,760	722	35%
	MW-18D	133 - 143	4,205	1,654	515	-1139	-69%
	MW-19D	160 - 170	37	47	421	374	796%
	MW-20D	175 - 185	51	42	33	-9	-21%
	MW-21D	50 - 160	NA	2,161	4,623	2462	114%
	MW-23	70 - 85	NA	3,010	5,243	2233	74%
		Low	37	42	33	--	--
		High	4,205	3,010	5,243	--	--
		Average	1,140	1,492	2,266	774	52%
Deep Injection Wells	IW-8	75 - 90	NA	3,073	713	-2360	-77%
	IW-9	75 - 90	NA	5,211	6,118	907	17%
	IW-10	75 - 90	NA	551	30	-521	-95%
	IW-11	75 - 90	NA	1,276	163	-1113	-87%
	IW-12	75 - 90	NA	119	66	-53	-45%
	MW-13D	80 - 90	4,616	627	554	-73	-12%
		Low	NA	119	30	--	--
		High	NA	5,211	6,118	--	--
		Average	NA	1,810	1,274	-536	-30%

TABLE 7
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
OTHER VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well Type	Well / Date	Benzene	Toluene	Ethylbenzene	Xylene	Acetone	2-Butanone (MEK)	Chloro-methane	Methylene Chloride	Carbon Disulfide	1,1-DCE	Chloroform	4-Methyl-2-Pentanone	2-Hexanone	Tentatively Identified Compounds
	MW-2 (40 - 60 ft)														
	20-Dec-94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	10	ND	-
	01-Apr-98	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	ND	10
	04-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-3 (40 - 60 ft)														
	20-Dec-94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	01-Apr-98	ND	ND	ND	ND	36	3	ND	ND	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	9
	04-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-4 (40 - 60 ft)														
	20-Dec-94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	01-Apr-98	ND	ND	ND	ND	6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Shallow	15-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	9
Perimeter	04-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-14 (46 - 56 ft)														
Observation	04-Mar-96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	04-Apr-97	ND	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	10	ND	-
Wells	31-Mar-98	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	8	ND	1	ND	ND	ND	ND	ND	ND	ND
	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03-Aug-98	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-15 (48.5 - 58.5 ft)														
	04-Mar-96	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	ND	ND	ND	-
	04-Apr-97	ND	2	ND	ND	ND	5	ND	ND	ND	ND	ND	10	ND	-
	31-Mar-98	ND	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	6	ND	1	ND	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-17 (50 - 60 ft)														
	22-Jul-96	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	-
	04-Apr-97	ND	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	10	ND	-
	31-Mar-98	ND	ND	ND	ND	40	ND	ND	3	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	4	ND	ND	1	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 7
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
OTHER VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well Type	Well / Date	Benzene	Toluene	Ethylbenzene	Xylene	Acetone	2-Butanone (MEK)	Chloro-methane	Methylene Chloride	Carbon Disulfide	1,1-DCE	Chloroform	4-Methyl-2-Pentanone	2-Hexanone	Tentatively Identified Compounds
Shallow Downgradient Observation Wells	MW-7 (40 - 60 ft)														
	25-Jan-95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	31-May-95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	8	9	90	ND	ND	ND	ND	ND	5	ND	ND	ND	-
	30-Mar-98	ND	ND	ND	ND	6	ND	ND	2	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND
	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	04-Aug-98	ND	ND	ND	ND	62	7	ND	ND	ND	ND	ND	ND	ND	ND
	MW-8 (40 - 60 ft)														
	31-May-95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	5	11	110	ND	ND	ND	ND	ND	4	ND	ND	ND	-
	30-Mar-98	ND	2	3	20	12	ND	ND	2	ND	2	ND	ND	ND	65
	15-Jul-98	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND
	20-Jul-98	ND	ND	ND	ND	160	29	ND	2	ND	ND	ND	ND	ND	ND
	03-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	6
	MW-9 (45 - 60 ft)														
	31-May-95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	30-Mar-98	ND	ND	ND	ND	61	ND	ND	9	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	72	ND	ND	4	ND	ND	ND	ND	ND	ND
	20-Jul-98	ND	ND	ND	ND	6	ND	ND	ND	ND	ND	ND	ND	ND	ND
	04-Aug-98	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-10 (45 - 60 ft)														
	31-May-95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	5	7	41	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	30-Mar-98	ND	ND	1	5	ND	ND	ND	2	ND	1	ND	ND	ND	10
	15-Jul-98	ND	ND	ND	ND	16	ND	ND	3	ND	ND	ND	ND	ND	ND
	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	04-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-11 (45 - 60 ft)														
	31-May-95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	ND	ND	ND	ND	50	ND	ND	ND	ND	ND	50	ND	-
	30-Mar-98	ND	ND	ND	ND	6	ND	ND	2	ND	2	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	5	ND	ND	1	ND	ND	ND	ND	ND	ND
	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	04-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 7
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
OTHER VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well Type	Well / Date	Benzene	Toluene	Ethylbenzene	Xylene	Acetone	2-Butanone (MEK)	Chloro-methane	Methylene Chloride	Carbon Disulfide	1,1-DCE	Chloroform	4-Methyl-2-Pentanone	2-Hexanone	Tentatively Identified Compounds
	IW-1 (45 - 60 ft)														
	31-Mar-98	ND	29	24	340	95	ND	ND	16	ND	ND	ND	ND	ND	745
	15-Jul-98	ND	ND	ND	ND	150	ND	2	3	ND	ND	ND	ND	ND	74
	20-Jul-98	ND	ND	ND	ND	120	13	1	ND	ND	ND	ND	ND	ND	421
	03-Aug-98	ND	1	5	68	38	6	ND	ND	ND	4	ND	ND	ND	415
	IW-2 (45 - 60 ft)														
	31-Mar-98	ND	ND	ND	ND	19	ND	ND	2	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	52	ND	ND	3	ND	ND	ND	ND	ND	19
	20-Jul-98	ND	ND	ND	ND	22	4	ND	ND	ND	ND	ND	ND	2	30
	03-Aug-98	ND	ND	ND	ND	4	ND	ND	ND	ND	ND	ND	ND	ND	6
	IW-3 (45 - 60 ft)														
	30-Mar-98	ND	16	62	560	5	10	ND	2	ND	5	ND	ND	ND	699
	15-Jul-98	ND	ND	ND	ND	510	63	5	3	1	ND	2	2	4	152
	20-Jul-98	ND	ND	1	8	280	56	ND	ND	14	ND	ND	4	11	177
	03-Aug-98	ND	ND	ND	8	170	42	2	ND	7	ND	ND	3	16	160
	IW-4 (45 - 60 ft)														
	31-Mar-98	ND	ND	ND	ND	150	ND	ND	32	ND	ND	ND	ND	ND	530
	15-Jul-98	ND	ND	ND	ND	150	ND	ND	3	ND	ND	ND	ND	ND	18
	20-Jul-98	ND	ND	ND	ND	1,300	180	ND	1	1	ND	ND	9	ND	181
	03-Aug-98	ND	ND	ND	ND	49	14	ND	ND	4	ND	ND	ND	5	ND
Shallow	IW-5 (45 - 60 ft)														
	31-Mar-98	ND	ND	ND	ND	48	ND	ND	2	ND	ND	ND	ND	ND	ND
Injection	15-Jul-98	ND	ND	ND	ND	25	ND	ND	ND	ND	ND	ND	ND	ND	9
	20-Jul-98	ND	ND	ND	ND	80	9	ND	ND	ND	ND	ND	ND	ND	10
Wells	03-Aug-98	ND	ND	ND	ND	7	ND	ND	ND	ND	ND	ND	ND	ND	ND
	IW-6 (45 - 60 ft)														
	31-Mar-98	ND	ND	ND	ND	55	ND	ND	15	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	100	ND	ND	ND	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	900	130	ND	ND	1	ND	ND	7	11	ND
	03-Aug-98	ND	ND	ND	ND	25	5	ND	ND	2	ND	ND	ND	2	ND
	IW-7 (45 - 60 ft)														
	31-Mar-98	ND	ND	ND	ND	170	ND	ND	11	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	1,300	240	ND	ND	ND	ND	ND	6	9	101
	20-Jul-98	ND	ND	ND	ND	590	110	ND	1	2	ND	ND	7	9	ND
	03-Aug-98	ND	ND	ND	ND	16	2	ND	ND	8	ND	ND	2	6	12
	MW-12 (46.5 - 56.5 ft)														
	04-Mar-96	ND	16	22	230	ND	ND	ND	ND	ND	30	ND	ND	ND	-
	03-Apr-97	ND	ND	6	38	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	31-Mar-98	ND	ND	ND	2	8	ND	ND	1	ND	1	ND	ND	ND	23
	15-Jul-98	ND	ND	ND	ND	120	18	ND	ND	ND	ND	ND	ND	2	9
	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03-Aug-98	ND	ND	ND	ND	51	11	ND	ND	ND	ND	ND	1	3	ND
	MW-13 (48 - 58 ft)														
	04-Mar-96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	31-Mar-98	ND	ND	ND	ND	130	ND	ND	10	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	220	28	ND	ND	ND	ND	ND	ND	ND	534
	20-Jul-98	ND	ND	ND	ND	21	3	ND	ND	ND	ND	ND	ND	ND	ND
	03-Aug-98	ND	ND	ND	3	24	7	ND	ND	ND	ND	ND	ND	3	21

TABLE 7
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
OTHER VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well Type	Well / Date	Benzene	Toluene	Ethylbenzene	Xylene	Acetone	2-Butanone (MEK)	Chloro-methane	Methylene Chloride	Carbon Disulfide	1,1-DCE	Chloroform	4-Methyl-2-Pentanone	2-Hexanone	Tentatively Identified Compounds
	MW-16D (79.5 - 89.5 ft)														
	22-Jul-96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	41	ND	ND	-
	04-Apr-97	ND	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	10	ND	-
	30-Mar-98	ND	ND	ND	2	3	ND	ND	2	ND	ND	ND	ND	ND	ND
	15-Jul-98	2	ND	ND	ND	4	ND	ND	1	ND	ND	ND	ND	ND	ND
	20-Jul-98	4	ND	ND	ND	1	ND	ND	1	ND	ND	ND	ND	ND	ND
	04-Aug-98	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-18D (133 - 143 ft)														
	22-May-97	ND	21	6	63	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	01-Apr-98	ND	1	ND	ND	12	ND	ND	ND	ND	ND	ND	ND	ND	ND
	15-Jul-98	2	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
	20-Jul-98	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	04-Aug-98	2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-19D (160 - 170 ft)														
	22-May-97	ND	2	ND	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	01-Apr-98	ND	1	ND	ND	7	10	ND	ND	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	9
Deep	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	04-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Observation	MW-20D (175 - 185 ft)														
	22-May-97	ND	2	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Wells	01-Apr-98	ND	ND	ND	ND	7	ND	ND	ND	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	9
	20-Jul-98	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	04-Aug-98	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW-21D (50 - 160 ft)														
	01-Apr-98	ND	2	ND	ND	7	17	ND	ND	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	2	2	12	4	ND	ND	2	ND	ND	ND	ND	ND	ND
	20-Jul-98	ND	2	1	8	6	ND	ND	ND	ND	6	ND	ND	ND	ND
	04-Aug-98	ND	1	ND	2	ND	ND	ND	ND	ND	3	ND	ND	ND	ND
	MW-23 (70 - 85 ft)														
	01-Apr-98	ND	ND	ND	ND	520	ND	ND	35	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND
	20-Jul-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03-Aug-98	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 7
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE RESULTS
OTHER VOCs
25 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Well Type	Well / Date	Benzene	Toluene	Ethylbenzene	Xylene	Acetone	2-Butanone (MEK)	Chloro-methane	Methylene Chloride	Carbon Disulfide	1,1-DCE	Chloroform	4-Methyl-2-Pentanone	2-Hexanone	Tentatively Identified Compounds
Deep Injection Wells	IW-8 (75 - 90 ft)														
	31-Mar-98	ND	ND	ND	ND	150	ND	ND	16	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	81	10	ND	3	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	44	7	ND	2	ND	ND	ND	ND	ND	9
	03-Aug-98	ND	ND	ND	ND	13	3	ND	ND	ND	ND	ND	ND	ND	ND
	IW-9 (75 - 90 ft)														
	31-Mar-98	ND	ND	ND	ND	360	ND	ND	33	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	4	13	ND	ND	1	ND	ND	ND	ND	ND	1,040
	20-Jul-98	ND	ND	ND	9	36	7	ND	ND	ND	ND	ND	ND	ND	431
	03-Aug-98	ND	ND	2	26	20	4	ND	ND	ND	ND	ND	2	ND	281
	IW-10 (75 - 90 ft)														
	30-Mar-98	ND	ND	ND	ND	45	ND	ND	4	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	5	ND	ND	1	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	20	ND	ND	ND	ND	ND	ND	ND	ND	39
	04-Aug-98	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
	IW-11 (75 - 90 ft)														
	31-Mar-98	ND	ND	ND	ND	14	ND	ND	1	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	4	ND	ND	ND	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	27	5	ND	ND	ND	ND	ND	ND	ND	9
	04-Aug-98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	IW-12 (75 - 90 ft)														
	31-Mar-98	ND	ND	ND	ND	22	ND	ND	ND	ND	ND	ND	ND	ND	10
	15-Jul-98	ND	ND	ND	ND	17	ND	ND	ND	ND	ND	ND	ND	ND	10
	20-Jul-98	ND	ND	ND	ND	140	12	ND	ND	ND	ND	ND	ND	ND	9
	04-Aug-98	ND	ND	ND	ND	11	2	ND	ND	ND	ND	ND	ND	ND	ND
	MW-13D (80 - 90 ft)														
	04-Mar-96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	03-Apr-97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
	31-Mar-98	ND	ND	ND	ND	ND	ND	ND	5	ND	ND	ND	ND	ND	ND
	15-Jul-98	ND	ND	ND	ND	23	ND	ND	1	ND	ND	ND	ND	ND	16
	20-Jul-98	ND	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03-Aug-98	ND	ND	ND	ND	13	2	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX A

HYDROGEN PEROXIDE CERTIFICATES OF ANALYSIS

GEORGE MANN & CO., INC.

SINCE 1971

P.O. BOX 9066 • PROVIDENCE, RHODE ISLAND 02940

Customer: Tarus Resources
Book No.: 247-285
Date Shipped: 7·10·98
Customer Order No.: 11090
Shipment No.: 103200
QCR No.: 1255
Attn:
Fax:

Material: Hydrogen Peroxide 3%
Trailer/Lot No.: T·97
Date of Manufacture: 7·9·98
Shelf Life: 12 months from date of manufacture when stored @ room temperature

CERTIFICATE OF ANALYSIS
Solution as Supplied

PROPERTY	RESULTS	SPECIFICATIONS	TEST METHOD
Appearance	ok	Clear, almost colorless	Visual
Color, APHA	10	20 maximum	GMC 200-B-1
Hydrogen Peroxide, %	2.9	2 – 4	GMC 200-L-2
Density, gm/cm	1.008		
Temperature, °C	20.2		

Date/Analyst: 7·9·98 Laura M Petrozzi

Questions on shipments should be directed to:

Joanne Aguiar	R. R. Bushnell
Customer Service Mgr.	Technical Director

:lmp c of a hydrogen peroxide 3% form.doc

LOAD # 1 (TANK B)
7/10/98 6:15 AM

GEORGE MANN & CO., INC.

P.O. BOX 9066 • PROVIDENCE, RHODE ISLAND 02940

SINCE 1921

Customer: Tarus Resources
Book No.: 247-285
Date Shipped: 7-10-98
Customer Order No.: 11090
Shipment No.: 103199
QCR No.: 1335
Attn:
Fax:

Material: Hydrogen Peroxide 3%
Trailer/Lot No.: T-98
Date of Manufacture: 7-9-98
Shelf Life: 12 months from date of manufacture when stored @ room temperature

CERTIFICATE OF ANALYSIS
Solution as Supplied

PROPERTY	RESULTS	SPECIFICATIONS	TEST METHOD
Appearance	ok	Clear, almost colorless	Visual
Color, APHA	10	20 maximum	GMC 200-B-1
Hydrogen Peroxide, %	3.0	2 – 4	GMC 200-L-2
Density, gm/cm	1.009		
Temperature, °C	20.1		

Date/Analyst: 7-9-98 Laura M Petrozzi

Questions on shipments should be directed to:

Joanne Aguiar	**R. R. Bushnell**
Customer Service Mgr.	**Technical Director**

:lmp c of a hydrogen peroxide 3% form.doc

LOAD #2 (TANK A)
7/10/98 8:15 AM

GEORGE MANN & CO., INC.

P.O. BOX 8066 • PROVIDENCE, RHODE ISLAND 02940

SINCE 1921

Customer: Janus Resources
Book No.: 247.
Date Shipped: 7.11.98
Customer Order No.: 11090
Shipment No.: 103202
QCR No.: 1240
Attn:
Fax:

Material: Hydrogen Peroxide 3%
Trailer/Lot No.: T-97
Date of Manufacture: 7.10.98
Shelf Life: 12 months from date of manufacture when stored @ room temperature

CERTIFICATE OF ANALYSIS
Solution as Supplied

PROPERTY	RESULTS	SPECIFICATIONS	TEST METHOD
Appearance	ok	Clear, almost colorless	Visual
Color, APHA	10	20 maximum	GMC 200-B-1
Hydrogen Peroxide, %	3.0	2 – 4	GMC 200-L-2
Density, gm/cm	1.009		
Temperature, °C	19.8		

Date/Analyst: 7.10.98 Laura M Petrozzi

Questions on shipments should be directed to:

Joanne Aguiar	**R. R. Bushnell**
Customer Service Mgr.	**Technical Director**

:lmp c of c hydrogen peroxide 3% form.doc

LOAD # 3 (TANK B)
7/11/98 6:20 AM

GEORGE MANN & CO., INC.

SINCE 1971

P.O. BOX 9066 • PROVIDENCE, RHODE ISLAND 02940

Customer: James Resources
Book No.: 247-287
Date Shipped: 7.11.98
Customer Order No.: 11090
Shipment No.: 103201
QCR No.: 1240
Attn:
Fax:

Material: Hydrogen Peroxide 3%
Trailer/Lot No.: T-98
Date of Manufacture: 7.10.98
Shelf Life: 12 months from date of manufacture when stored @ room temperature

CERTIFICATE OF ANALYSIS
Solution as Supplied

PROPERTY	RESULTS	SPECIFICATIONS	TEST METHOD
Appearance	ok	Clear, almost colorless	Visual
Color, APHA	10	20 maximum	GMC 200-B-1
Hydrogen Peroxide, %	3.0	2 – 4	GMC 200-L-2
Density, gm/cm	1.009		
Temperature, °C	20.3		

Date/Analyst: 7.10.98 Laura M Petrozzi

Questions on shipments should be directed to:

Joanne Aguiar	**R. R. Bushnell**
Customer Service Mgr.	**Technical Director**

:lmp c of a hydrogen peroxide 3% form.doc

LOAD #4 (TANK A)
7/11/98 6:25 AM

GEORGE MANN & CO., INC.

SINCE 1921 P.O. BOX 9066 • PROVIDENCE, RHODE ISLAND 02940

Customer: Jarus Resources
Book No.: 247-385
Date Shipped: 7-13-98
Customer Order No.: 11090
Shipment No.: 103205
QCR No.: 1235
Attn:
Fax:

Material: Hydrogen Peroxide 3%
Trailer/Lot No.: T-97
Date of Manufacture: 7-9-98
Shelf Life: 12 months from date of manufacture when stored @ room temperature

CERTIFICATE OF ANALYSIS
Solution as Supplied

PROPERTY	RESULTS	SPECIFICATIONS	TEST METHOD
Appearance	ok	Clear, almost colorless	Visual
Color, APHA	10	20 maximum	GMC 200-B-1
Hydrogen Peroxide, %	3.0	2 – 4	GMC 200-L-2
Density, gm/cm	1.009		
Temperature, °C	20.1°C		

Date/Analyst: 7-10-98 Laura H Petrozzi

Questions on shipments should be directed to:

Joanne Aguiar	**R. R. Bushnell**
Customer Service Mgr.	**Technical Director**

:lmp c of a hydrogen peroxide 3% form.doc

LOAD #5 (TANK B)
7/12/98 6:30 AM

GEORGE MANN & CO., INC.

SINCE 1921

P.O. BOX 9066 • PROVIDENCE, RHODE ISLAND 02940

Customer: Tarus Resources
Book No.: 247-285
Date Shipped: 7-12-98
Customer Order No.: 11090
Shipment No.: 103213
QCR No.: 1235
Attn:
Fax:

Material: Hydrogen Peroxide 3%
Trailer/Lot No.: T-98
Date of Manufacture: 7-9-98
Shelf Life: 12 months from date of manufacture when stored @ room temperature

CERTIFICATE OF ANALYSIS
Solution as Supplied

PROPERTY	RESULTS	SPECIFICATIONS	TEST METHOD
Appearance	ok	Clear, almost colorless	Visual
Color, APHA	10	20 maximum	GMC 200-B-1
Hydrogen Peroxide, %	3.0	2 – 4	GMC 200-L-2
Density, gm/cm	1.009		
Temperature, °C	20.1°C		

Date/Analyst: 7-10-98 Joanne M Petrozzi

Questions on shipments should be directed to:

Joanne Aguiar Customer Service Mgr.	R. R. Bushnell Technical Director

:imp c of a hydrogen peroxide 3% form.doc

LOAD # 6 (TANK A)
7/12/98 6:35 AM

APPENDIX B

PILOT TEST FIELD PARAMETER DATA

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-2

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	14:14	JD	44.56	6.09	0.098	186	5.44	14.6	175	---
07/09/98	08:59	JD	44.65	---	---	---	---	---	---	---
07/10/98	12:43	JB/JD	44.66	5.88	0.111	155	6.54 5.88	15.2	238	---
07/10/98	20:02	JB/JD	44.50	6.04	0.114	92	5.83	15.1	208	---
07/10/98	23:15	AS/DE JB/JD	44.52	6.04	0.123	290	5.88	14.0	304	---
07/11/98	08:32	JB/JD/DE	44.66	6.18	0.127	143	5.75	14.3	357	0.1
07/11/98	12:49	JB/JD/DE	44.55	6.29	0.128	235	5.35	16.9	259	0.1
07/11/98	15:15	JB/JD/DE	44.51	6.28	0.126	172	5.93	15.0	131	---
07/11/98	16:50	JD	44.59	6.13	0.139	134	5.27	14.9	---	---
07/12/98	08:52	JB/AS/DE	44.66	6.18	0.121	300	6.16	15.4	198	---
07/12/98	11:59	DE	44.50	5.92	0.121	163	5.95	15.0	224	---
07/12/98	14:37	AS	44.55	6.00	0.118	217	5.74	16.1	263	0
07/13/98	09:30	DE/JD	44.69	6.00	0.118	163	7.26	14.5	250	---

Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-3

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	11:02	JD	45.05	6.06	0.152	34	2.53	15.6	174	---
07/09/98	09:13	JD	45.05	---	---	---	---	---	---	---
07/10/98	13:04	JB/JD	45.07	6.08	0.158	75	3.90	15.9	150	---
07/10/98	20:38	JB	45.13	6.10	0.17	15	3.69	15.0	259	---
07/11/98	09:59	JB/JD/DE	45.17	6.20	0.166	2	4.37	16.3	220	0.2
07/11/98	13:15	JB/JD/DE	45.13	6.39	0.161	16	4.10	15.8	275	0.2
07/11/98	15:12	JB/JD/DE	45.11	6.16	0.154	201	2.94	16.0	131	---
07/11/98	16:49	JB	45.14	5.83	0.163	30	3.15	16.7	170	---
07/12/98	08:57	DE	45.18	5.94	0.139	64	2.65	15.7	176	---
07/12/98	12:20	DE	45.04	5.92	0.132	33	2.11	16.3	249	---
07/13/98	10:25	JD/DE	45.20	6.02	0.144	80	19.86	15.5	213	0.3

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-4

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	10:53	JD	44.98	6.05	0.268	157	4.42	15.1	135	0
07/09/98	09:11	JD	45.07	---	---	---	---	---	---	---
07/10/98	13:15	JB/JD	45.11	6.15	0.268	86	5.45	15.4	206	---
07/10/98	20:29	JB	45.09	6.15	0.272	14	5.28	14.6	233	---
07/11/98	09:57	JB/JD/DE	45.09	6.10	0.270	10	5.57	14.8	348	0
07/11/98	13:07	JB/DE	45.10	6.30	0.275	151	5.99	15.4	237	0
07/11/98	15:05	JB/JD/DE	45.06	6.38	0.264	126	5.83	15.4	41	---
07/11/98	16:41	JD	45.08	5.99	0.275	65	5.34	16.8	208	---
07/12/98	09:10	JB	45.12	6.19	0.266	116	5.42	15.9	184	---
07/12/98	12:10	DE	45.05	6.07	0.264	54	4.90	15.5	236	---
07/13/98	10:15	JD/DE	45.30	6.08	0.266	22	5.33	15.1	255	---

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-7

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	10:09	JD	44.55	5.98	0.303	999	1.63	15.6	47	3
07/09/98	09:09	JD	44.45	---	---	---	---	---	---	---
07/10/98	12:57	JB/JD	44.57	5.97	0.308	738	2.03	17.0	44	---
07/10/98	19:05	JB/JD	44.53	6.05	0.270	862	0.89	16.9	16	---
07/10/98	21:17	JB/JD/DE	44.44	6.14	0.260	982	0.97	15.2	76	0
07/11/98	22:42	JB/JD/DE	44.44	5.78	0.283	999	2.11	15.8	175	---
07/11/98	07:39	JB/JD	44.57	5.84	0.276	499	1.86	16.0	65	1
07/11/98	12:46	JB/DE	44.52	6.10	0.260	581	1.53	17.6	40	0.3
07/11/98	15:05	JB/JD/DE	44.45	6.00	0.249	708	2.03	17.3	54	---
07/11/98	16:35	JB	44.57	5.51	0.358	780	2.42	18.3	115	---
07/12/98	07:51	JB/AS	44.59	6.01	0.276	337	1.69	16.4	23	---
07/12/98	11:34	DE	45.45	6.28	0.249	572	1.44	18.4	16	---
07/12/98	14:53	AS	44.49	6.05	0.256	435	7.64	17.2	109	0.6
07/13/98	10:07	JB/JD/DE	44.61	5.82	0.311	555	9.92	16.1	121	---

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-8

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	10:23	JD	44.07	5.90	0.097	785	2.74	15.6	110	---
07/09/98	09:08	JD	43.95	---	---	---	---	---	---	---
07/13/98	11:40	JD/DE	---	5.58	0.117	999	8.12	16.3	167	0

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-9

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	10:16	JD	44.25	6.07	0.178	850	1.67	15.3	102	---
07/09/98	09:08	JD	44.26	---	---	---	---	---	---	---
07/13/98	11:10	JD/DE/AS	44.25	4.00	0.140	999	3.70	16.8	319	5

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-10

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	10:42	JD	44.65	5.88	0.289	975	0.95	15.6	110	---
07/09/98	09:08	JD	44.65	---	---	---	---	---	---	---
07/13/98	11:20	AS/DE	44.73	5.90	0.398	999	3.23	16.4	245	---

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-11

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	10:36	JD	45.26	6.18	0.202	999	5.80	16.1	152	---
07/09/98	09:10	JD	45.36	---	---	---	---	---	---	---
07/10/98	12:46	JB/JD	45.37	6.05	0.21	942	7.42	17.2	219	---
07/10/98	19:09	JB/JD	45.36	6.12	0.272	999	6.53	16.2	136	---
07/10/98	21:21	JB/JD/DE	45.29	6.28	0.208	999	6.34	15.4	124	---
07/10/98	22:55	JB/JD/DE	45.28	6.11	0.207	999	6.01	15.3	221	---
07/11/98	07:46	JB/JD	45.37	6.16	0.208	999	5.74	15.9	129	---
07/11/98	12:57	JB/DE	45.32	6.26	0.203	999	6.12	16.3	121	---
07/11/98	14:58	JB/JD/DE	45.30	6.25	0.213	999	5.80	16.1	103	---
07/11/98	16:36	JD	45.34	6.26	0.211	999	5.33	16.2	222	---
07/12/98	07:53	AS/DE	45.38	6.20	0.211	999	6.52	16.6	116	---
07/12/98	11:46	DE	45.38	6.15	0.210	999	5.01	17.3	170	---
07/12/98	14:55	AS	45.30	6.14	0.212	999	9.86	16.4	306	---
07/13/98	10:15	JD/DE	45.41	6.03	0.214	999	10.81	16.4	129	---

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-14

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	11:31	JD	43.04	5.96	0.14	625	6.34	15.7	208	---
07/09/98	08:53	JD	43.11	---	---	---	---	---	---	---
07/10/98	13:46	JD	43.14	6.18	0.173	89	7.70	16.0	226	---
07/10/98	20:11	JB/JD	42.98	6.15	0.171	398	7.25	16.5	253	---
07/10/98	23:09	JB/JD DE/AS	43.00	6.31	0.174	136	6.90	15.3	248	0
07/11/98	09:53	JB/JD/DE	43.11	6.14	0.178	128	6.79	16.8	236	0.1
07/11/98	12:59	JB/JD/DE	43.03	6.33	0.174	17	7.03	17.4	170	0
07/11/98	15:17	JB/JD/DE	43.00	6.40	0.172	46	6.78	15.7	136	---
07/11/98	16:52	JB	43.06	6.29	0.191	44	6.84	16.5	262	---
07/12/98	08:55	JB	43.13	6.30	0.178	999	7.22	16.2	118	---
07/12/98	14:42	AS	43.14	6.42	0.186	126	7.03	17.1	291	0
07/13/98	09:42	JD/DE	43.15	6.28	0.194	25	7.74	16.8	252	---

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-15

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	11:19	JD	43.73	5.66	0.061	344	5.50	14.6	210	---
07/09/98	08:42	JD	43.78	---	---	---	---	---	---	---
07/10/98	12:30	JB/JD	43.81	4.97	0.07	81	7.05	16.7	320	---
07/10/98	19:35	JB/JD	43.71	5.44	0.07	19	6.45	15.0	175	---
07/10/98	21:45	JB/JD/DE	43.60	5.53	0.074	22	5.90	14.8	318	0
07/10/98	23:10	JB/JD/DE/AS	43.67	5.61	0.074	28	6.09	14.7	289	0
07/11/98	08:25	JB/JD/DE	43.83	5.52	0.071	5	5.27	15.4	337	0.4
07/11/98	12:37	JB/DE	43.78	5.52	0.074	86	6.18	17.0	220	0.3
07/11/98	14:54	JB/JD/DE	43.67	5.80	0.071	244	6.40	16.4	176	---
07/11/98	16:33	JB/DE	43.65	6.24	0.072	240	6.13	16.2	182	---
07/12/98	08:04	JB/AS	43.81	5.59	0.071	44	6.50	15.2	146	---
07/12/98	11:47	DE	43.65	5.60	0.077	124	5.31	16.2	217	---
07/12/98	14:28	JB	43.71	5.76	0.077	167	6.30	16.6	235	0
07/13/98	09:27	JD	43.85	4.64	0.167	4	6.19	16.4	199	0

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-16D

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	10:06	JD	44.79	6.10	0.19	5	5.30	15.3	166	---
07/09/98	09:12	JD	44.76	---	---	---	---	---	---	---
07/10/98	13:22	JB/JD	44.90	6.08	0.199	65	5.72	16.4	217	---
07/11/98	10:10	JD	44.90	6.16	0.192	8	4.77	15.8	215	0
07/11/98	13:45	JD/DE/JB	44.84	6.35	0.199	10	5.61	16.0	144	0
07/11/98	15:42	JD/DE/JB	44.87	6.71	0.204	10	5.18	16.4	172	---
07/11/98	12:04	JD	44.88	6.01	0.208	11	4.96	15.6	280	---
07/12/98	12:45	DE	44.72	6.01	0.203	16	4.40	15.9	255	---
07/13/98	10:10	JD/DE	44.94	5.94	0.193	1	5.99	15.4	252	---

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-17

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	11:06	JD	43.73	5.97	0.104	55	3.99	14.1	191	---
07/09/98	08:59	JD	43.70	---	---	---	---	---	---	---
07/10/98	12:36	JB	43.82	5.64	0.108	115	4.69	15.6	232	---
07/10/98	19:30	JB/JD	43.63	5.94	0.118	22	4.90	14.5	108	---
07/10/98	21:37	JB/JD/DE	43.50	6.01	0.114	149	19.99	14.4	206	0
07/10/98	22:03	JD/DE	43.64	6.05	0.116	174	19.99	14.2	291	0
07/11/98	08:17	JB/JD/DE	43.83	6.00	0.134	68	19.99	14.6	320	6
07/11/98	12:32	JB/DE	43.75	5.88	0.151	446	16.33	17.2	161	0.4
07/11/98	14:50	JB/DE/JD	43.60	6.23	0.146	690	19.99	18.4	163	---
07/11/98	16:15	JB/DE	43.68	6.53	0.138	425	19.99	15.8	223	---
07/12/98	07:41	AS/JB	43.85	5.72	0.185	80	19.99	14.7	156	---
07/12/98	11:52	DE	43.52	5.81	0.146	128	19.99	15.4	194	---
07/12/98	14:20	JB	43.46	6.23	0.122	404	19.99	17.0	270	0.6
07/13/98	09:42	JD/DE	43.85	5.90	0.168	82	19.99	16.0	243	0.2

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-18D

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	09:26	JD	45.04	6.05	0.355	21	3.63	16.4	108	0
07/09/98	08:51	JD	45.12	---	---	---	---	---	---	---
07/13/98	11:10	JD/AS/DE	45.13	6.96	0.306	45	4.46	17.7	279	0

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-19D

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	09:43	JD	44.35	6.02	0.342	2	5.56	15.8	159	---
07/09/98	09:06	JD	44.35	---	---	---	---	---	---	---
07/09/98	11:55	JB/DE	44.37	6.33	0.356	29	6.44	17.5	184	---
07/09/98	15:58	JD	44.44	6.00	0.345	3	5.63	16.3	203	---
07/09/98	17:30	JD	44.35	6.45	0.414	12	5.69	16.4	201	---
07/09/98	18:55	JD	44.32	6.04	0.344	7	5.23	16.5	265	---
07/09/98	20:00	JD	44.44	6.16	0.351	21	6.05	16.1	286	---
07/10/98	13:25	JB/JD	44.42	6.04	0.351	54	6.42	16.5	235	---
07/11/98	10:15	JB/JD/DE	44.44	6.32	0.350	6	5.63	16.1	307	0.04
07/11/98	13:39	JB/JD/DE	44.40	6.19	0.350	7	5.47	16.0	234	0.01
07/11/98	15:39	JB/JD/DE	44.44	6.50	0.355	10	5.53	16.5	175	---
07/11/98	17:00	JB	44.44	6.03	0.360	14	5.27	16.0	279	---
07/12/98	12:39	JB	44.30	6.10	0.353	10	4.85	16.4	272	---
07/12/98	14:48	AS	44.47	6.18	0.355	11	5.48	16.8	284	0
07/13/98	09:55	JD/DE	45.40	6.04	0.350	4	5.98	16.4	206	---

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-20D

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	09:34	JD	44.22	6.13	0.387	4	5.33	16.2	143	---
07/09/98	08:55	JD	44.20	---	---	---	---	---	---	---
07/09/98	15:25	JB	44.31	6.31	0.387	8	5.75	16.8	199	---
07/09/98	17:47	JD	44.30	6.28	0.388	6	5.07	16.5	227	---
07/09/98	19:20	JD	44.23	6.35	0.387	1	5.66	16.5	280	---
07/10/98	13:57	JD	44.35	6.29	0.396	16	6.45	16.3	254	---
07/11/98	10:34	JD/JB/DE	44.33	6.45	0.397	10	5.61	17.3	327	0.1
07/11/98	---	JD/JB/DE	44.28	6.36	0.392	18	5.59	17.6	163	---
07/11/98	15:40	JD/JB/DE	44.30	6.50	0.393	10	5.57	18.2	180	---
07/11/98	16:55	JD	44.31	6.19	0.411	24	5.52	17.5	239	---
07/12/98	12:32	DE	44.18	6.27	0.396	27	5.02	19.4	240	---
07/12/98	14:39	AS	44.32	6.23	0.399	30	5.31	20.2	318	0
07/13/98	09:35	JD/DE	44.36	6.02	0.394	16	5.64	19.6	247	---

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Well: MW-21D

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	09:40	JD	44.22	6.09	0.217	68	1.27	15.9	85	---
07/09/98	09:03	JD	44.22	---	---	---	---	---	---	---
07/09/98	11:49	DE	44.22	6.28	0.218	84	2.44	19.8	168	---
07/09/98	15:33	JB	44.30	6.22	0.213	88	2.07	17.2	130	---
07/09/98	17:00	JD	44.22	6.21	0.221	58	1.78	16.3	99	---
07/09/98	18:30	JD	44.21	6.19	0.216	75	1.65	16.2	107	---
07/09/98	19:37	JD	44.21	6.21	0.217	69	2.13	16.1	132	---
07/10/98	13:39	JB	44.35	6.17	0.211	88	1.81	16.3	167	---
07/11/98	10:09	JB/JD/DE	44.33	6.32	0.211	28	17.58	16.7	312	50
07/11/98	13:36	JB/JD/DE	44.17	6.51	0.212	7	16.40	16.9	165	15
07/11/98	15:35	JB/JD/DE	44.25	---	---	---	---	---	---	---
07/11/98	16:59	JD	44.27	6.22	0.185	44	6.73	16.9	269	---
07/12/98	12:30	DE	42.55	6.29	0.225	610	19.99	17.7	277	---
07/12/98	14:45	AS	44.25	6.22	0.219	825	19.99	17.8	332	0.6
07/13/98	09:45	DE/JD	44.39	6.09	0.222	44	19.99	18.8	239	0.1

In-situ Chemical Oxidation Pilot Test
Observation Well Data Form

Client: WHCS Melville, LLC (c/o Archon Group)

Well: MW-23

Site: 25 Melville Park Road, Melville, NY

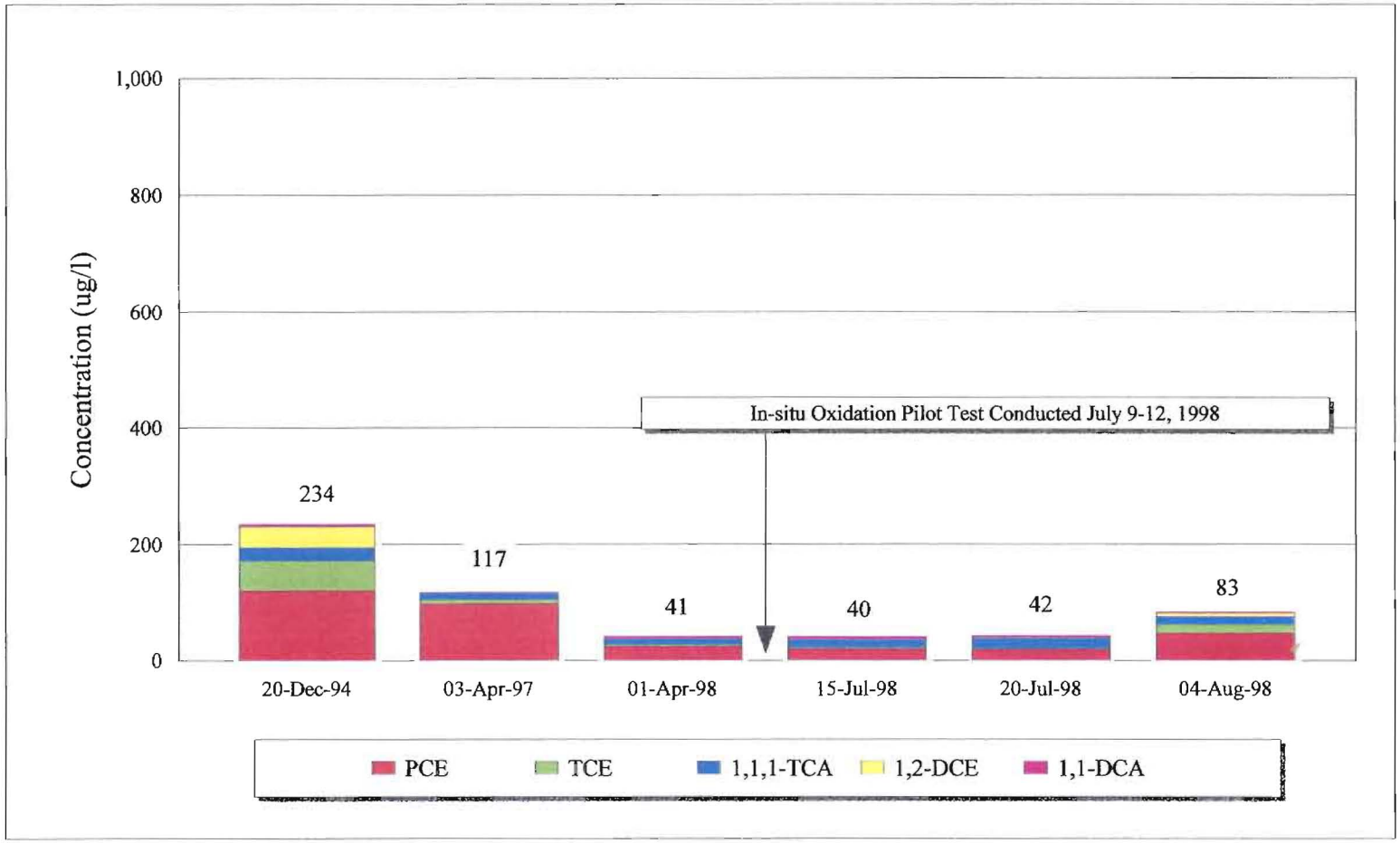
Project No.: U0063-001-01-00

Date	Time	Initials	DTW (feet)	pH (su)	Cond (mS/cm)	Turbidity (NTU)	DO (mg/l)	Temp (°C)	ORP (mV)	H202 (mg/l)
07/08/98	09:49	JD	44.28	5.93	0.147	3	1.92	15.4	159	0
07/09/98	09:07	JD	44.35	---	---	---	---	---	---	---
07/09/98	14:56	JB	44.17	---	---	---	---	---	---	---
07/13/98	11:15	AS/JD/DE	44.38	6.18	0.204	90	19.99	16.2	347	0

APPENDIX C
HISTORICAL VOC BAR GRAPHS

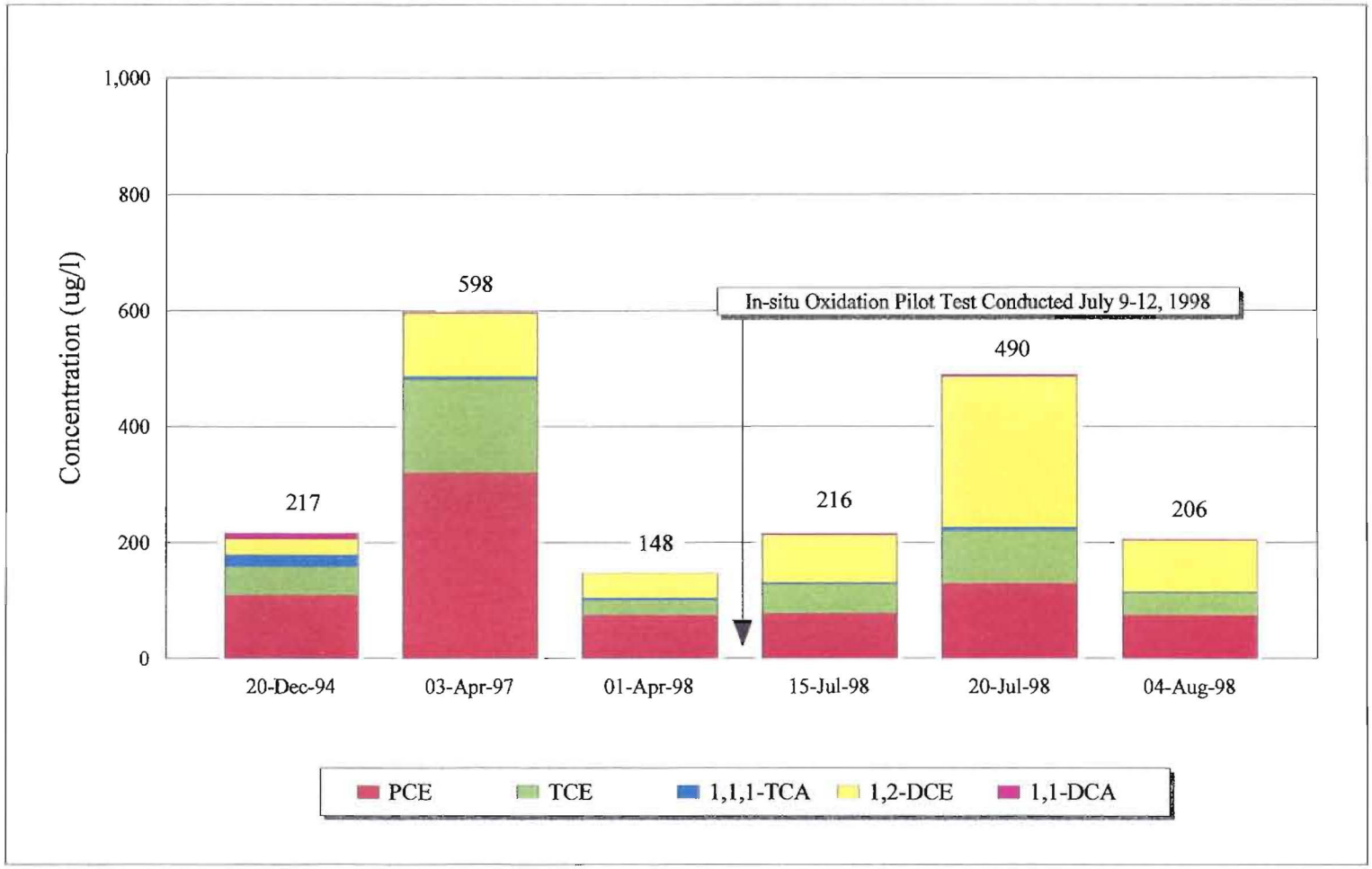
Well MW-2

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
20-Dec-94	5	35	23	51	120	234
03-Apr-97	2	ND	11	7	97	117
01-Apr-98	5	ND	10	3	23	41
15-Jul-98	5	ND	14	2	19	40
20-Jul-98	4	1	17	2	18	42
04-Aug-98	2	6	14	15	46	83



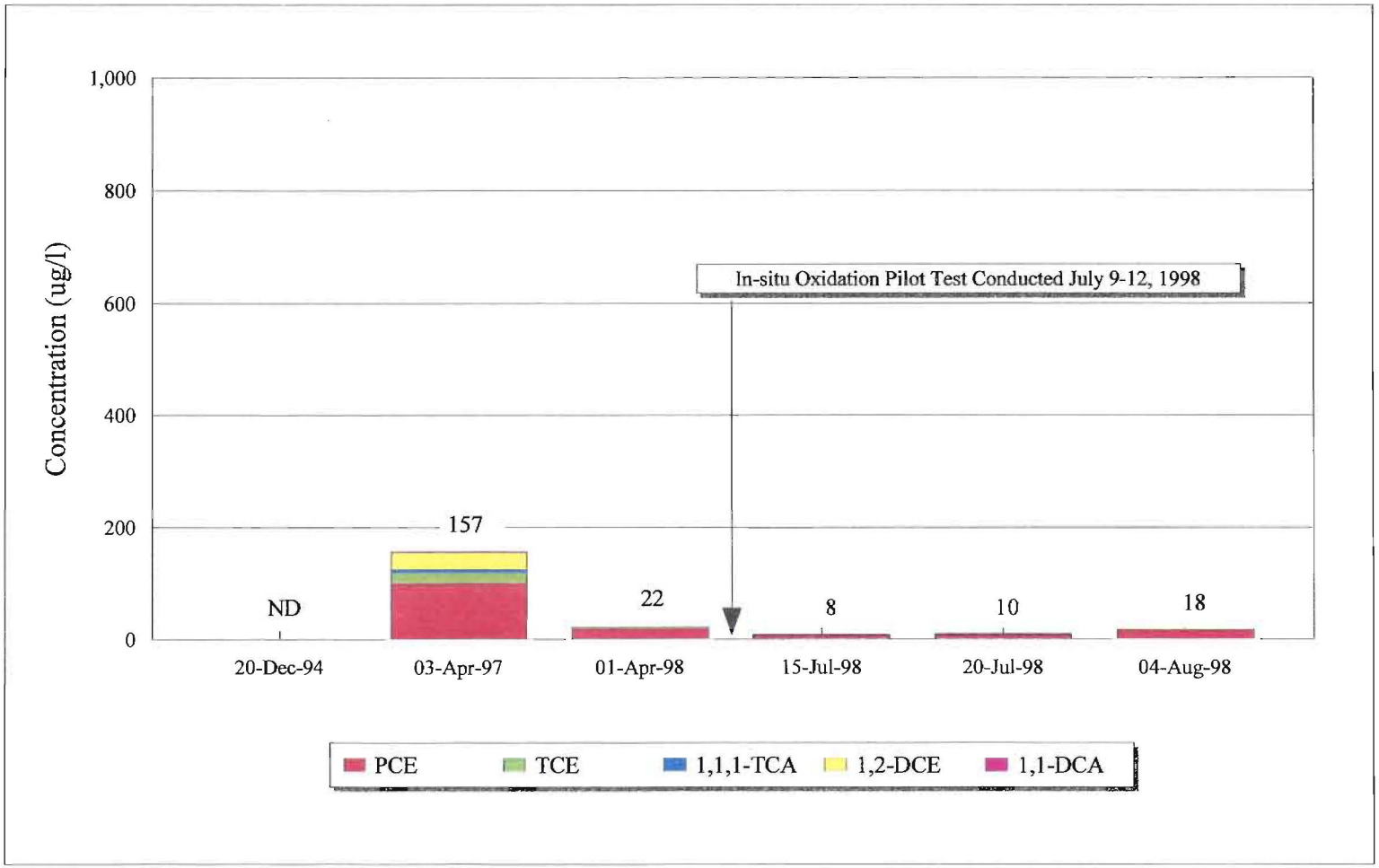
Well MW-3

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
20-Dec-94	10	28	21	48	110	217
03-Apr-97	2	110	6	160	320	598
01-Apr-98	ND	44	4	25	75	148
15-Jul-98	3	82	3	50	78	216
20-Jul-98	4	260	6	90	130	490
04-Aug-98	2	89	2	38	75	206



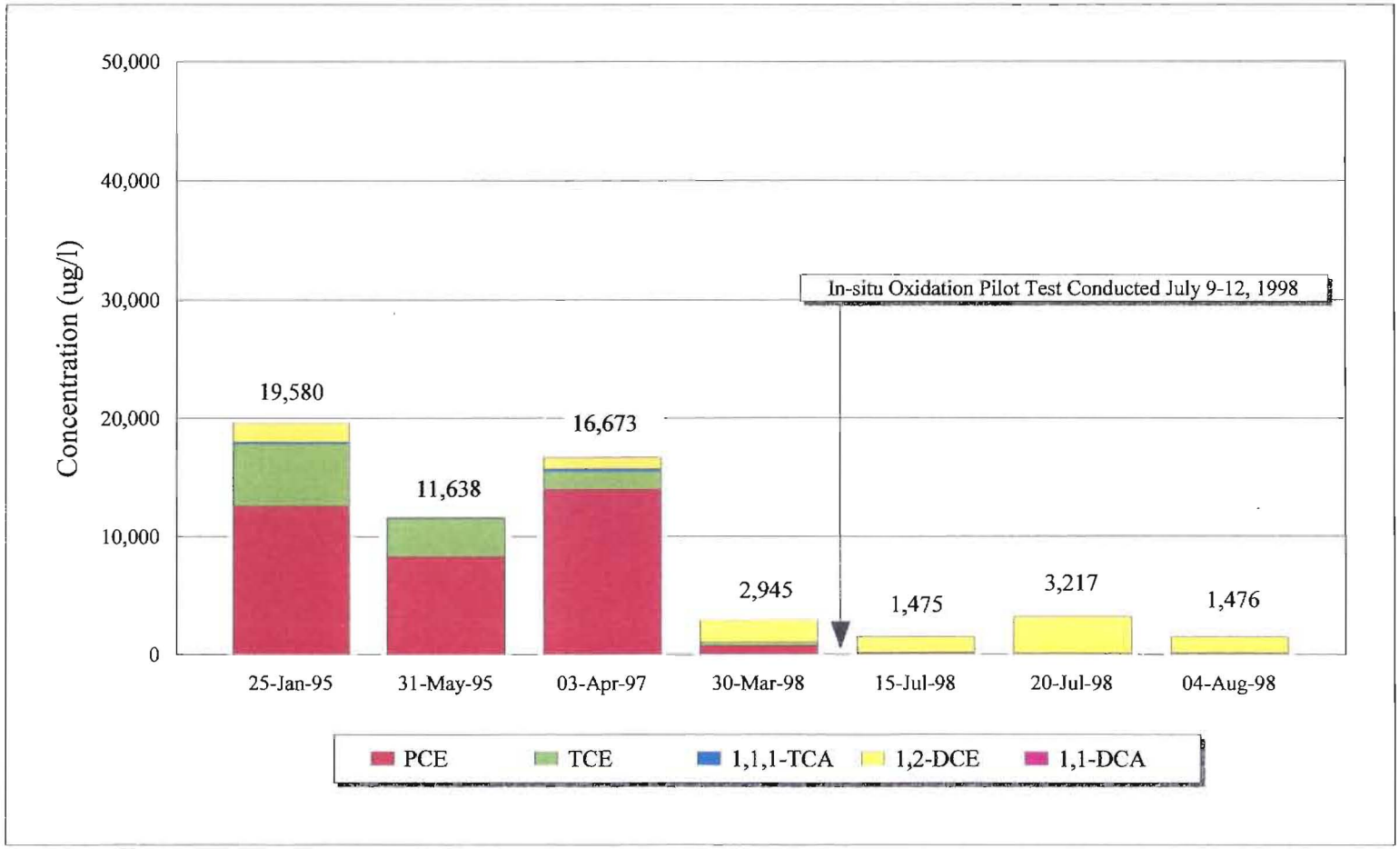
Well MW-4

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
20-Dec-94	ND	ND	ND	ND	ND	ND
03-Apr-97	2	30	6	19	100	157
01-Apr-98	ND	2	ND	2	18	22
15-Jul-98	ND	ND	ND	2	6	8
20-Jul-98	ND	1	ND	2	7	10
04-Aug-98	ND	2	ND	1	15	18



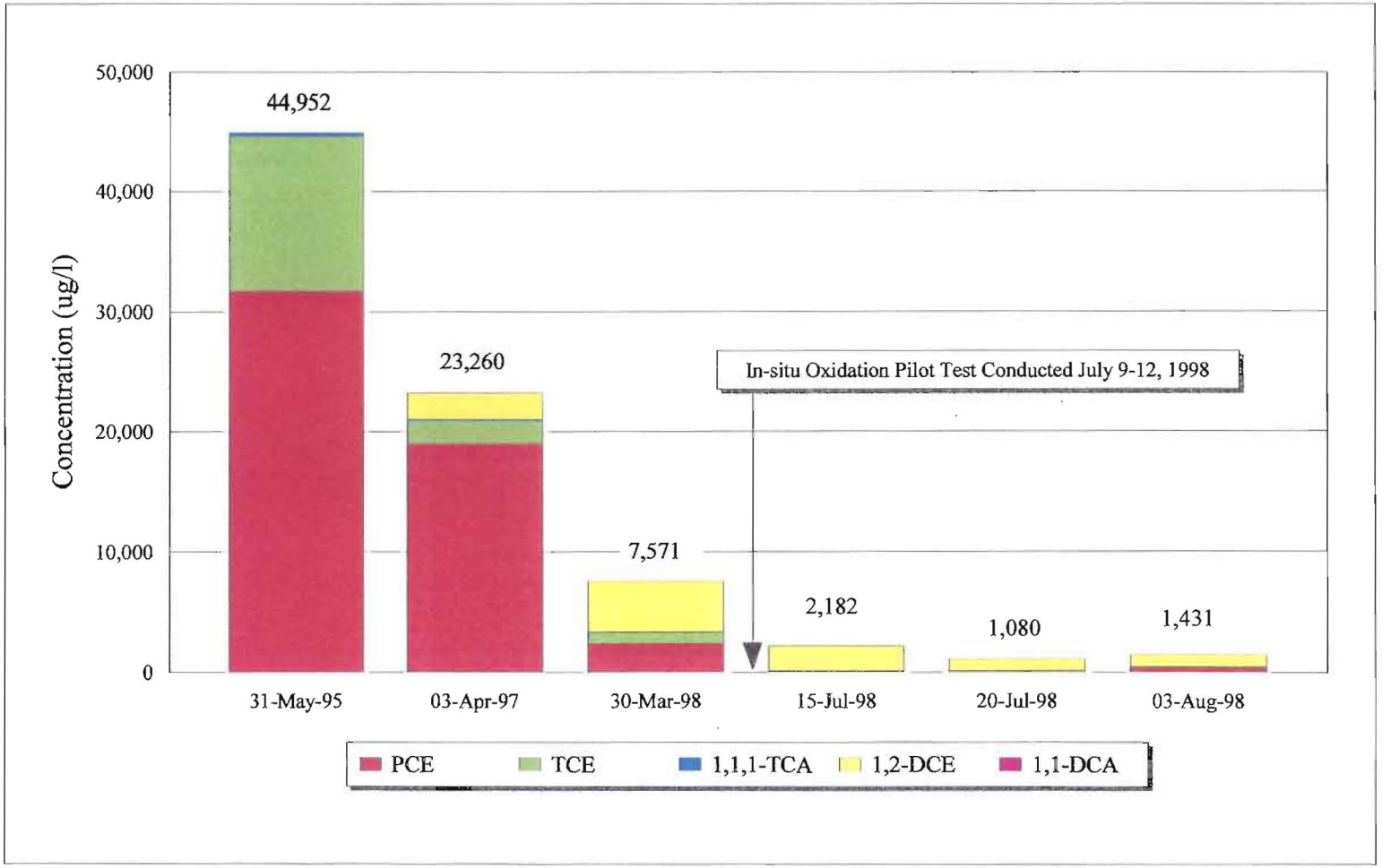
Well MW-7

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
25-Jan-95	ND	1,600	180	5,200	12,600	19,580
31-May-95	25	52	61	3,200	8,300	11,638
03-Apr-97	13	900	260	1,500	14,000	16,673
30-Mar-98	5	1,900	10	310	720	2,945
15-Jul-98	7	1,300	ND	72	96	1,475
20-Jul-98	14	3,100	ND	62	41	3,217
04-Aug-98	8	1,300	ND	110	58	1,476



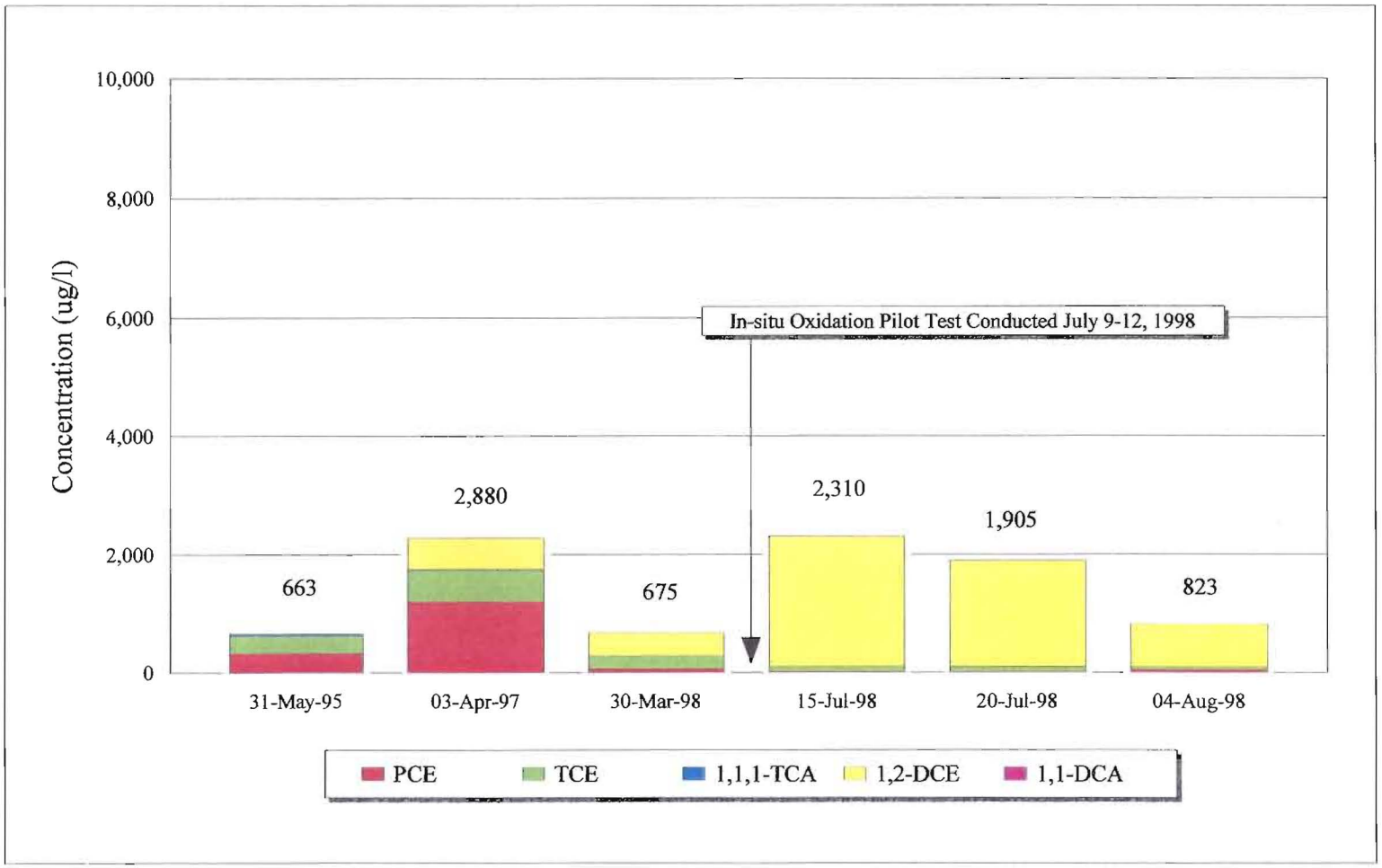
Well MW-8

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-May-95	17	65	270	12,900	31,700	44,952
03-Apr-97	10	2,200	150	1,900	19,000	23,260
30-Mar-98	8	4,200	53	910	2,400	7,571
15-Jul-98	9	2,100	1	44	28	2,182
20-Jul-98	5	960	2	70	43	1,080
03-Aug-98	6	980	8	87	350	1,431



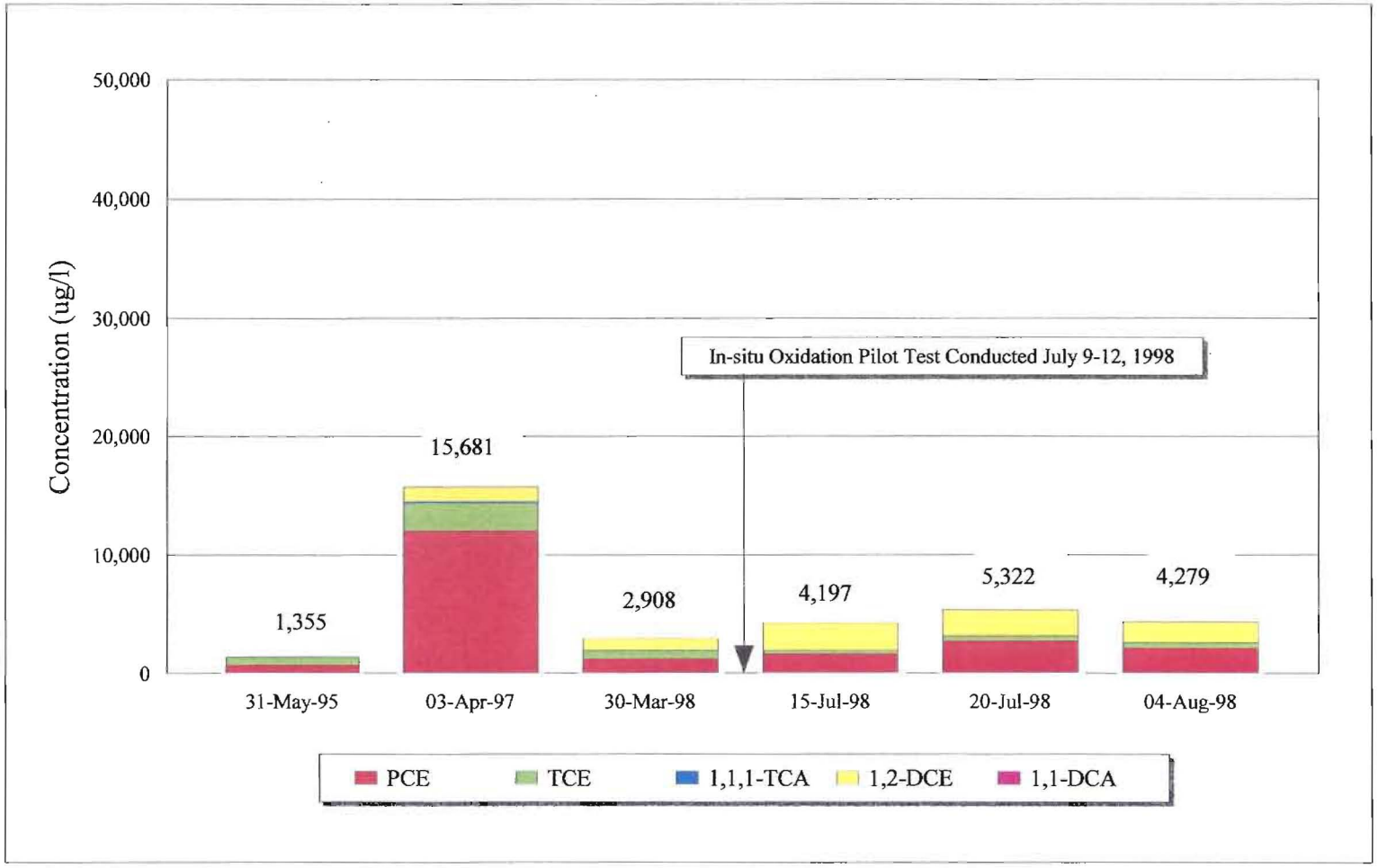
Well MW-9

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-May-95	8	14	21	290	330	663
03-Apr-97	7	520	13	540	1,200	2,280
30-Mar-98	ND	390	ND	220	65	675
15-Jul-98	8	2,200	2	83	17	2,310
20-Jul-98	9	1,800	2	82	12	1,905
04-Aug-98	ND	730	ND	48	45	823



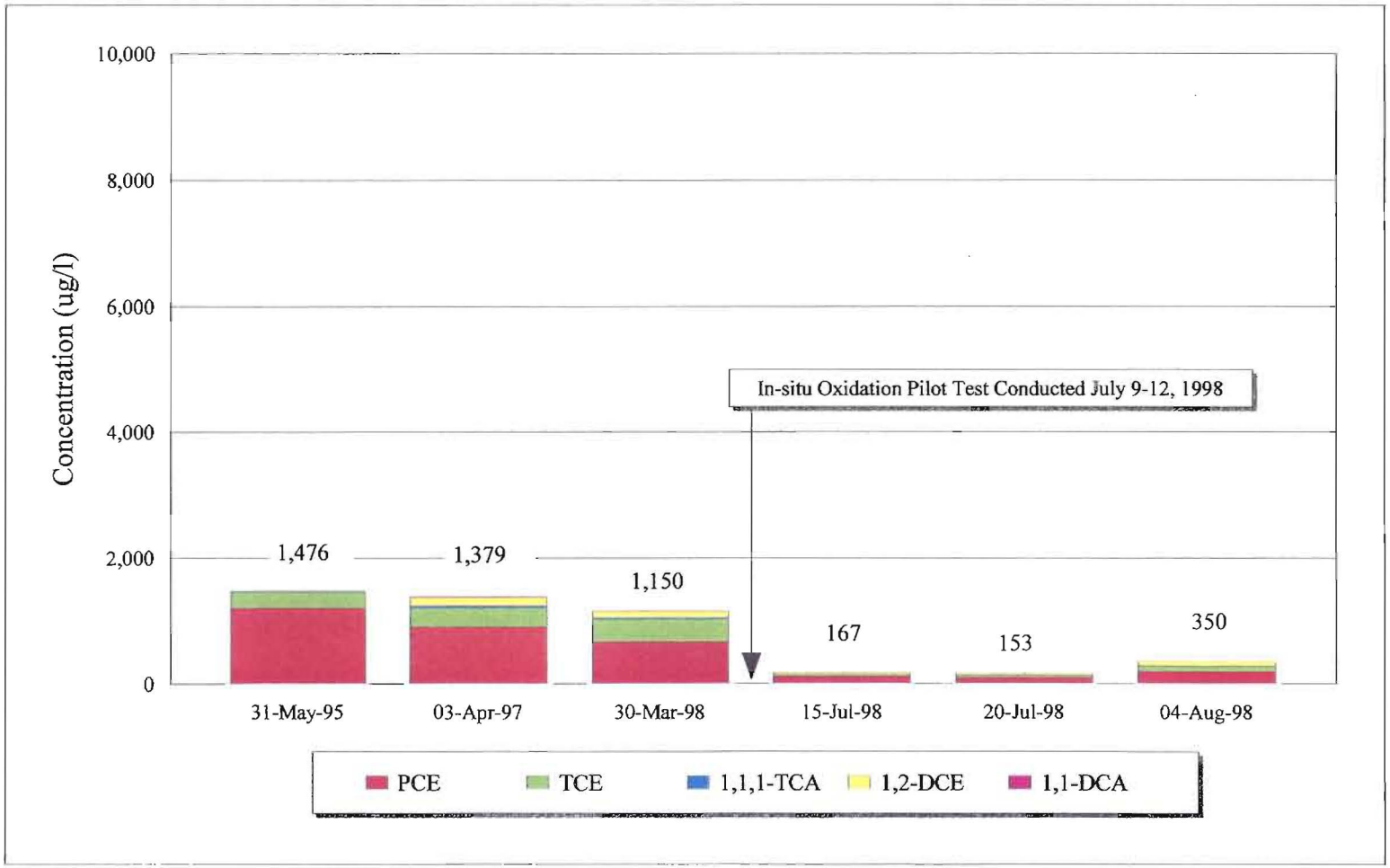
Well MW-10

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-May-95	9	12	24	670	640	1,355
03-Apr-97	11	1,200	170	2,300	12,000	15,681
30-Mar-98	2	1,000	16	690	1,200	2,908
15-Jul-98	7	2,300	20	270	1,600	4,197
20-Jul-98	9	2,200	23	390	2,700	5,322
04-Aug-98	7	1,700	22	450	2,100	4,279



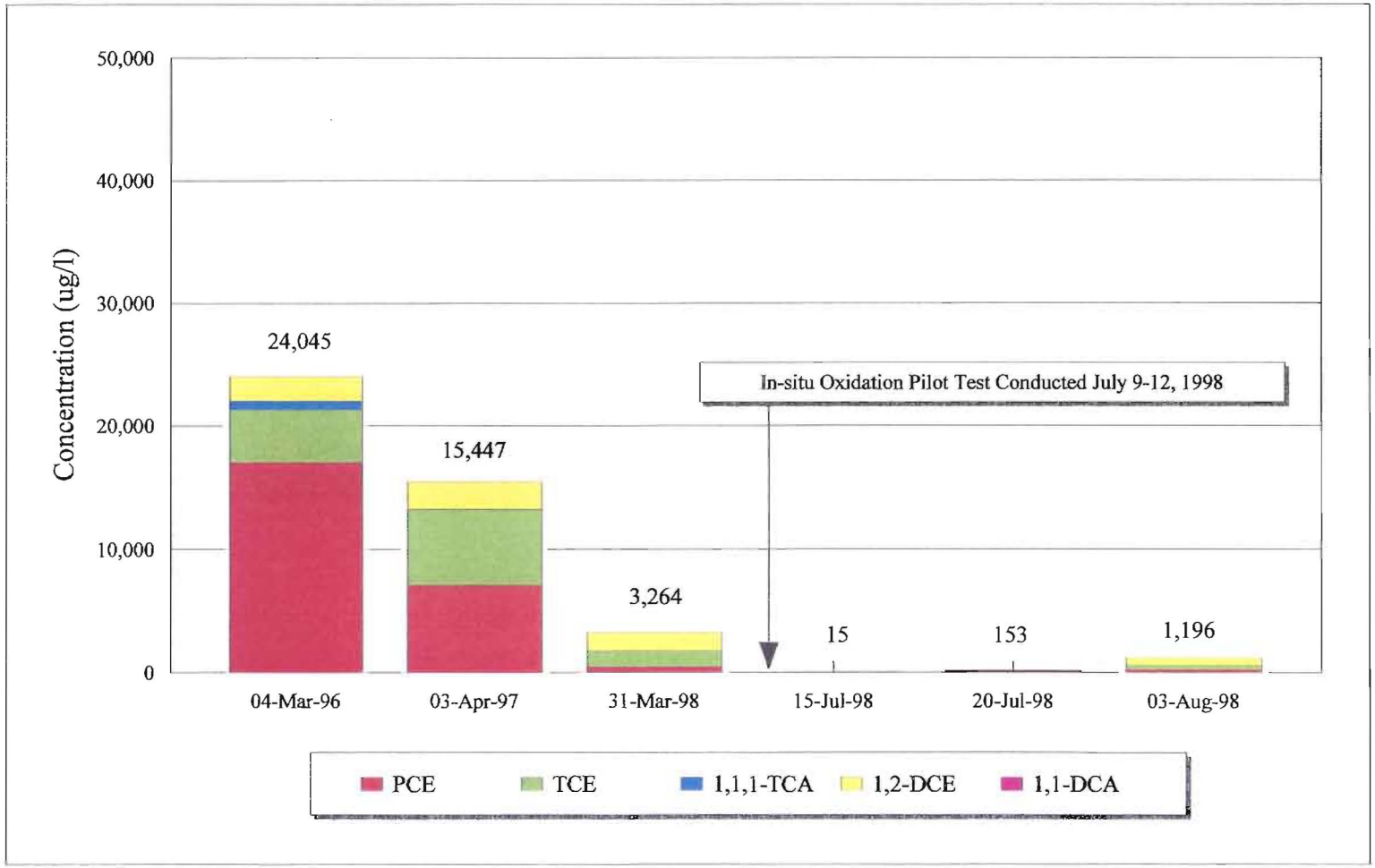
Well MW-11

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-May-95	ND	ND	16	260	1,200	1,476
03-Apr-97	9	130	40	300	900	1,379
30-Mar-98	5	100	25	360	660	1,150
15-Jul-98	ND	24	3	30	110	167
20-Jul-98	ND	29	3	31	90	153
04-Aug-98	1	68	6	85	190	350



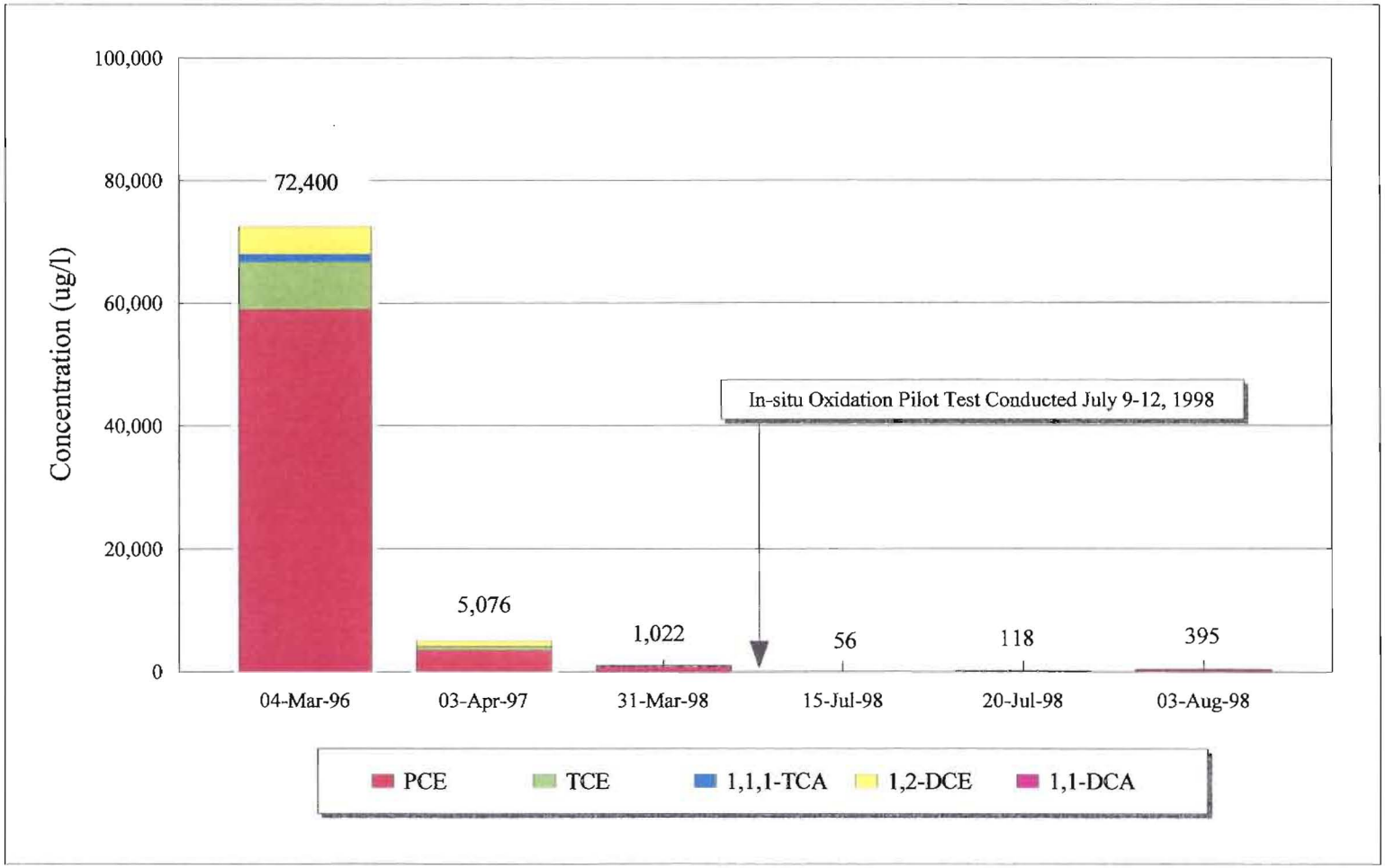
Well MW-12

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
04-Mar-96	ND	2,015	730	4,300	17,000	24,045
03-Apr-97	9	2,200	38	6,100	7,100	15,447
31-Mar-98	3	1,500	11	1,300	450	3,264
15-Jul-98	ND	4	ND	4	7	15
20-Jul-98	ND	29	3	31	90	153
03-Aug-98	3	610	3	350	230	1,196



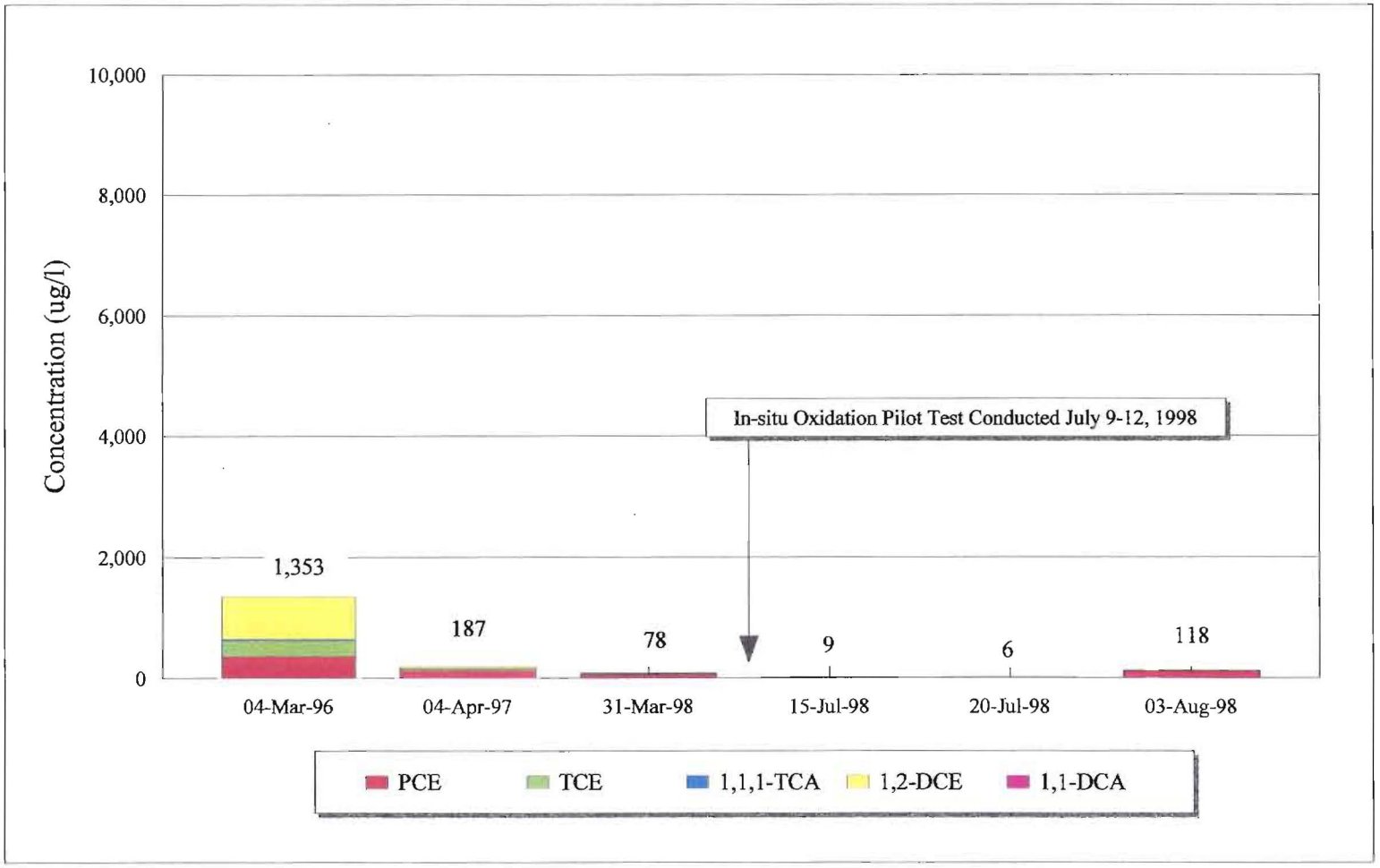
Well MW-13

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
04-Mar-96	ND	4,500	1,300	7,600	59,000	72,400
03-Apr-97	7	950	29	590	3,500	5,076
31-Mar-98	ND	78	14	130	800	1,022
15-Jul-98	ND	3	2	4	47	56
20-Jul-98	ND	4	1	3	110	118
03-Aug-98	ND	23	8	94	270	395



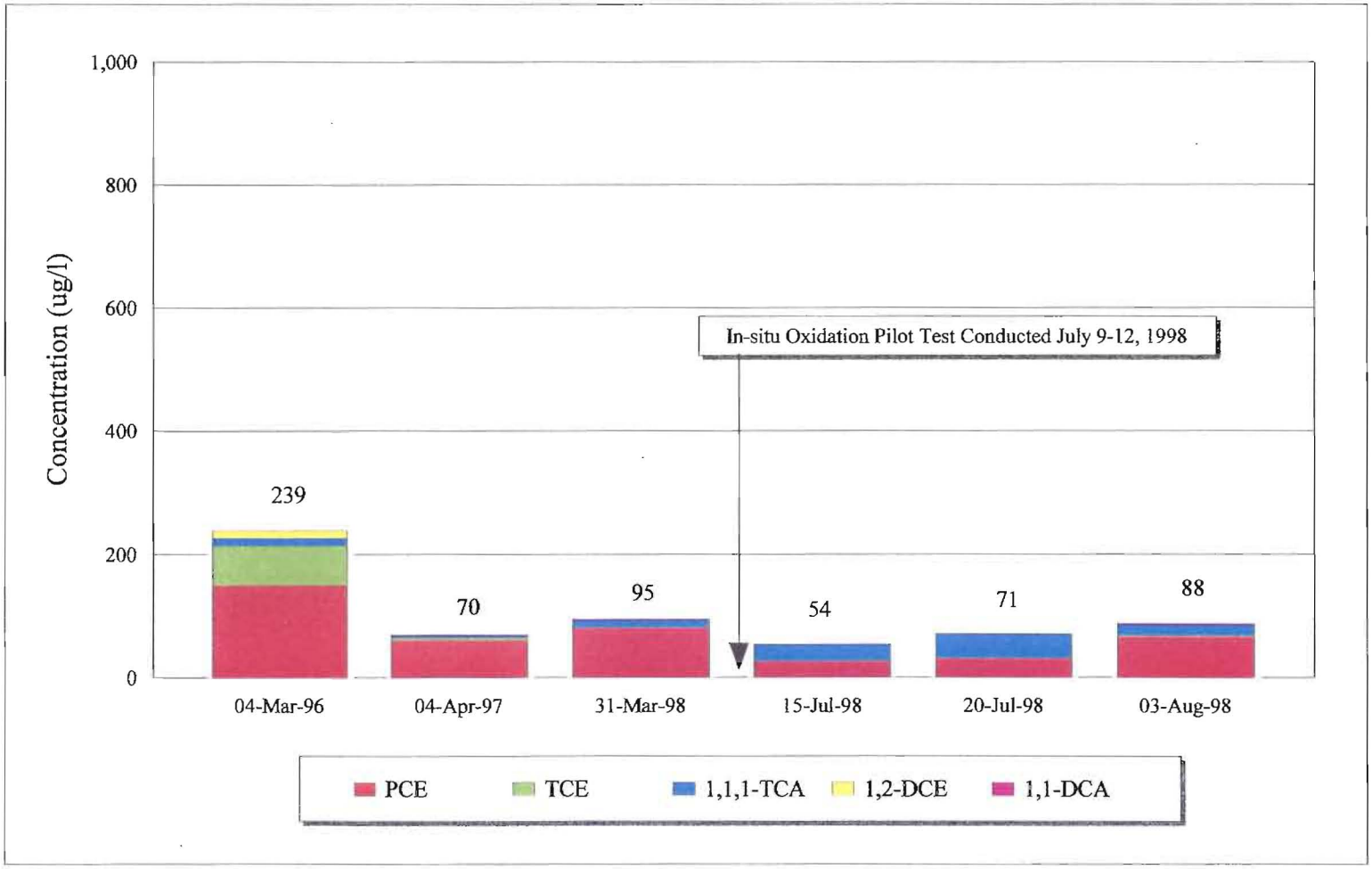
Well MW-14

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
04-Mar-96	ND	705	28	260	360	1,353
04-Apr-97	1	34	6	26	120	187
31-Mar-98	ND	8	3	20	47	78
15-Jul-98	ND	ND	ND	ND	9	9
20-Jul-98	ND	ND	ND	ND	6	6
03-Aug-98	ND	3	1	4	110	118



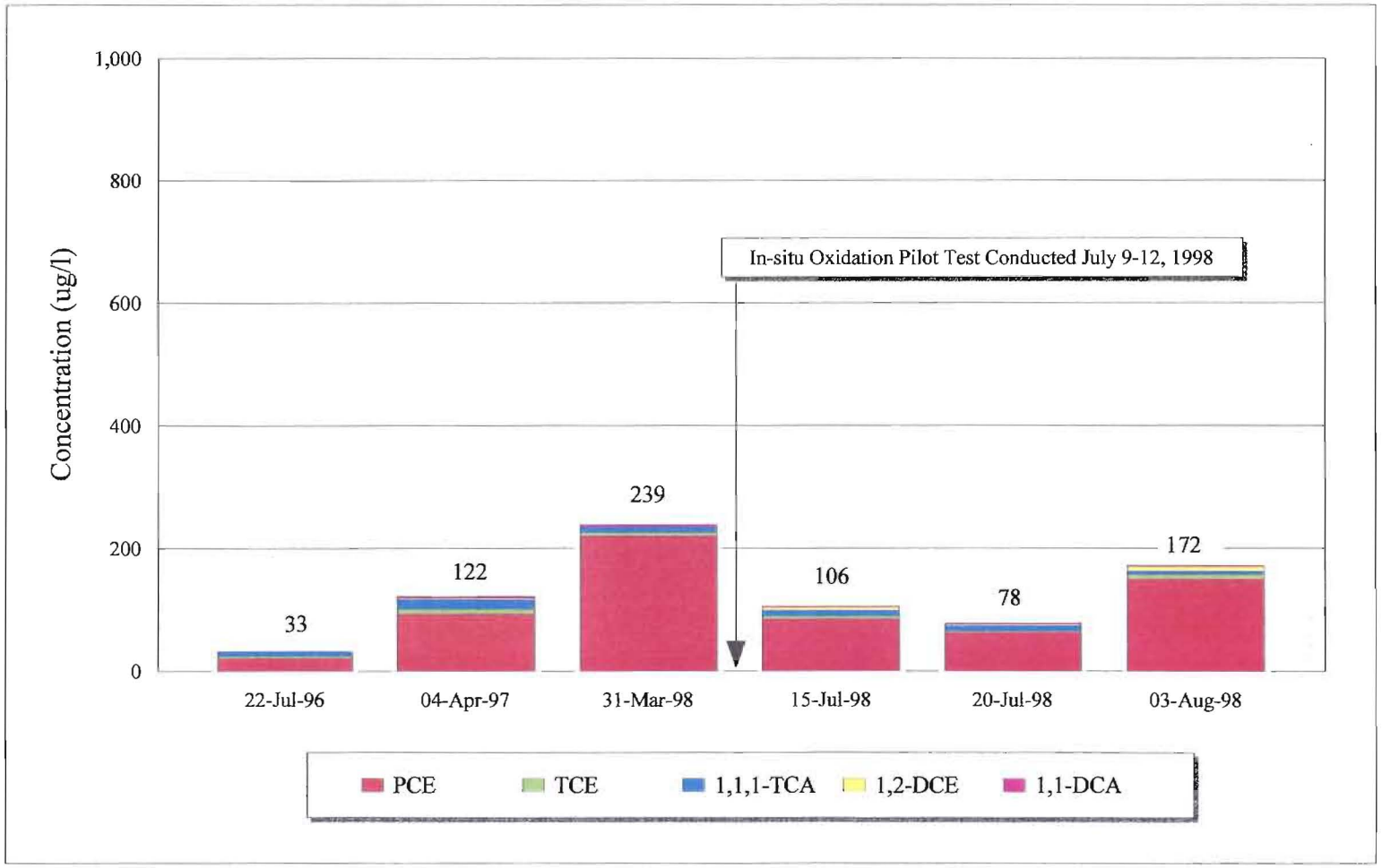
Well MW-15

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
04-Mar-96	ND	13	13	63	150	239
04-Apr-97	2	ND	4	4	60	70
31-Mar-98	2	ND	12	ND	81	95
15-Jul-98	1	ND	27	ND	26	54
20-Jul-98	1	ND	39	ND	31	71
03-Aug-98	2	1	17	2	66	88



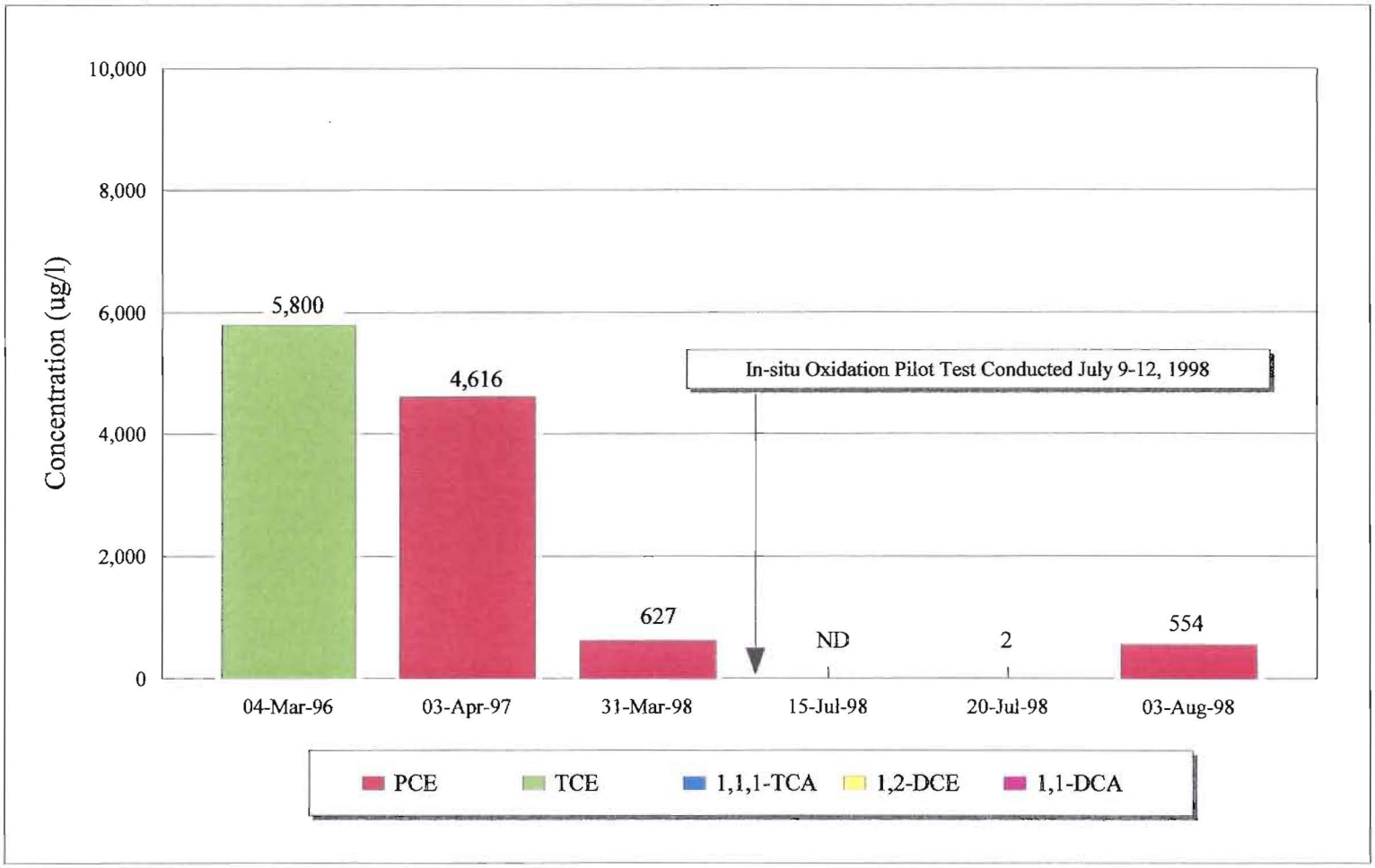
Well MW-17

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
22-Jul-96	ND	ND	9	3	21	33
04-Apr-97	3	2	16	8	93	122
31-Mar-98	4	ND	10	5	220	239
15-Jul-98	2	5	10	4	85	106
20-Jul-98	2	2	9	2	63	78
03-Aug-98	2	7	6	7	150	172



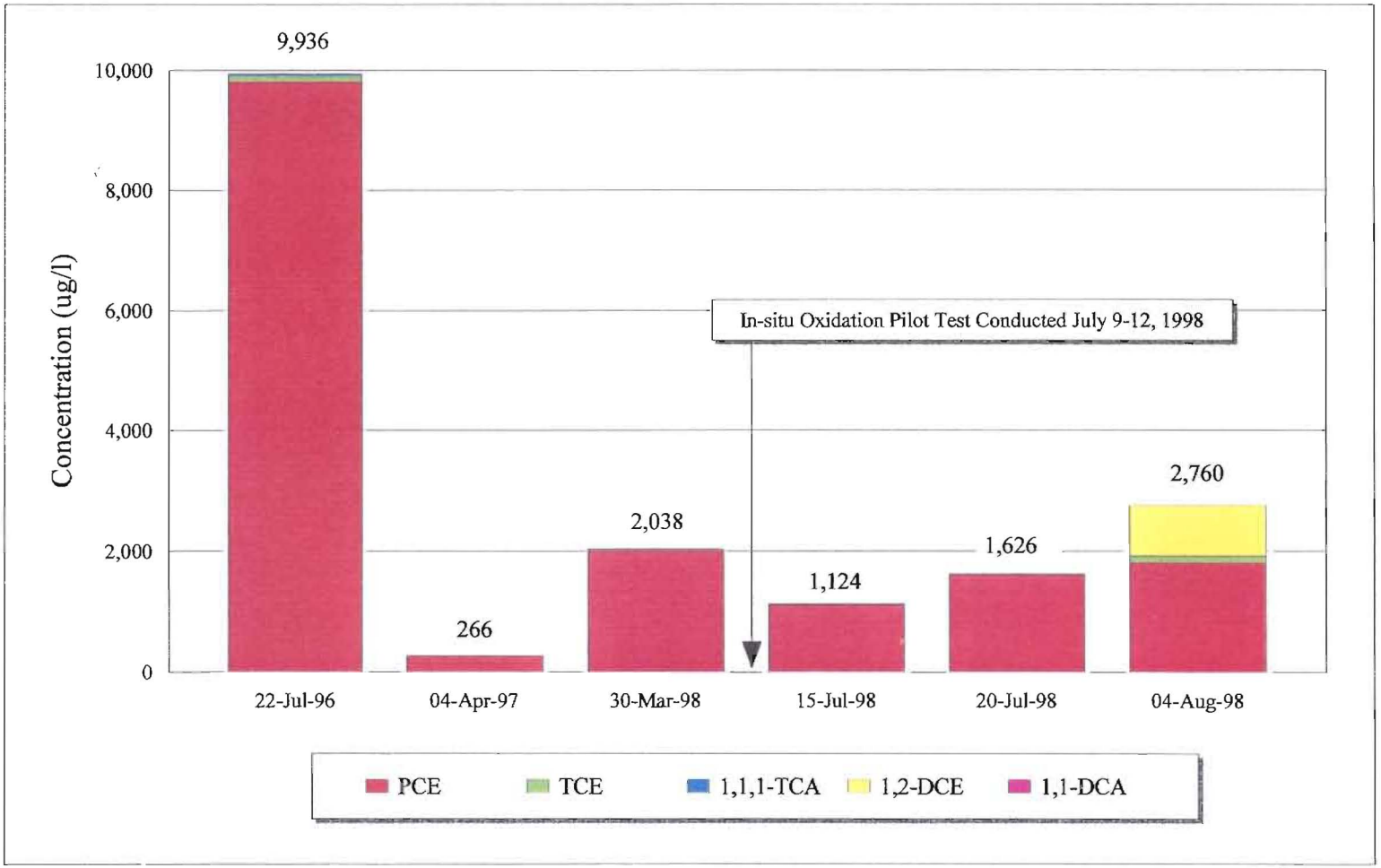
Well MW-13D

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
04-Mar-96	ND	ND	ND	5,800	ND	5,800
03-Apr-97	ND	6	ND	10	4,600	4,616
31-Mar-98	ND	ND	ND	7	620	627
15-Jul-98	ND	ND	ND	ND	ND	ND
20-Jul-98	ND	ND	ND	ND	2	2
03-Aug-98	ND	ND	ND	4	550	554



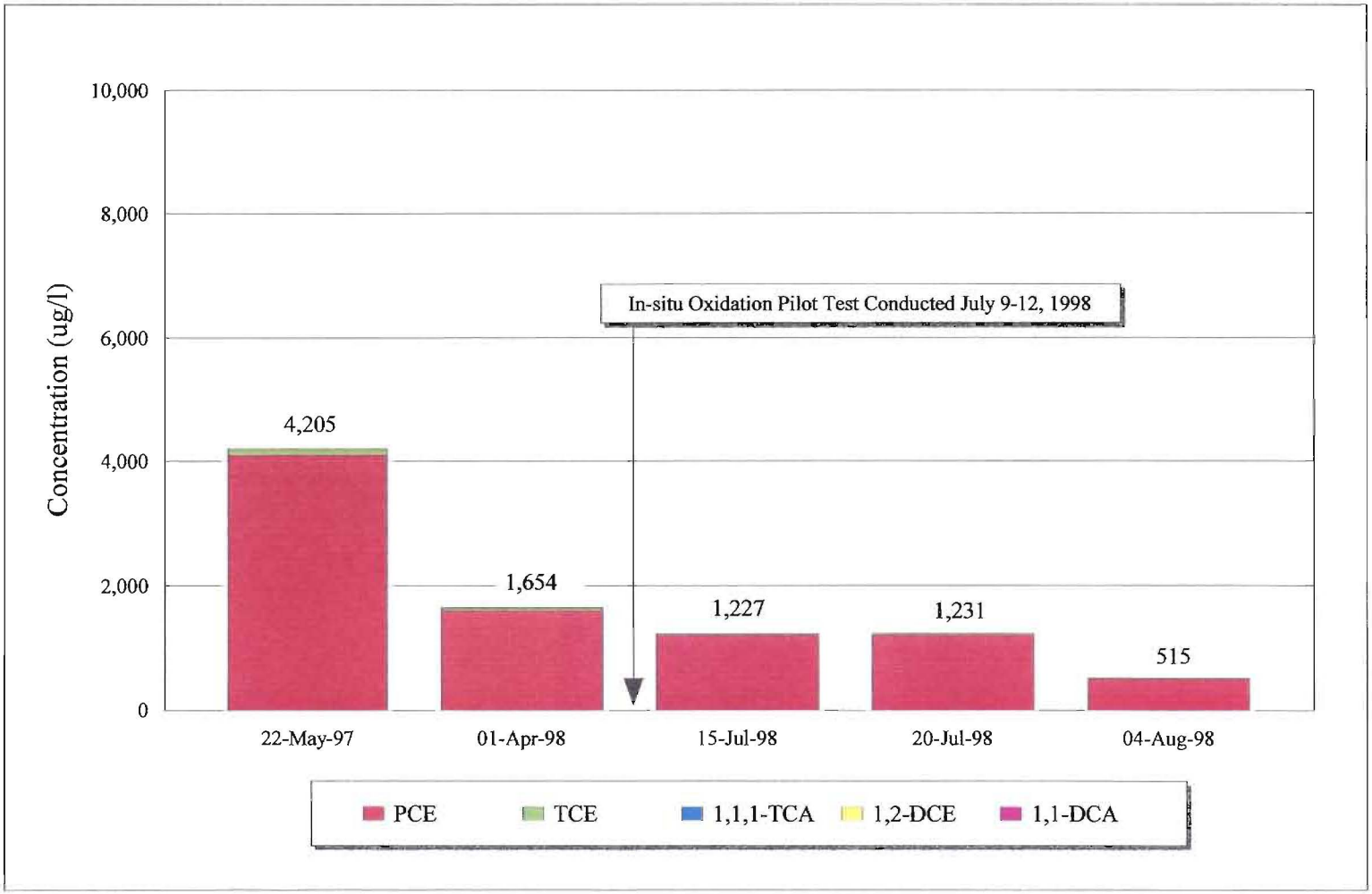
Well MW-16D

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
22-Jul-96	6	ND	30	100	9,800	9,936
04-Apr-97	ND	5	ND	1	260	266
30-Mar-98	ND	13	2	23	2,000	2,038
15-Jul-98	ND	8	1	15	1,100	1,124
20-Jul-98	ND	9	1	16	1,600	1,626
04-Aug-98	3	840	7	110	1,800	2,760



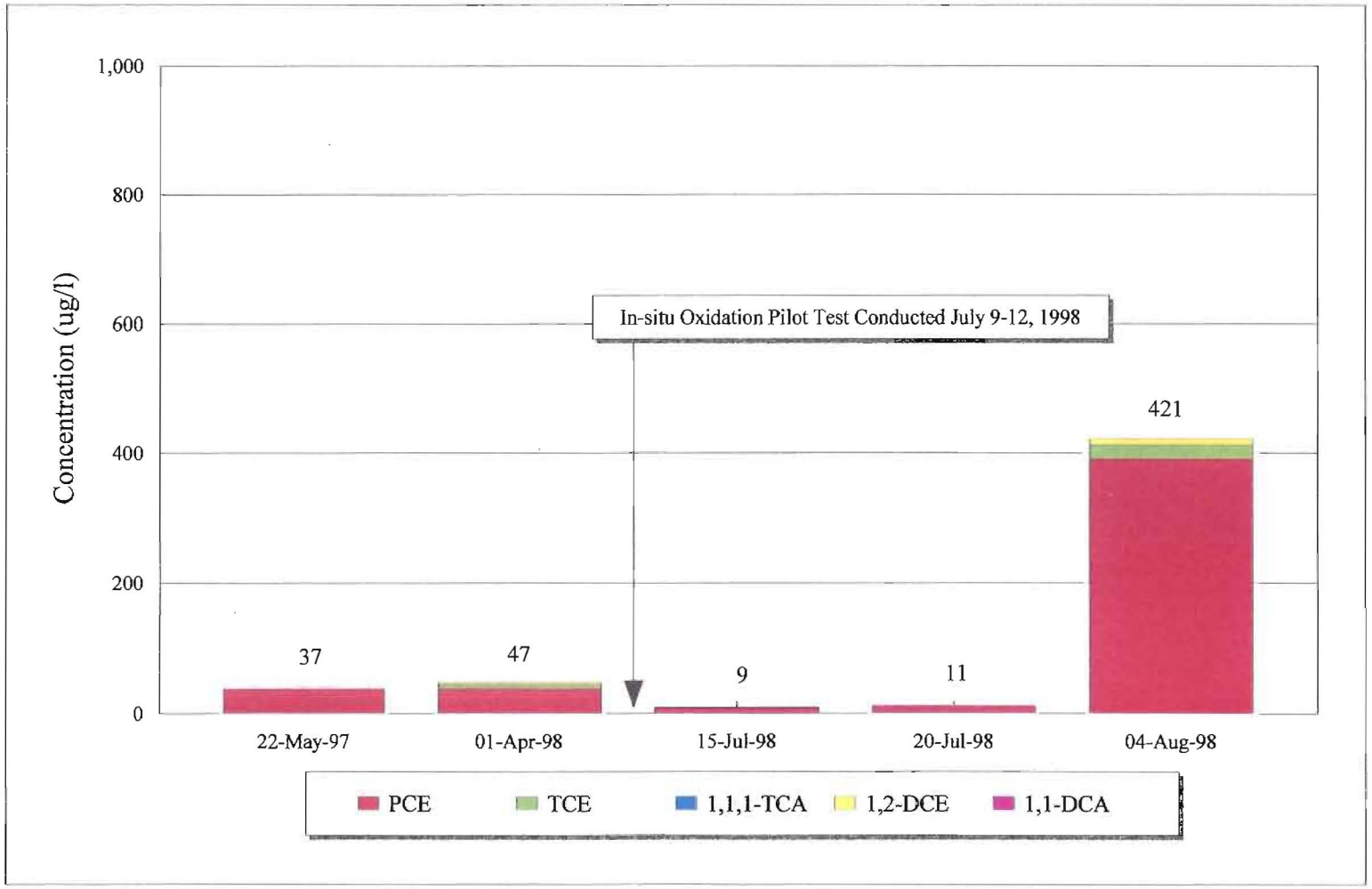
Well MW-18D

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
22-May-97	ND	16	ND	89	4,100	4,205
01-Apr-98	ND	13	2	39	1,600	1,654
15-Jul-98	ND	7	ND	20	1,200	1,227
20-Jul-98	ND	8	1	22	1,200	1,231
04-Aug-98	ND	5	ND	10	500	515



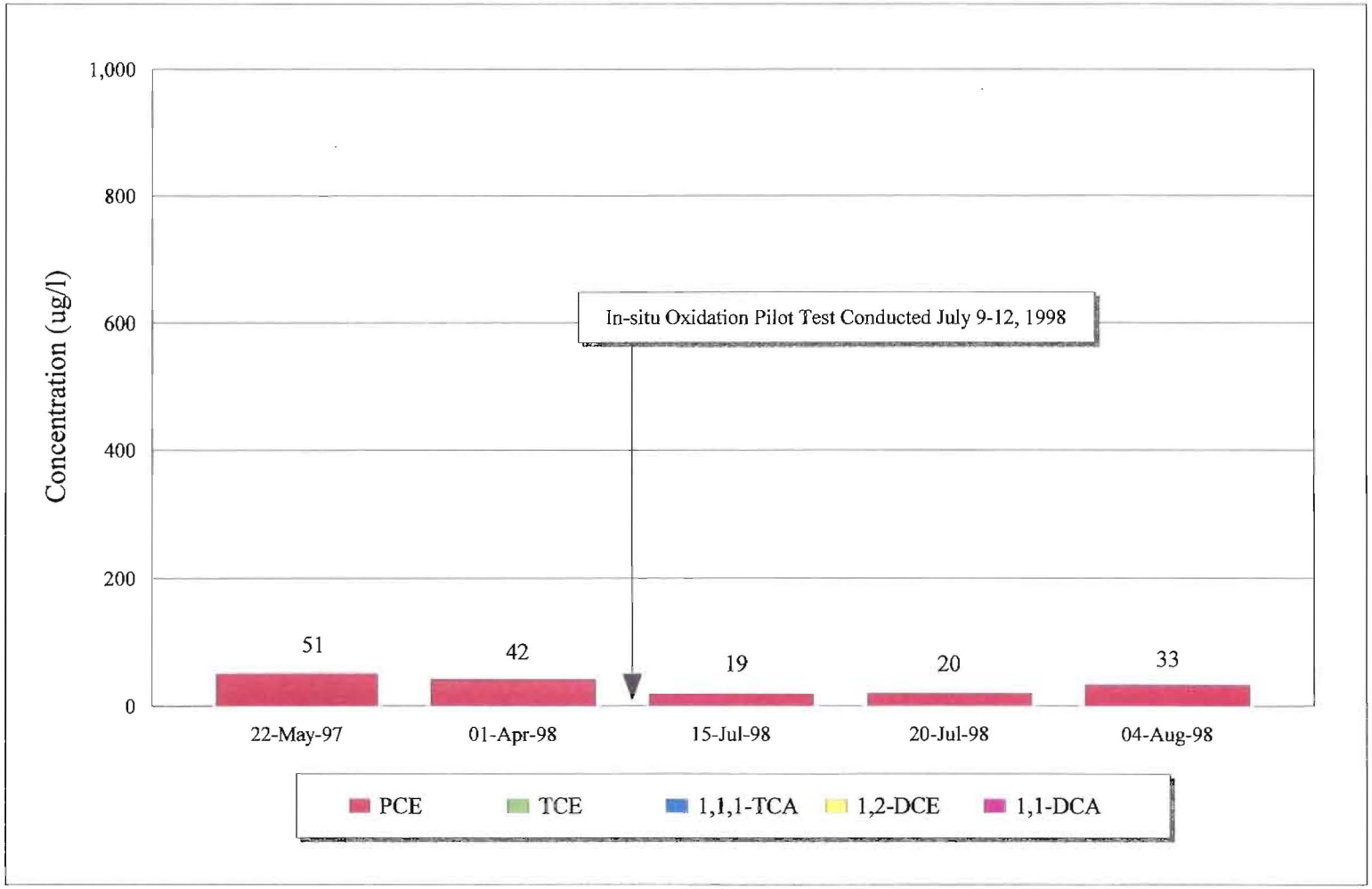
Well MW-19D

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
22-May-97	ND	ND	ND	ND	37	37
01-Apr-98	ND	3	ND	7	37	47
15-Jul-98	ND	ND	ND	1	8	9
20-Jul-98	ND	ND	ND	ND	11	11
04-Aug-98	ND	9	ND	22	390	421



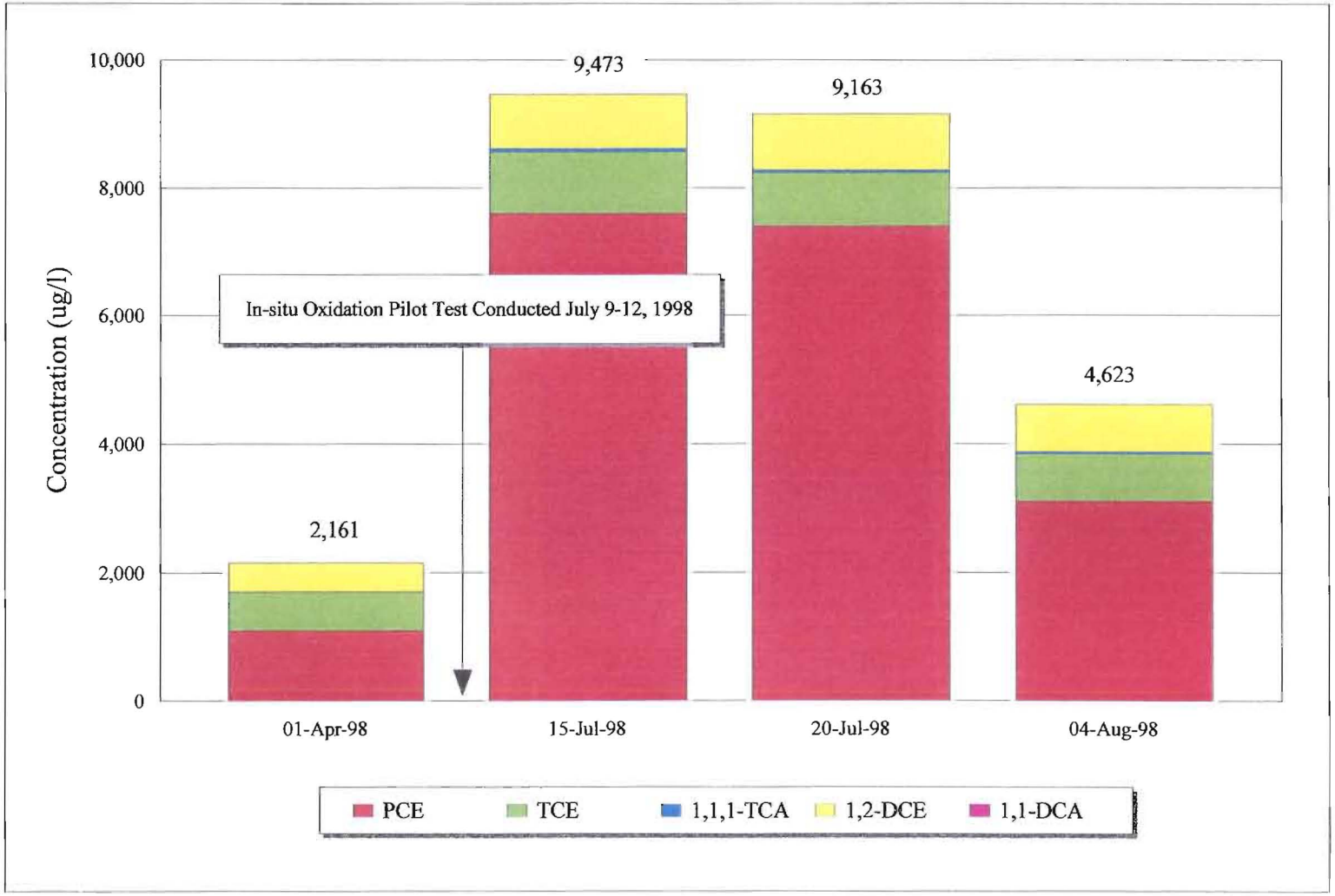
Well MW-20D

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
22-May-97	ND	ND	ND	ND	51	51
01-Apr-98	ND	ND	ND	1	41	42
15-Jul-98	ND	ND	ND	ND	19	19
20-Jul-98	ND	ND	ND	ND	20	20
04-Aug-98	ND	ND	1	ND	32	33



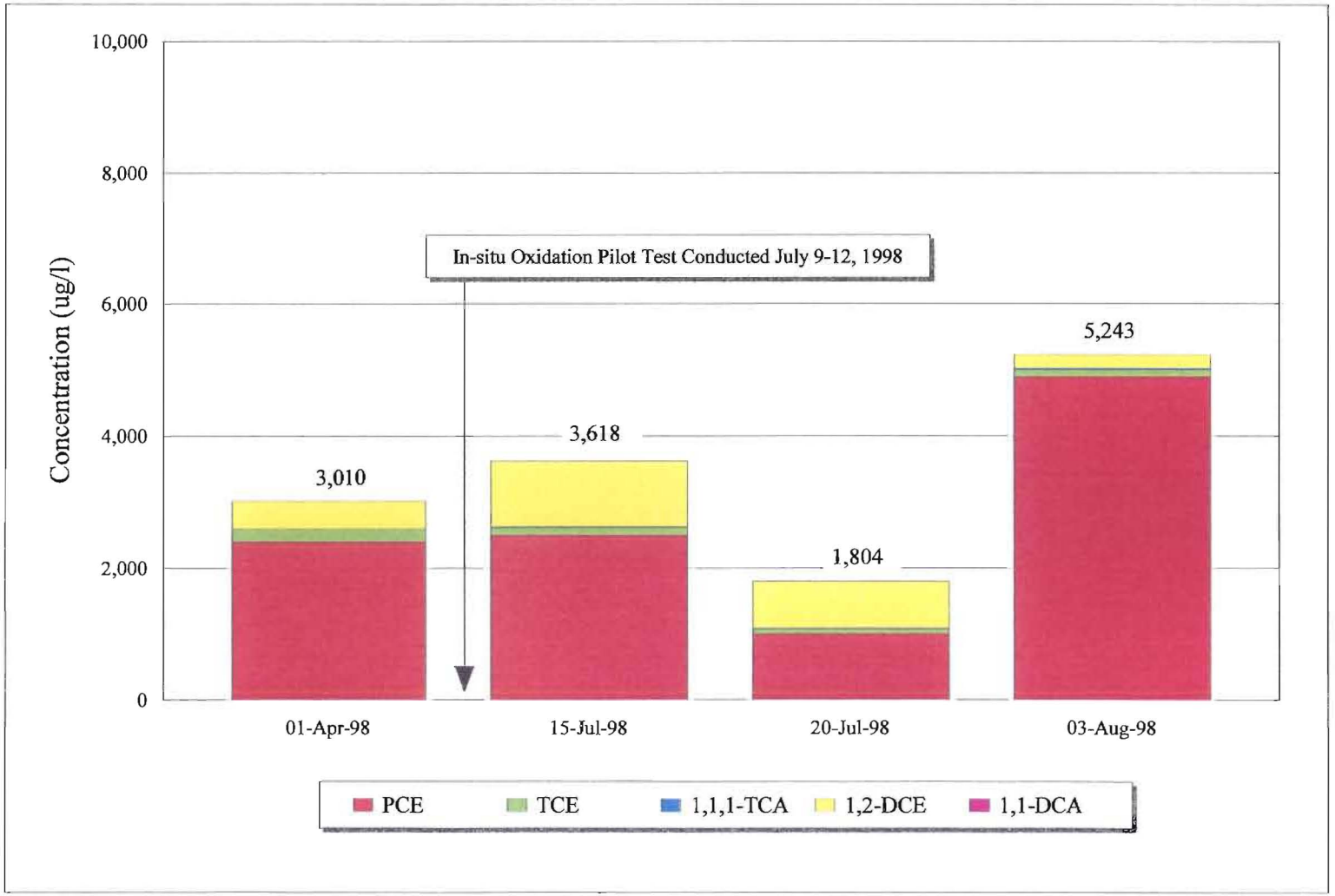
Well MW-21D

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
01-Apr-98	2	450	9	600	1,100	2,161
15-Jul-98	3	850	60	960	7,600	9,473
20-Jul-98	3	870	50	840	7,400	9,163
04-Aug-98	3	740	40	740	3,100	4,623



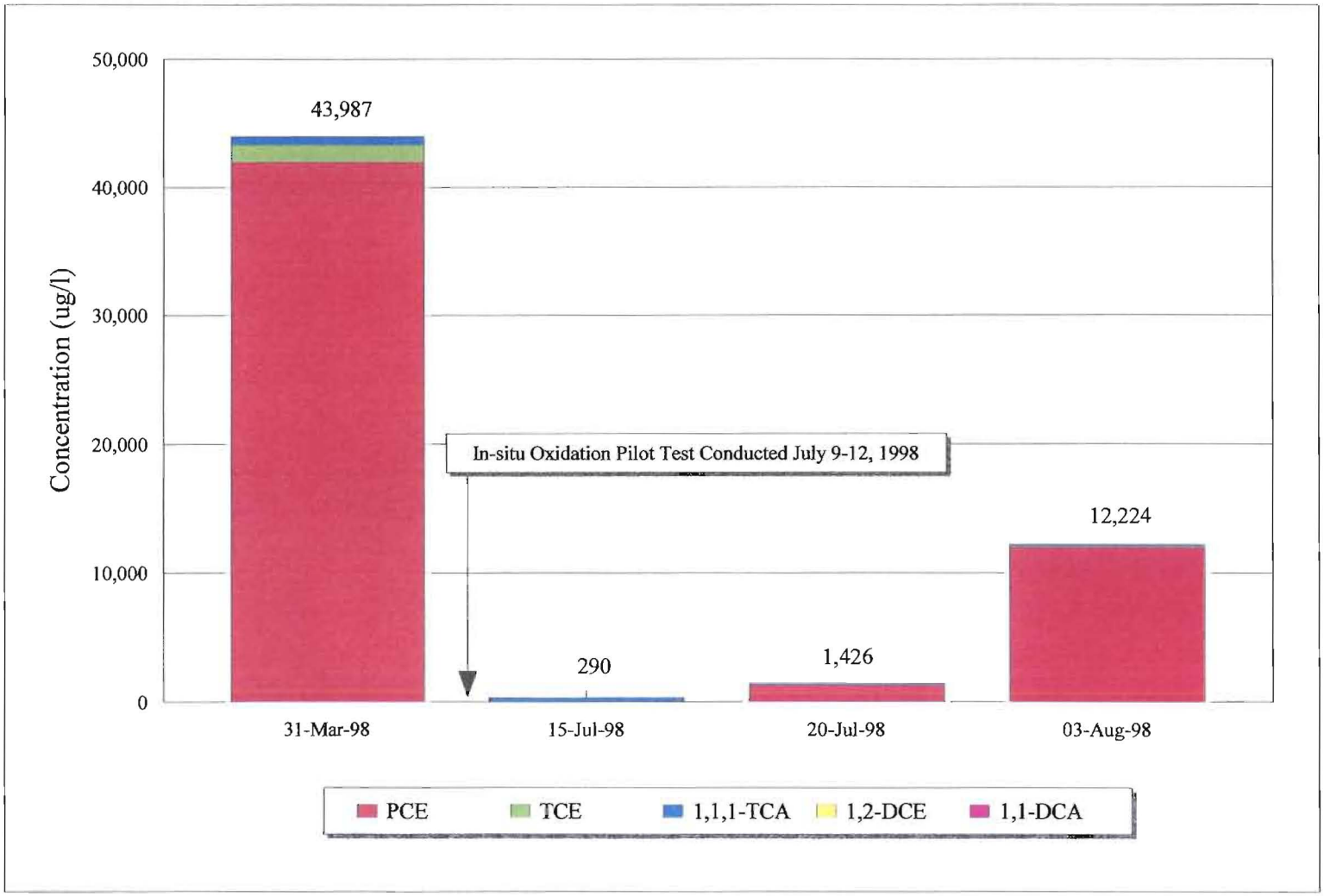
Well MW-23

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
01-Apr-98	ND	410	ND	200	2,400	3,010
15-Jul-98	4	990	14	110	2,500	3,618
20-Jul-98	5	710	14	75	1,000	1,804
03-Aug-98	2	210	21	110	4,900	5,243



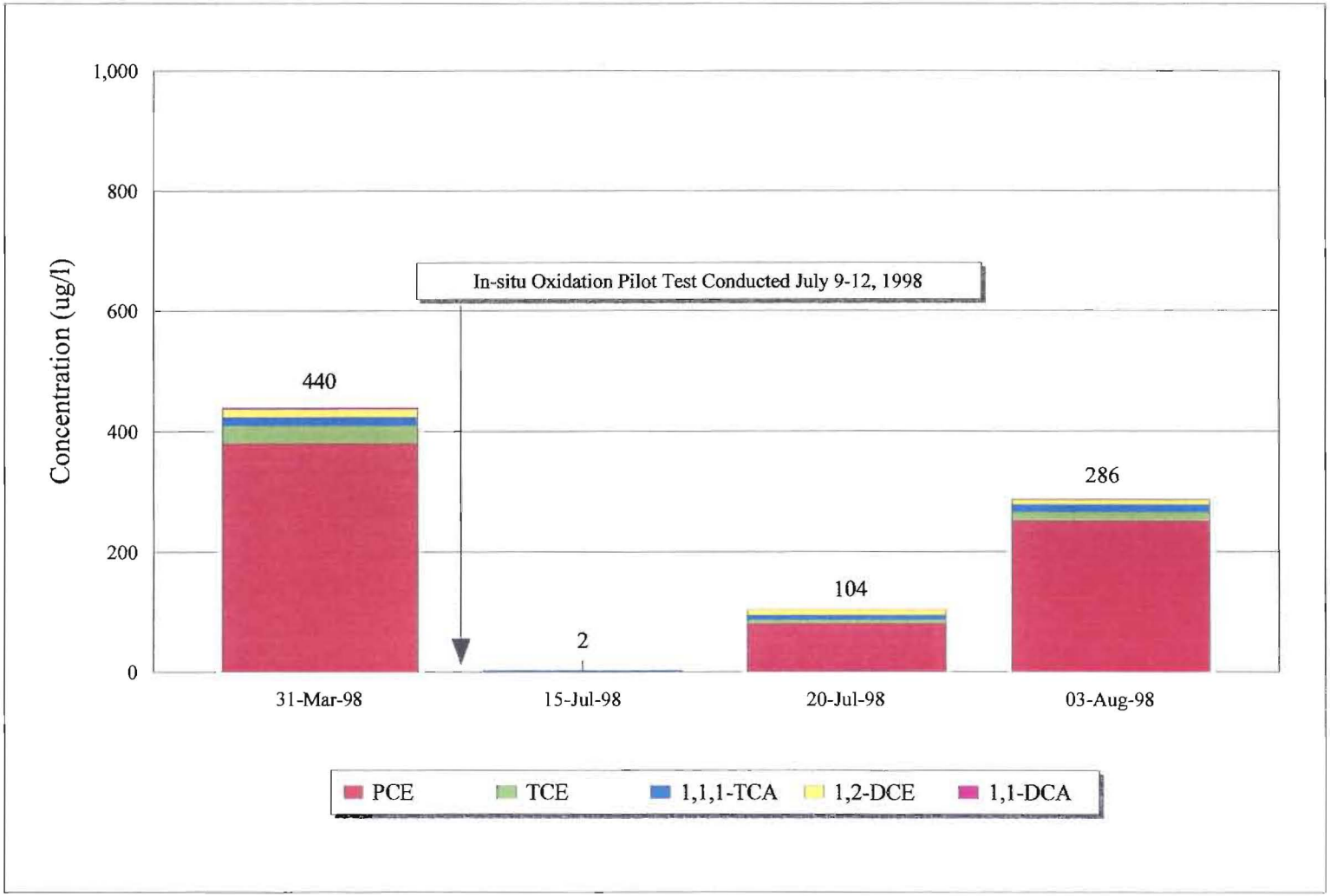
Well IW-1

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	37	30	620	1,300	42,000	43,987
15-Jul-98	ND	ND	280	ND	10	290
20-Jul-98	ND	ND	120	6	1,300	1,426
03-Aug-98	1	3	140	80	12,000	12,224



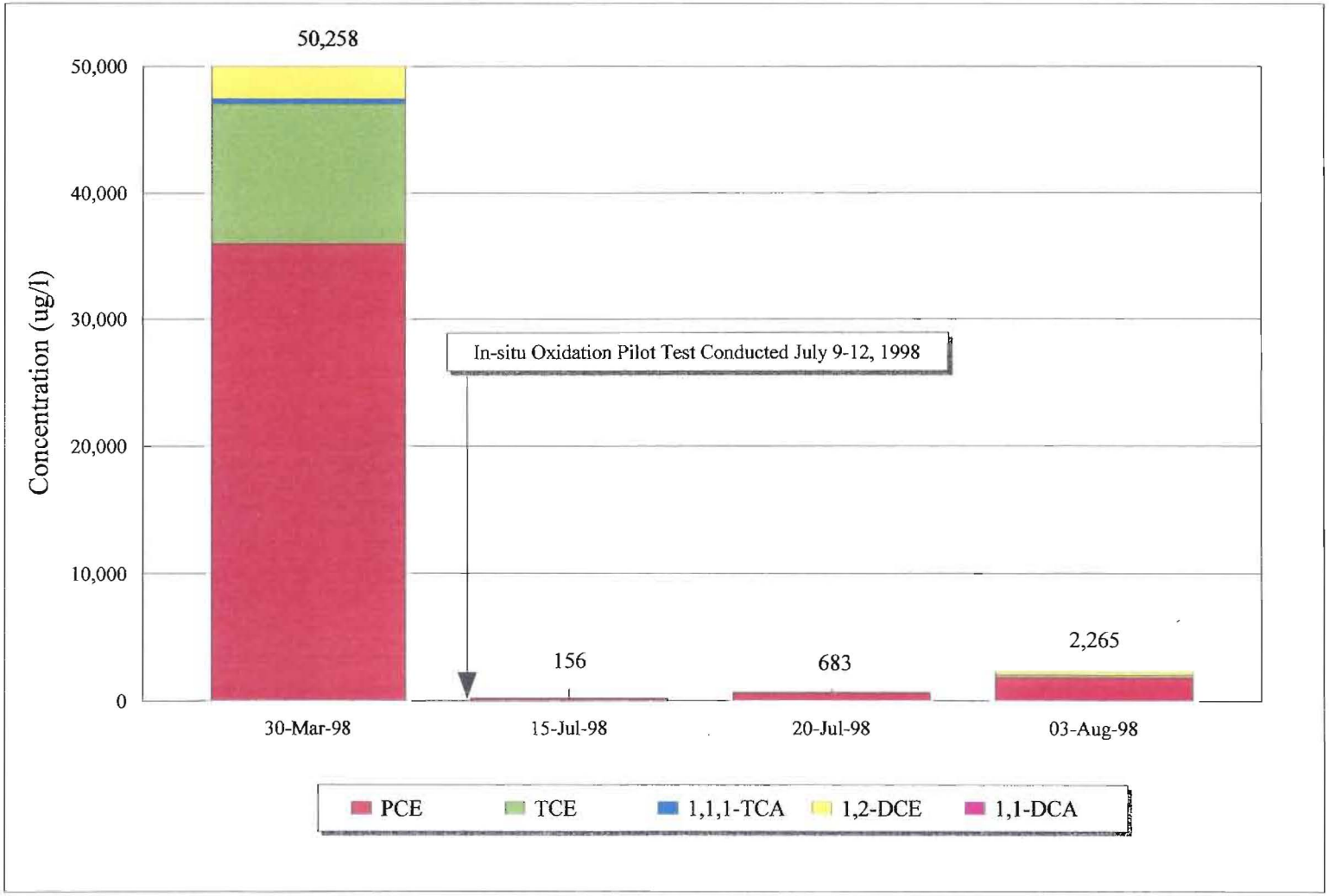
Well IW-2

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	3	13	15	29	380	440
15-Jul-98	ND	ND	2	ND	ND	2
20-Jul-98	ND	10	8	6	80	104
03-Aug-98	1	8	13	14	250	286



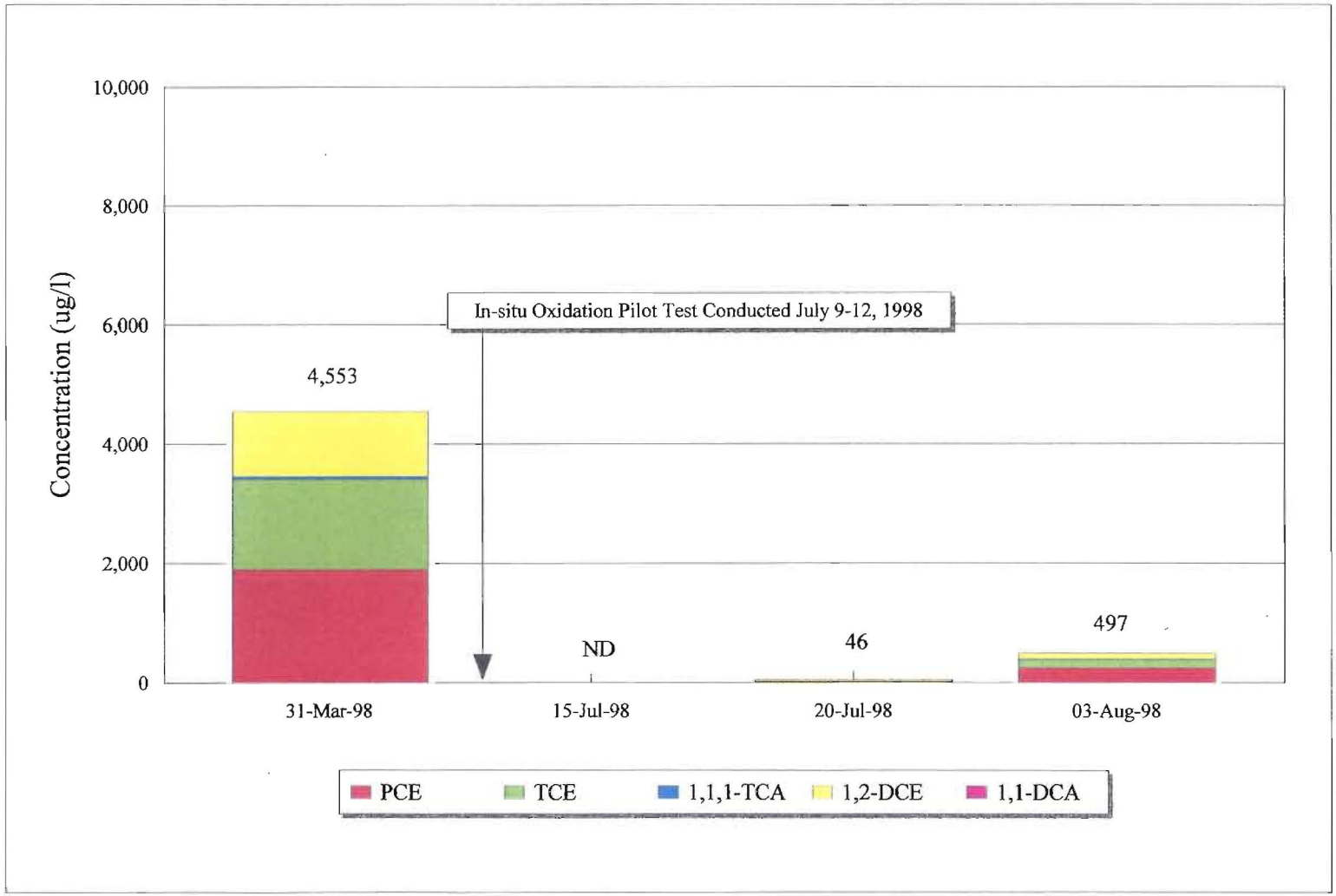
Well IW-3

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
30-Mar-98	8	2,800	450	11,000	36,000	50,258
15-Jul-98	ND	14	1	31	110	156
20-Jul-98	7	61	10	65	540	683
03-Aug-98	3	240	12	210	1,800	2,265



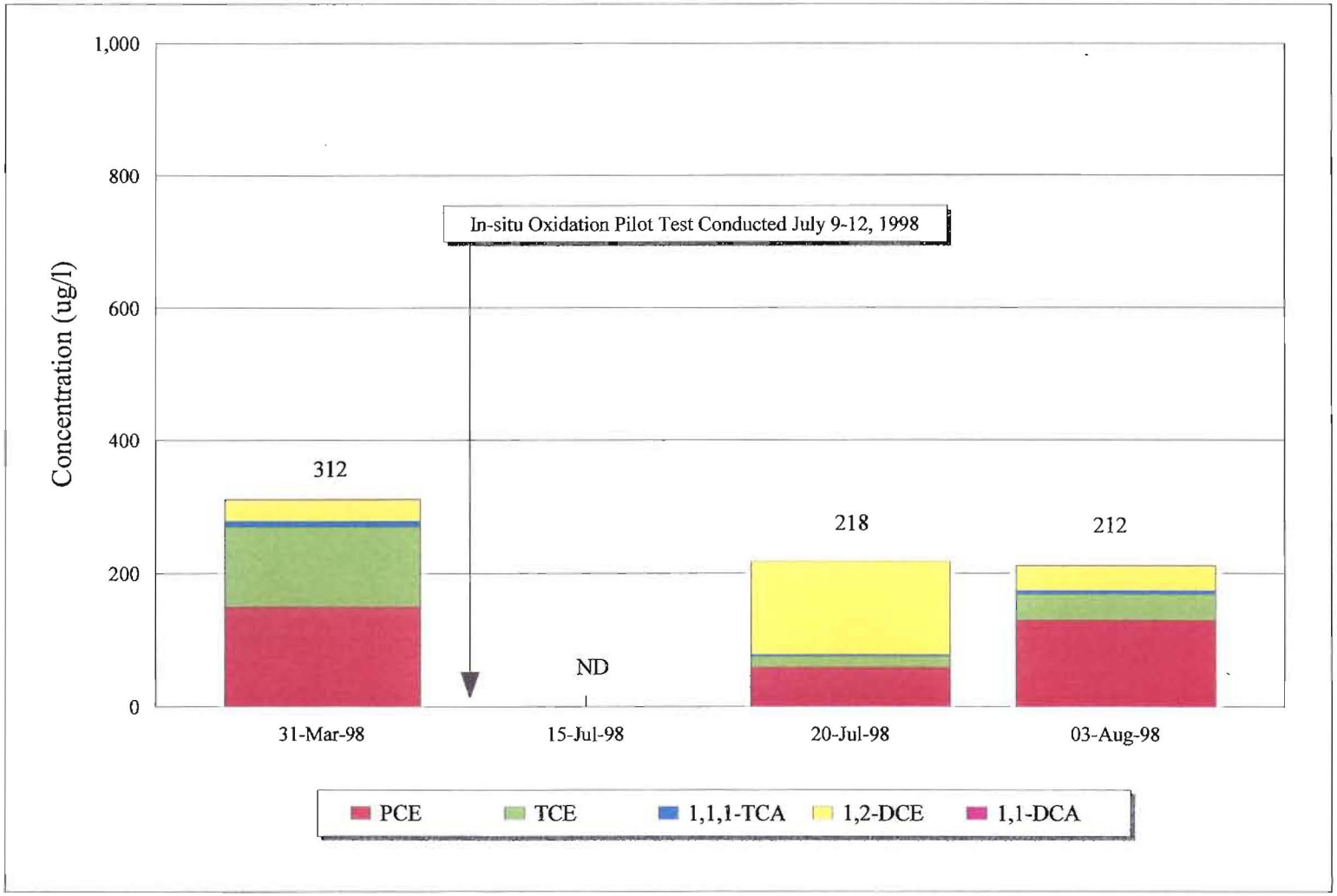
Well IW-4

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	ND	1,100	53	1,500	1,900	4,553
15-Jul-98	ND	ND	ND	ND	ND	ND
20-Jul-98	ND	28	ND	12	6	46
03-Aug-98	2	91	14	140	250	497



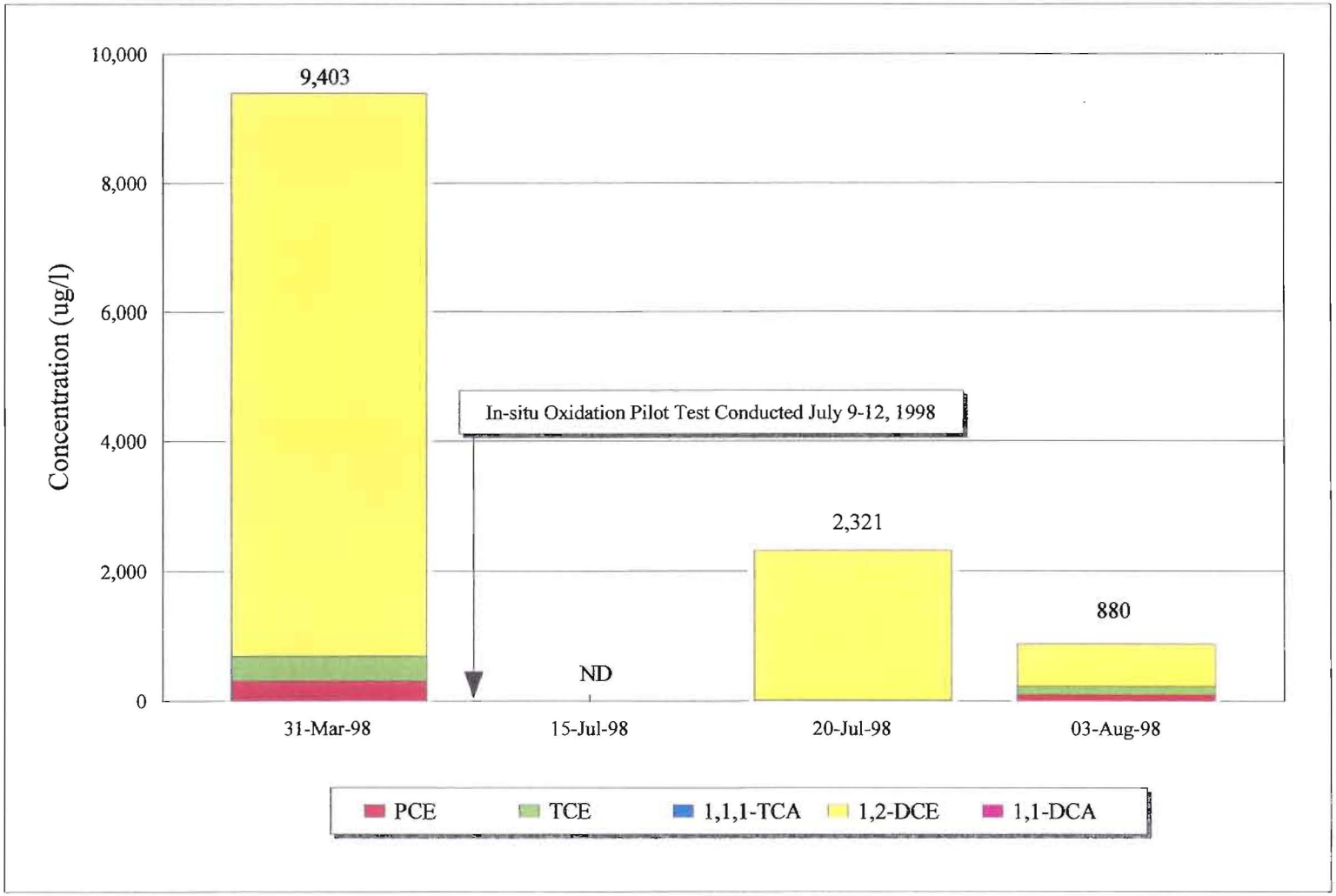
Well IW-5

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	1	32	9	120	150	312
15-Jul-98	ND	ND	ND	ND	ND	ND
20-Jul-98	ND	140	3	16	59	218
03-Aug-98	1	37	6	38	130	212



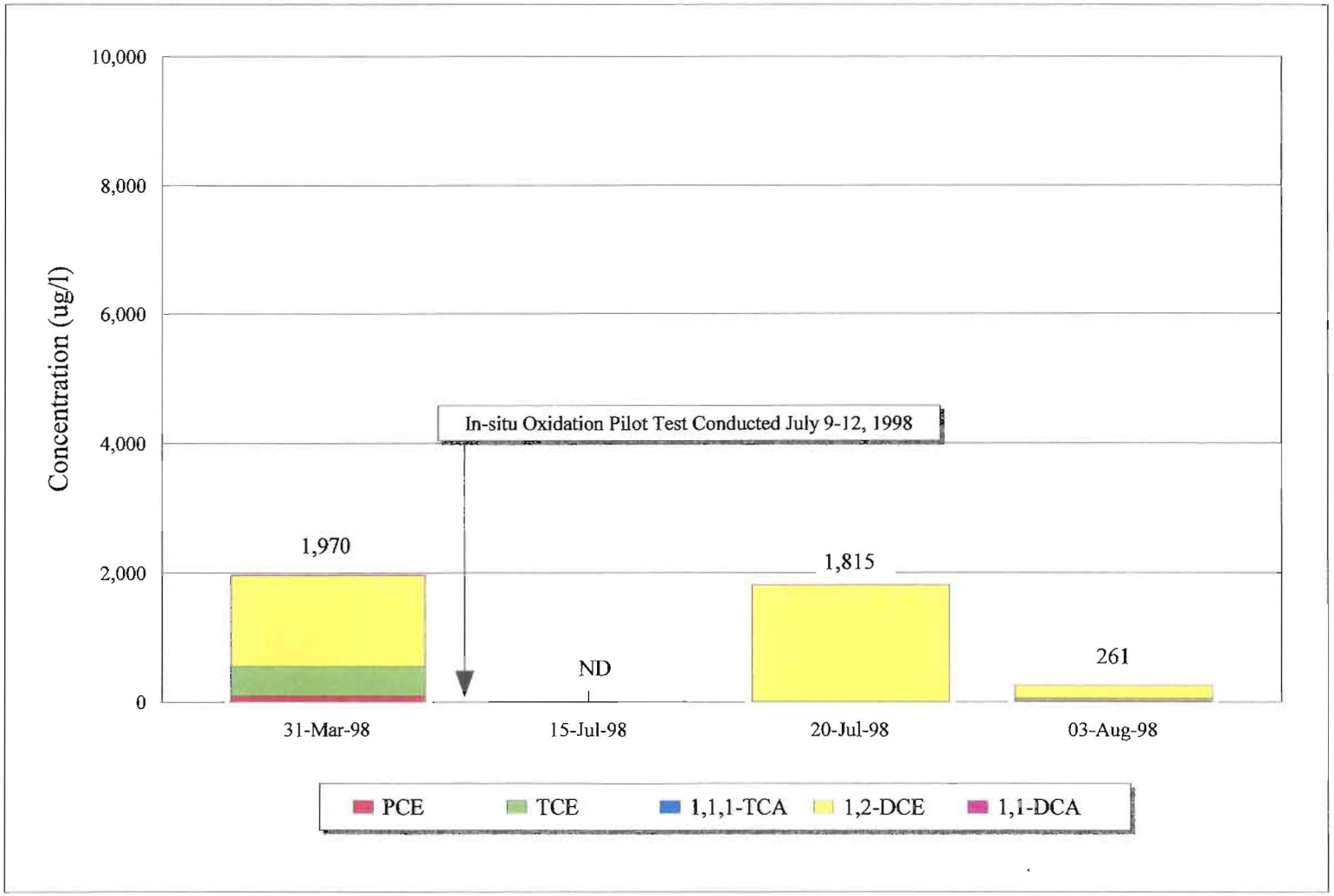
Well IW-6

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	10	8,700	13	370	310	9,403
15-Jul-98	ND	ND	ND	ND	ND	ND
20-Jul-98	5	2,300	2	12	2	2,321
03-Aug-98	4	650	6	120	100	880



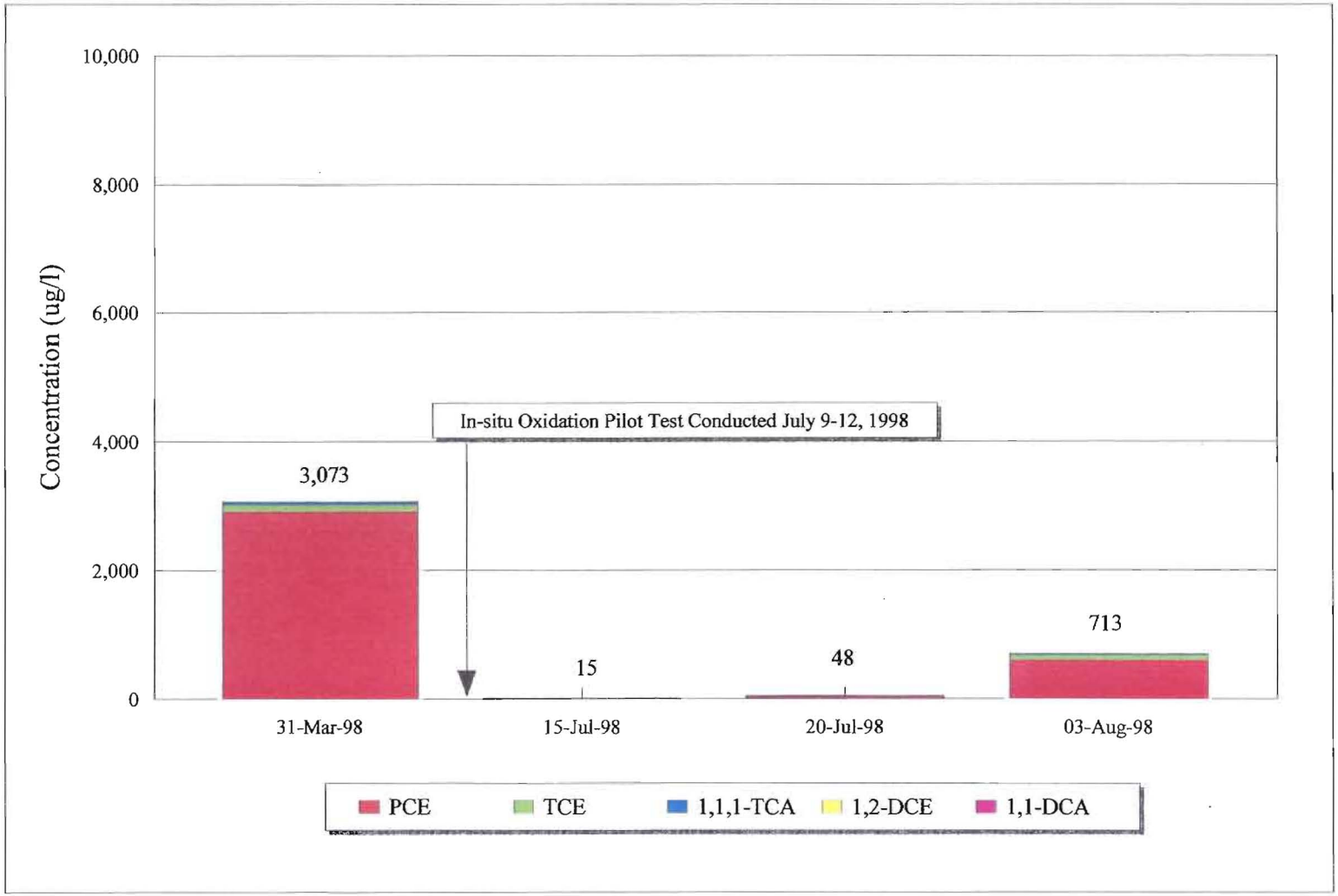
Well IW-7

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	13	1,400	ND	460	97	1,970
15-Jul-98	ND	15	ND	ND	ND	ND
20-Jul-98	8	1,800	ND	7	ND	1,815
03-Aug-98	3	200	2	33	23	261



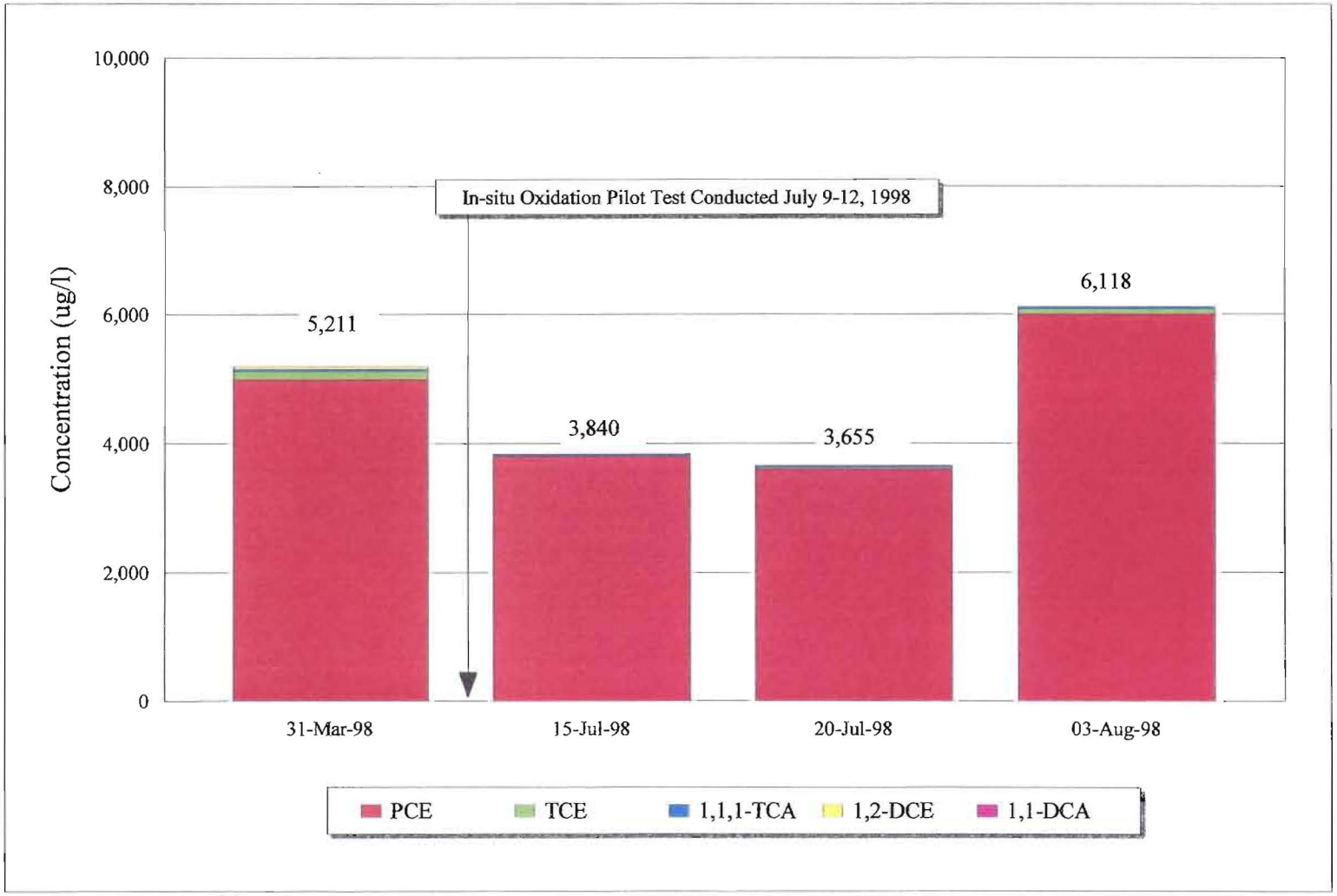
Well IW-8

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	ND	21	42	110	2,900	3,073
15-Jul-98	ND	ND	ND	ND	15	15
20-Jul-98	ND	4	4	5	35	48
03-Aug-98	ND	15	19	79	600	713



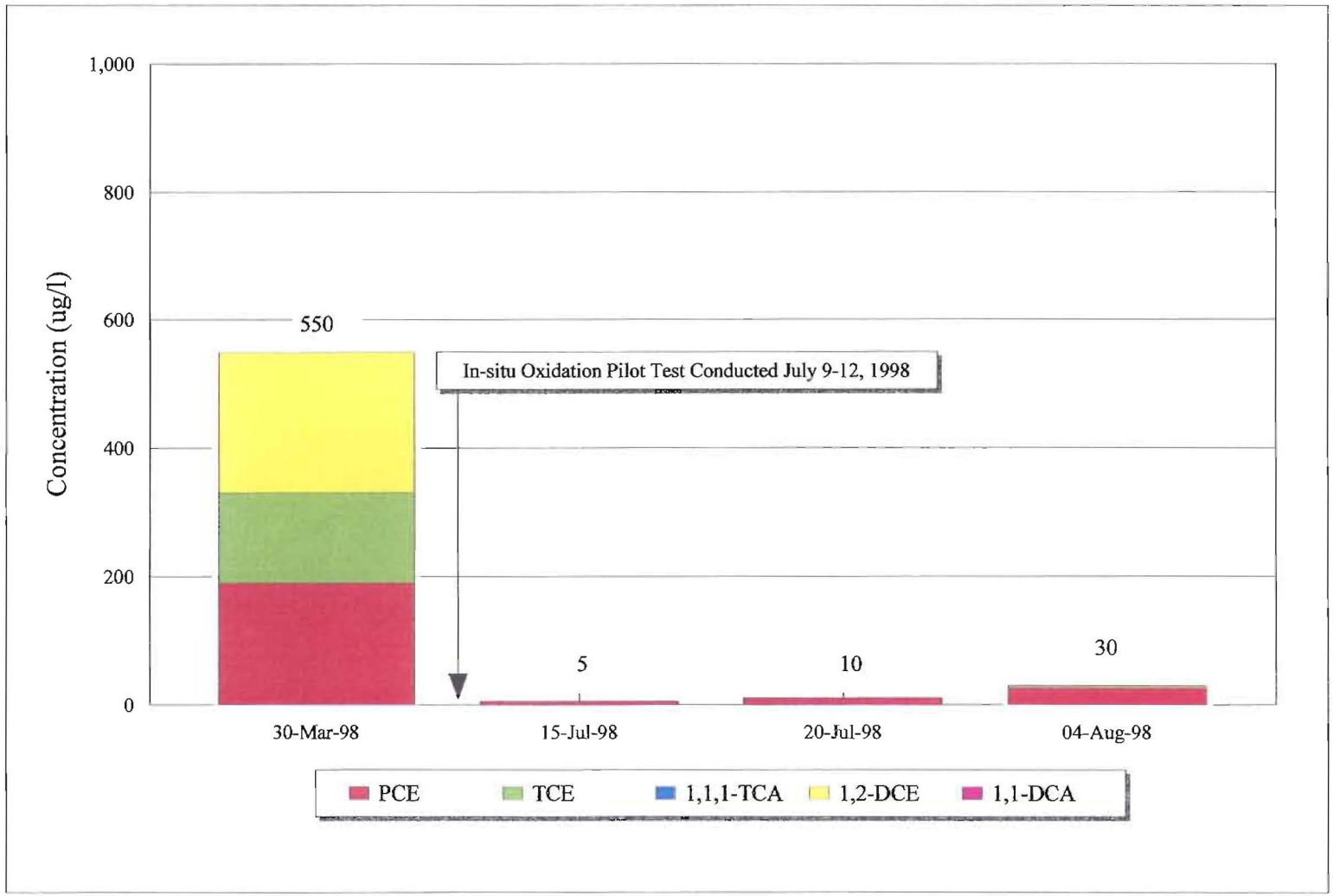
Well IW-9

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	ND	42	39	130	5,000	5,211
15-Jul-98	ND	ND	28	12	3,800	3,840
20-Jul-98	ND	2	29	24	3,600	3,655
03-Aug-98	ND	4	32	82	6,000	6,118



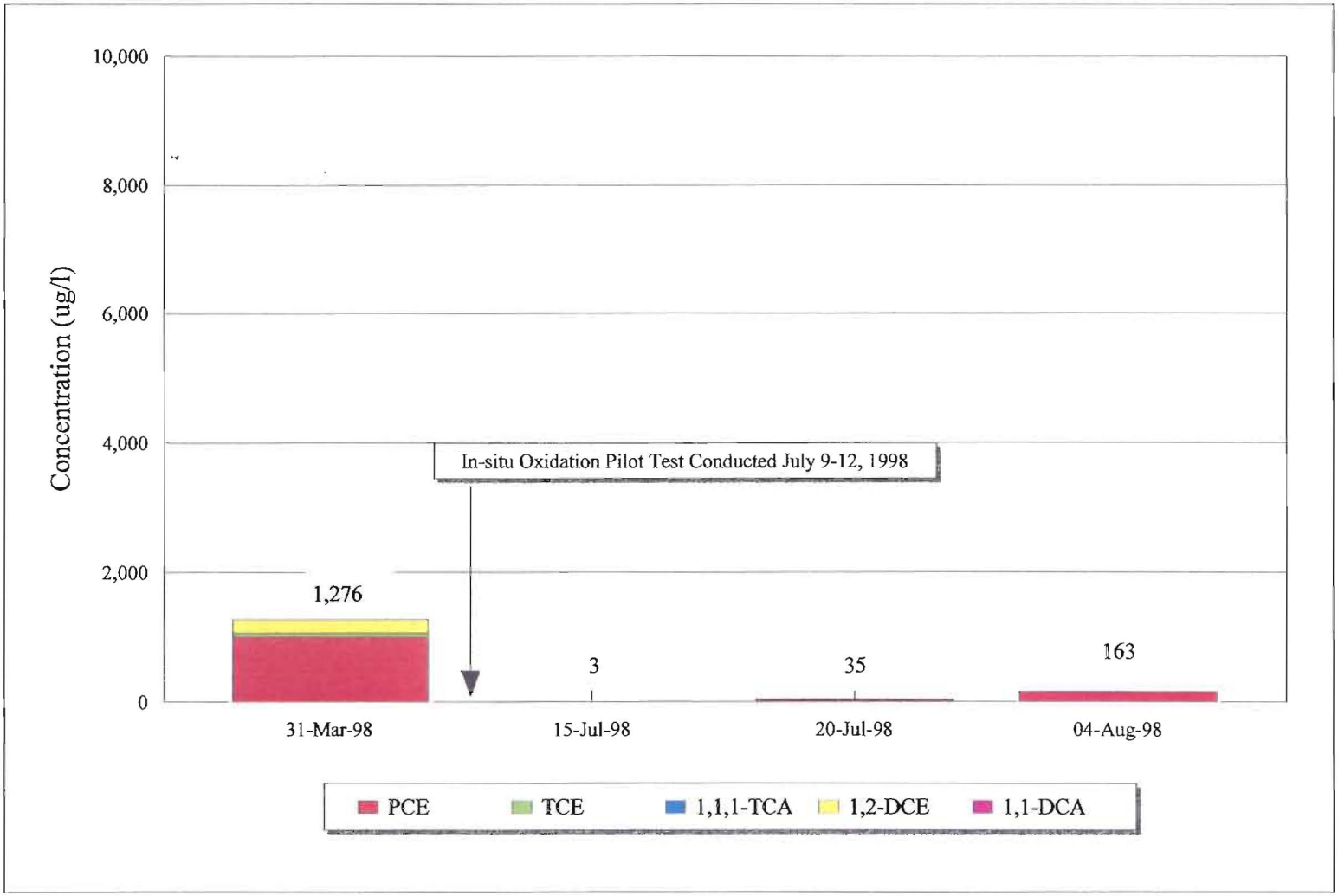
Well IW-10

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
30-Mar-98	ND	220	ND	140	190	550
15-Jul-98	ND	ND	ND	ND	5	5
20-Jul-98	ND	ND	ND	ND	10	10
04-Aug-98	ND	1	ND	3	26	30



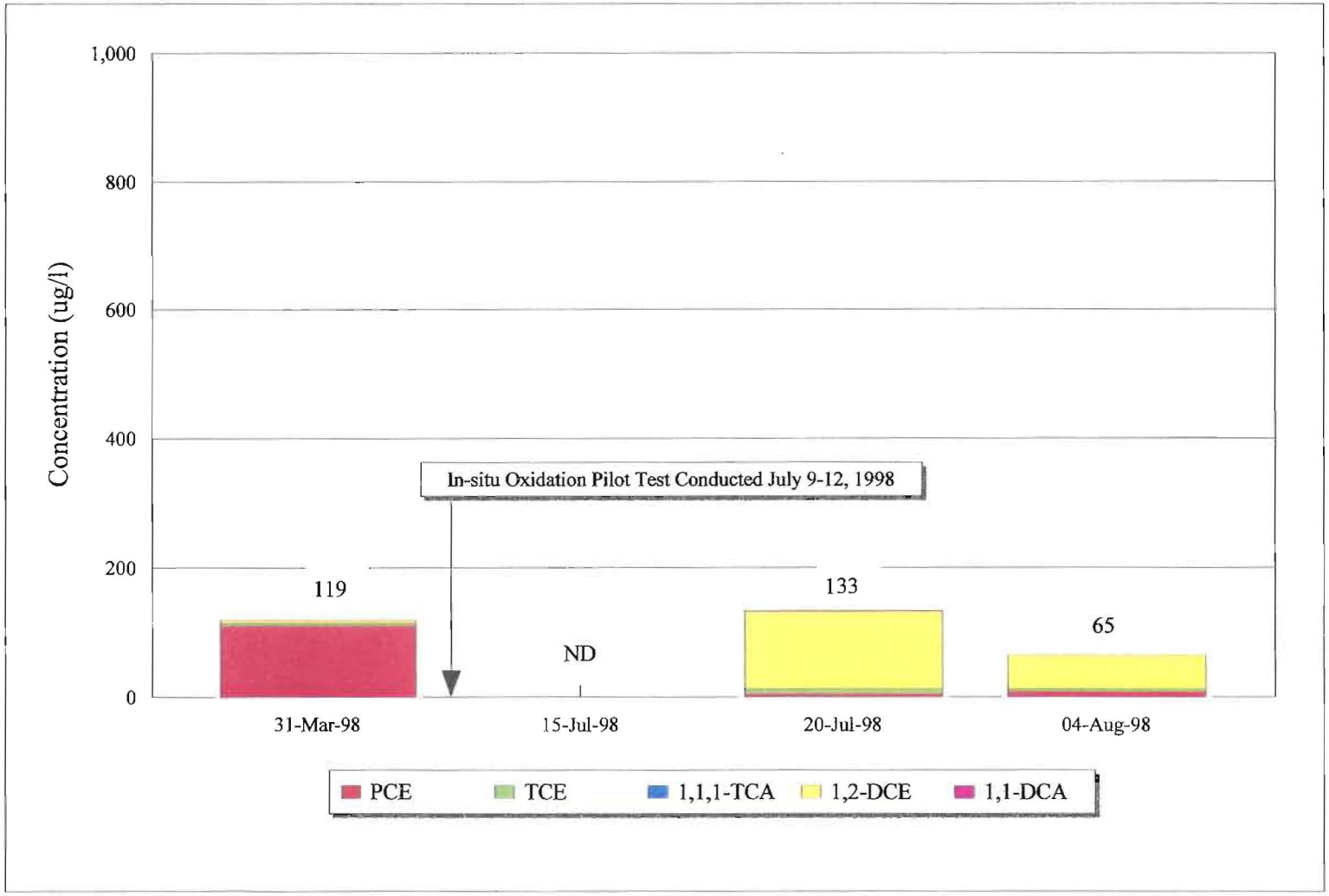
Well IW-11

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	2	210	7	57	1,000	1,276
15-Jul-98	ND	ND	ND	ND	3	3
20-Jul-98	ND	11	ND	1	23	35
04-Aug-98	ND	2	ND	1	160	163



Well IW-12

Date	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PCE	Total
31-Mar-98	ND	5	ND	4	110	119
15-Jul-98	ND	ND	ND	ND	ND	ND
20-Jul-98	1	120	ND	7	5	133
04-Aug-98	ND	53	ND	4	8	65



APPENDIX D

CONTAMINANT MASS CALCULATIONS

Procedure for Estimating Total Contaminant Mass
From Groundwater Concentration Data

The total mass of contaminants in the saturated zone is given by:

$$Mt = Mgw + Msoil \quad \text{(equation 1)}$$

where:

Mt = total mass of contaminants in the saturated zone
Mgw = mass of contaminant dissolved in groundwater
Msoil = mass of contaminant adsorbed to soil

The mass dissolved in groundwater is given by:

$$Mgw = Cgw\ n\ V \quad \text{(equation 2)}$$

where:

Cgw = concentration in groundwater
n = porosity
V = volume of aquifer impacted

and

The mass adsorbed to soil is given by:

$$Msoil = Csoil\ B\ V \quad \text{(equation 3)}$$

where:

Csoil = concentration in soil
B = bulk density of soil (dry)

Substitution of equations (2) and (3) in equation (1) yields:

$$Mt = Cgw\ n\ V + Csoil\ B\ V \quad \text{(equation 4)}$$

The distribution coefficient is defined as:

$$Kd = Csoil / Cgw \quad \text{(equation 5)}$$

Solving equation (5) for Csoil yields:

$$Csoil = Kd\ Cgw \quad \text{(equation 6)}$$

Substitution of equation (5) in equation (4) yields:

$$Mt = Cgw\ n\ V + Kd\ Cgw\ B\ V \quad \text{(equation 7)}$$

Grouping terms in equation (7) yields:

$$Mt = (n + Kd\ B)\ Cgw\ V \quad \text{(equation 8a)}$$
$$Mt = (1 + Kd\ B / n)\ Cgw\ n\ V \quad \text{(equation 8b)}$$

The retardation factor (Rd) is defined as:

$$Rd = 1 + Kd\ B / n \quad \text{(equation 9)}$$

Substitution of equation (9) in equation (8b) yields:

$$Mt = Rd\ Cgw\ n\ V \quad \text{(equation 10)}$$

Substitution of equation (10) in equation (1) yields:

$$Mgw + Msoil = Rd\ Cgw\ n\ V \quad \text{(equation 11)}$$

Solving equation (11) for Msoil yields:

$$Msoil = Rd\ Cgw\ n\ V - Mgw \quad \text{(equation 12)}$$

Substituting equation (2) in equation (12) yields:

$$Msoil = Rd\ Mgw - Mgw \quad \text{(equation 13a)}$$
$$Msoil = (Rd - 1)\ Mgw \quad \text{(equation 13b)}$$

Therefore, the mass of contaminant dissolved in groundwater (Mgw) can be calculated from groundwater concentrations using equation (2).

Assuming equilibrium conditions and the absence of non-aqueous phase liquuid (NAPL, i.e. product), the mass of contaminant adsorbed to soil (Msoil) can be calculated from the mass dissolved in groundwater (Mgw) using equation (13b).

Reference: Evaluation of Ground-Water Extraction Remedies - Volume 1 Summary Report, USEPA Publication EPA/540/2-89/054, September 1989.

Estimate of Total Contaminant Mass in Shallow Zone
From April 1997 Groundwater Concentrations
25 Melville Park Road
Melville, New York

Hydrogeological Data			
Aquifer thickness, b =	20	ft	Shallow zone (45 to 65 ft)
Porosity, n =	0.3		Estimate for soil type (30%)
Specific gravity of soil particles, Gs =	2.65	gm/cm^3	Typical average for silicate minerals
Organic carbon content =	0.001		Estimate for soil type (0.1%)
Chemical Data			
Compound(s) =	Total of 5 Primary Chlorinated VOCs		
Sample Date =	Apr-97		
Partition coefficient, Koc =	86	ml/gm	Average of 5 Primary Chlorinated VOCs (Groundwater Chemicals Desk Reference, 2nd ed., 1996)
Calculated Parameters			
Bulk density, B = Gs (1 - n) =	1.86	gm/cm^3	Calculated
Distribution coefficient, Kd = (Koc * foc) =	0.09	ml/gm	Calculated
Retardation factor, Rd = 1 + (Kd * B) / n =	1.5		Calculated
Percent dissolved in groundwater = (1 / Rd) =	65%		Calculated
Percent adsorbed on soil = (Rd - 1) / Rd =	35%		Calculated

Dissolved Concentration Contour (ug/l)	Area Within Contour (ft^2)	Area Between Contours (ft^2)	Volume Between Contours (ft^3)	Volume of Water (gallons)	"Average" Dissolved Concentration (ug/l)	Contaminant Mass			
						Dissolved (lbs)	Adsorbed (lbs)	Total (lbs)	Total (%)
100	37,193	25,704	514,080	1,153,595.5	236	2.3	1.2	3.5	4.76%
1,000	11,489	7,924	158,480	355,629.1	2,912	8.6	4.6	13.2	18.12%
10,000	3,565	3,565	71,300	159,997.2	27,551	36.7	19.5	56.2	77.12%
Totals		37,193	743,860	1,669,221.8		47.6	25.3	72.9	100.00%

Notes:

1) The dissolved mass (Mgw) was calculated from groundwater concentrations using equation (2).

2) The adsorbed mass (Msoil) was calculated from the dissolved mass (Mgw) using equation (13b).

Estimate of Total Contaminant Mass in Shallow Zone
From April 1998 (Baseline) Groundwater Concentrations
25 Melville Park Road
Melville, New York

Hydrogeological Data			
Aquifer thickness, b =	20	ft	Shallow zone (45 to 65 ft)
Porosity, n =	0.3		Estimate for soil type (30%)
Specific gravity of soil particles, Gs =	2.65	gm/cm³	Typical average for silicate minerals
Organic carbon content =	0.001		Estimate for soil type (0.1%)
Chemical Data			
Compound(s) =	Total of 5 Primary Chlorinated VOCs		
Sample Date =	Apr-98		
Partition coefficient, Koc =	86	ml/gm	Average of 5 Primary Chlorinated VOCs (Groundwater Chemicals Desk Reference, 2nd ed., 1996)
Calculated Parameters			
Bulk density, B = Gs (1 - n) =	1.86	gm/cm³	Calculated
Distribution coefficient, Kd = (Koc * foc) =	0.09	ml/gm	Calculated
Retardation factor, Rd = 1 + (Kd * B) / n =	1.5		Calculated
Percent dissolved in groundwater = (1 / Rd) =	65%		Calculated
Percent adsorbed on soil = (Rd - 1) / Rd =	35%		Calculated

Dissolved Concentration Contour (ug/l)	Area Within Contour (ft²)	Area Between Contours (ft²)	Volume Between Contours (ft³)	Volume of Water (gallons)	"Average" Dissolved Concentration (ug/l)	Contaminant Mass			
						Dissolved (lbs)	Adsorbed (lbs)	Total (lbs)	Total (%)
100	22,961	14,481	289,620	649,907.3	363	2.0	1.0	3.0	5.94%
1,000	8,480	7,312	146,240	328,162.6	3,865	10.6	5.6	16.2	31.91%
10,000	1,168	1,168	23,360	52,419.8	47,123	20.6	10.9	31.5	62.15%
Totals		22,961	459,220	1,030,489.7		33.1	17.6	50.7	100.00%

Notes:

1) The dissolved mass (Mgw) was calculated from groundwater concentrations using equation (2).

2) The adsorbed mass (Msoil) was calculated from the dissolved mass (Mgw) using equation (13b).

Estimate of Total Contaminant Mass in Shallow Zone
From August 1998 (Final Post-Injection) Groundwater Concentrations
25 Melville Park Road
Melville, New York

Hydrogeological Data			
Aquifer thickness, b =	20	ft	Shallow zone (45 to 65 ft)
Porosity, n =	0.3		Estimate for soil type (30%)
Specific gravity of soil particles, Gs =	2.65	gm/cm^3	Typical average for silicate minerals
Organic carbon content =	0.001		Estimate for soil type (0.1%)
Chemical Data			
Compound(s) =	Total of 5 Primary Chlorinated VOCs		
Sample Date =	Aug-98		
Partition coefficient, Koc =	86	ml/gm	Average of 5 Primary Chlorinated VOCs (Groundwater Chemicals Desk Reference, 2nd ed., 1996)
Calculated Parameters			
Bulk density, B = Gs (1 - n) =	1.86	gm/cm^3	Calculated
Distribution coefficient, Kd = (Koc * foc) =	0.09	ml/gm	Calculated
Retardation factor, Rd = 1 + (Kd * B) / n =	1.5		Calculated
Percent dissolved in groundwater = (1 / Rd) =	65%		Calculated
Percent adsorbed on soil = (Rd - 1) / Rd =	35%		Calculated

Dissolved Concentration Contour (ug/l)	Area Within Contour (ft^2)	Area Between Contours (ft^2)	Volume Between Contours (ft^3)	Volume of Water (gallons)	"Average" Dissolved Concentration (ug/l)	Contaminant Mass			
						Dissolved (lbs)	Adsorbed (lbs)	Total (lbs)	Total (%)
100	26,626	22,826	456,520	1,024,430.9	382	3.3	1.7	5.0	43.18%
1,000	3,800	3,465	69,300	155,509.2	2,129	2.8	1.5	4.2	36.53%
10,000	335	335	6,700	15,034.8	12,224	1.5	0.8	2.3	20.28%
Totals		26,626	532,520	1,194,974.9		7.5	4.0	11.6	100.00%

Notes:

1) The dissolved mass (Mgw) was calculated from groundwater concentrations using equation (2).

2) The adsorbed mass (Msoil) was calculated from the dissolved mass (Mgw) using equation (13b).

Estimate of Total Contaminant Mass in Deep Zone
From April 1998 (Baseline) Groundwater Concentrations
25 Melville Park Road
Melville, New York

Hydrogeological Data			
Aquifer thickness, b =	20	ft	Deep zone (75 to 95 ft)
Porosity, n =	0.3		Estimate for soil type (30%)
Specific gravity of soil particles, Gs =	2.65	gm/cm³	Typical average for silicate minerals
Organic carbon content =	0.001		Estimate for soil type (0.1%)
Chemical Data			
Compound(s) =	Total of 5 Primary Chlorinated VOCs		
Sample Date =	Apr-98		
Partition coefficient, Koc =	86	ml/gm	Average of 5 Primary Chlorinated VOCs (Groundwater Chemicals Desk Reference, 2nd ed., 1996)
Calculated Parameters			
Bulk density, B = Gs (1 - n) =	1.86	gm/cm³	Calculated
Distribution coefficient, Kd = (Koc * foc) =	0.09	ml/gm	Calculated
Retardation factor, Rd = 1 + (Kd * B) / n =	1.5		Calculated
Percent dissolved in groundwater = (1 / Rd) =	65%		Calculated
Percent adsorbed on soil = (Rd - 1) / Rd =	35%		Calculated

Dissolved Concentration Contour (ug/l)	Area Within Contour (ft²)	Area Between Contours (ft²)	Volume Between Contours (ft³)	Volume of Water (gallons)	"Average" Dissolved Concentration (ug/l)	Contaminant Mass			
						Dissolved (lbs)	Adsorbed (lbs)	Total (lbs)	Total (%)
100	9,967	5,179	103,580	232,433.5	432	0.8	0.4	1.3	13.69%
1,000	4,788	4,788	95,760	214,885.4	2,946	5.3	2.8	8.1	86.31%
Totals		9,967	199,340	447,319.0		6.1	3.2	9.4	100.00%

Notes:

1) The dissolved mass (Mgw) was calculated from groundwater concentrations using equation (2).

2) The adsorbed mass (Msoil) was calculated from the dissolved mass (Mgw) using equation (13b).

Estimate of Total Contaminant Mass in Deep Zone
From August 1998 (Final Post-Injection) Groundwater Concentrations
25 Melville Park Road
Melville, New York

Hydrogeological Data			
Aquifer thickness, b =	20	ft	Deep zone (75 to 95 ft)
Porosity, n =	0.3		Estimate for soil type (30%)
Specific gravity of soil particles, Gs =	2.65	gm/cm^3	Typical average for silicate minerals
Organic carbon content =	0.001		Estimate for soil type (0.1%)
Chemical Data			
Compound(s) =	Total of 5 Primary Chlorinated VOCs		
Sample Date =	Aug-98		
Partition coefficient, Koc =	86	ml/gm	Average of 5 Primary Chlorinated VOCs (Groundwater Chemicals Desk Reference, 2nd ed., 1996)
Calculated Parameters			
Bulk density, B = Gs (1 - n) =	1.86	gm/cm^3	Calculated
Distribution coefficient, Kd = (Koc * foc) =	0.09	ml/gm	Calculated
Retardation factor, Rd = 1 + (Kd * B) / n =	1.5		Calculated
Percent dissolved in groundwater = (1 / Rd) =	65%		Calculated
Percent adsorbed on soil = (Rd - 1) / Rd =	35%		Calculated

Dissolved Concentration Contour (ug/l)	Area Within Contour (ft^2)	Area Between Contours (ft^2)	Volume Between Contours (ft^3)	Volume of Water (gallons)	"Average" Dissolved Concentration (ug/l)	Contaminant Mass			
						Dissolved (lbs)	Adsorbed (lbs)	Total (lbs)	Total (%)
100	6,303	3,848	76,960	172,698.2	477	0.7	0.4	1.1	12.31%
1,000	2,455	2,455	49,100	110,180.4	5,328	4.9	2.6	7.5	87.69%
Totals		6,303	126,060	282,878.6		5.6	3.0	8.5	100.00%

Notes:
1) The dissolved mass (Mgw) was calculated from groundwater concentrations using equation (2).

2) The adsorbed mass (Msoil) was calculated from the dissolved mass (Mgw) using equation (13b).

APPENDIX E

PILOT TEST AIR MONITORING DATA

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group)

Station: Outdoor

Site: 25 Melville Park Road, Melville, NY

Project No.: U0063-001-01-00

Date	Time	Initials	Barometric Pressure (in Hg)	Weather
07/07/98	16:26	AS	29.95	Indoors
07/07/98	17:19	AS	29.95	Indoors
07/07/98	18:37	AS	29.95	Cloudy, 70's
07/08/98	08:37	AS	29.90	Cloudy, 70's
07/08/98	11:24	AS	29.85	Cloudy, 70's
07/08/98	12:29	AS	29.85	Rain, 70's
07/08/98	13:22	AS	29.85	Cloudy, 70's
07/08/98	15:00	AS	29.83	Cloudy, 70's
07/08/98	16:06	AS	29.81	Cloudy, 70's
07/08/98	17:38	AS	29.80	Cloudy, 70's
07/08/98	19:08	AS	29.78	Cloudy, 70's
07/08/98	19:54	AS	29.78	Cloudy, 70's
07/09/98	08:05	AS	29.75	Cloudy, 70's
07/09/98	08:54	AS	29.75	Sunny, 70's
07/09/98	10:25	AS	29.74	Sunny, 80's
07/09/98	11:54	AS	29.74	Sunny, 80's
07/09/98	12:43	AS	29.74	Mostly Sunny, 80's
07/09/98	13:41	AS	29.74	Mostly Cloudy, 80's

Date	Time	Initials	Barometric Pressure (in Hg)	Weather
07/09/98	14:41	AS	29.69	Cloudy, 80's
07/09/98	15:43	AS	29.68	Mostly Cloudy, 80's
07/09/98	16:44	JB	29.71	Cloudy, 80
07/09/98	17:55	JB	29.65	Clear 80's
07/09/98	18:57	AS	29.65	Clear 80's
07/10/98	11:01	AS	29.65	Sunny, 80's
07/10/98	13:54	AS	29.65	Mostly Sunny, 80's
07/10/98	14:35	AS	29.65	Mostly Sunny, 80's
07/10/98	17:13	AS	29.67	Mostly Sunny, 80's
07/10/98	18:21	AS	29.73	Sunny, 80's
07/10/98	19:46	AS	29.73	Partly Cloudy, 80's
07/10/98	20:38	AS	29.71	Clear, 70's
07/10/98	21:32	AS	29.77	Clear, 70's
07/10/98	22:27	AS	29.84	Clear, 70's
07/11/98	06:09	AS	29.80	Clear, 60's
07/11/98	10:00	AS	29.82	Clear, 70's
07/11/98	11:00	AS	29.82	Clear, 70's
07/11/98	11:57	AS	29.80	Clear, 80's

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group)

Site: 25 Melville Park Road, Melville, NY

Station: Outdoor

Project No.: U0063-001-01-00

Date	Time	Initials	Barometric Pressure (in Hg)	Weather
07/11/98	12:43	AS	29.80	Clear, 80's
07/11/98	13:43	AS	29.79	Partly Cloudy, 80's
07/11/98	14:57	AS	29.80	Partly Cloudy, 80's
07/11/98	16:00	AS	29.80	Partly Cloudy, 80's
07/12/98	06:45	AS	29.87	Clear, 70's
07/12/98	09:58	AS	29.87	Clear, 80's
07/12/98	11:09	AS	29.87	Clear, 80's
07/12/98	15:51	AS	29.89	Partly Cloudy, 80's
07/13/98	09:15	AS	30.00	Clear, 80's
07/13/98	11:44	AS	29.92	Partly Cloudy, 80's

Date	Time	Initials	Barometric Pressure (in Hg)	Weather

In-situ Chemical Oxidation Pilot Test
Air Monitoring Equipment Calibration Form

Client: WHCS Melville, LLC (c/o Archon Group)

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Instrument	Serial No.	Chemical	Calibration Gas Concentration	Instrument Reading
07/07/98	12:20	AS	GasTech GT201	9546122	Methane	50% LEL	51% LEL
07/07/98	12:33	AS	GasTech GT201	9546122	CO	199 ppm	202 ppm
07/07/98	12:42	AS	GasTech GT201	9546122	H2S	26 ppm	26 ppm
07/07/98	13:12	AS	GasTech GT	9616068	CO	199 ppm	203 ppm
07/07/98	13:17	AS	GasTech GT	9616068	CO2	2.5%	2.4%
07/07/98	13:18	AS	GasTech GT	9616068	Methane	50% LEL	50% LEL
07/07/98	14:22	AS	OVM 580B	580B-27465-229	Isobutylene	98 ppm	96 ppm
07/07/98	14:31	AS	OVM 580B	5800-54312-299	Isobutylene	99ppm	90 ppm
07/07/98	14:52	AS	Bacharach	VA-0571	CO	199 ppm	185 ppm
07/07/98	15:08	AS	Bacharach	VA-0571	H2S	26ppm	34 ppm
07/07/98	15:10	AS	Bacharach	VA-0571	Methane	50% LEL	31% LEL
07/08/98	10:39	AS	GasTech GT	9616068	CO2	2.5%	2.55%
07/08/98	10:39	AS	GasTech GT	9616068	Methane	50% LEL	54% LEL
07/08/98	10:39	AS	GasTech GT	9616068	CO	199 ppm	206 ppm
07/08/98	10:49	AS	GasTech GT201	9546122	CO	199 ppm	199 ppm
07/08/98	10:49	AS	GasTech GT201	9546122	Methane	50% LEL	54% LEL
07/08/98	10:49	AS	GasTech GT201	9546122	H2S	26 ppm	28 ppm
07/08/98	10:59	AS	OVM 580B	580B-27465-229	Isobutylene	98 ppm	99 ppm
07/08/98	11:44	AS	OVM 580B	5800-54312-299	Isobutylene	98 ppm	100 ppm
07/08/98	11:54	AS	Bacharach	VA-0571	CO	199 ppm	175 ppm
07/08/98	11:54	AS	Bacharach	VA-0571	H2S	26 ppm	36 ppm
07/08/98	11:54	AS	Bacharach	VA-0571	Methane	50% LEL	29% LEL
07/09/98	08:21	AS	OVM 580B	580B-27465-229	Isobutylene	98 ppm	97 ppm
07/09/98	08:24	AS	GasTech GT	9616068	Methane	50% LEL	52% LEL

In-situ Chemical Oxidation Pilot Test
Air Monitoring Equipment Calibration Form

Client: WHCS Melville, LLC (c/o Archon Group)

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Instrument	Serial No.	Chemical	Calibration Gas Concentration	Instrument Reading
07/09/98	08:27	AS	GasTech GT	9616068	CO2	2.5%	2.4%
07/09/98	08:27	AS	GasTech GT	9616068	CO	199 ppm	202 ppm
07/09/98	08:28	AS	GasTech GT201	9546122	Methane	50% LEL	53% LEL
07/09/98	08:28	AS	GasTech GT201	9546122	H2S	26 ppm	28 ppm
07/09/98	08:28	AS	GasTech GT201	9546122	CO	199 ppm	201 ppm
07/09/98	09:13	AS	OVM 580B	5800-54312-299	Isobutylene	98 ppm	99 ppm
07/10/98	11:25	JB	GasTech GT201	9546122	CO	199 ppm	197 ppm
07/10/98	11:25	JB	GasTech GT201	9546122	H2S	26 ppm	26 ppm
07/10/98	11:25	JB	GasTech GT201	9546122	Methane	50% LEL	51% LEL
07/10/98	11:28	AS	OVM 580B	580B-27465-229	Isobutylene	98 ppm	98 ppm
07/10/98	11:47	AS	GasTech GT	9616068	CO	199 ppm	206 ppm
07/10/98	11:47	AS	GasTech GT	9616068	CO2	2.5 %	2.45 %
07/10/98	11:47	AS	OVM 580B	9616068	Methane	50% LEL	52% LEL
07/10/98	12:34	AS	OVM 580B	5800-54312-299	Isobutylene	98 ppm	94 ppm
07/10/98	12:44	AS	MSA Passport	HAZCO 13942	Methane	50% LEL	47% LEL
07/10/98	12:44	AS	MSA Passport	HAZCO 13942	H2S	26 ppm	24 ppm
07/10/98	12:44	AS	MSA Passport	HAZCO 13942	CO	199 ppm	215 ppm
07/11/98	06:19	AS	OVM 580B	580B-27465-229	Isobutylene	98 ppm	98 ppm
07/11/98	06:23	AS	OVM 580B	5800-54312-299	Isobutylene	98 ppm	98 ppm
07/11/98	06:24	AS	GasTech GT201	9546122	Methane	50% LEL	51% LEL
07/11/98	06:24	AS	GasTech GT201	9546122	CO	199 ppm	190 ppm
07/11/98	06:24	AS	GasTech GT201	9546122	H2S	26 ppm	28 ppm
07/11/98	06:26	AS	GasTech GT	9616068	Methane	50% LEL	52% LEL
07/11/98	06:26	AS	GasTech GT	9616068	CO	199 ppm	198 ppm

In-situ Chemical Oxidation Pilot Test
Air Monitoring Equipment Calibration Form

Client: WHCS Melville, LLC (c/o Archon Group)

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Instrument	Serial No.	Chemical	Calibration Gas Concentration	Instrument Reading
07/11/98	06:26	AS	GasTech GT	9616068	CO2	2.5%	2.45%
07/11/98	07:03	AS	MSA Passport	Hazco 13942	Methane	50% LEL	49% LEL
07/11/98	07:03	AS	MSA Passport	Hazco 13942	H2S	26 ppm	26 ppm
07/11/98	07:03	AS	MSA Passport	Hazco 13942	CO	199 ppm	215 ppm
07/12/98	06:48	AS	GasTech GT	6616068	CO2	2.5%	2.45%
07/12/98	06:48	AS	GasTech GT	6616068	Methane	50% LEL	50% LEL
07/12/98	06:48	AS	GasTech GT	6616068	CO	199 ppm	209ppm
07/12/98	06:51	AS	GasTech GT201	9546122	H2S	26 ppm	28 ppm
07/12/98	06:51	AS	GasTech GT201	9546122	Methane	50% LEL	49% LEL
07/12/98	06:51	AS	GasTech GT201	9546122	CO	199 ppm	199 ppm
07/12/98	06:55	AS	OVM 580B	580B-27465-229	Isobutylene	98 ppm	99 ppm
07/13/98	09:27	AS	OVM 580B	580B-27465-229	Isobutylene	98 ppm	98 ppm
07/13/98	09:30	AS	GasTech GT	6616068	CO2	2.5%	2.5%
07/13/98	09:30	AS	GasTech GT	6616068	CO	199 ppm	200 ppm
07/13/98	09:30	AS	GasTech GT	6616068	Methane	50% LEL	50% LEL
07/13/98	09:35	AS	GasTech GT201	9546122	H2S	26 ppm	26 ppm
07/13/98	09:35	AS	GasTech GT201	9546122	CO	199 ppm	196 ppm
07/13/98	09:35	AS	GasTech GT201	9546122	Methane	50% LEL	50% LEL

Indoor Air Monitoring Data

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Indoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Indoor Action Level				5	5	< 19.5 > 22	9	0.1	2.5	0.25	0.2
07/07/98	14:24	AS	Primary	0.0	---	---	---	---	---	---	---
07/07/98	14:25	AS	Secondary	0.0	---	---	---	---	---	---	---
07/07/98	15:16	AS	Secondary	---	0	20.9	0	---	0	---	---
07/07/98	15:18	AS	Primary	---	0	20.9	0	---	0	---	---
07/07/98	15:29	AS	Primary	---	---	---	---	---	---	0.16	---
07/07/98	15:31	AS	Secondary	---	---	---	---	---	---	0.12 - 0.20	---
07/07/98	15:38	AS	Primary	---	---	---	---	---	---	---	0
07/07/98	15:40	AS	Secondary	---	---	---	---	---	---	---	0
07/07/98	15:55	AS	Secondary	---	0	20.9	---	0.00	---	---	---
07/07/98	15:57	AS	Primary	---	0	20.9	---	0.00	---	---	---
07/07/98	16:00	AS	Secondary	---	0	20.9	0	---	0	---	---
07/07/98	16:00	AS	Secondary	---	0	20.9	0	0.00	---	---	---
07/07/98	16:02	AS	Primary	---	0	20.9	0	---	0	---	---
07/07/98	16:02	AS	Primary	---	0	20.9	0	0.00	---	---	---
07/07/98	17:03	AS	Primary	---	0	20.9	0	0.00	---	---	---
07/07/98	17:03	AS	Primary	---	0	20.9	0	---	0	---	---
07/07/98	17:01	AS	Secondary	---	0	20.9	0	0.00	---	---	---
07/07/98	17:01	AS	Secondary	---	0	20.9	0	---	0	---	---
07/07/98	17:10	AS	Primary	0.0	---	---	---	---	---	---	---
07/07/98	17:12	AS	Secondary	0.0	---	---	---	---	---	---	---
07/07/98	17:20	AS	Primary	---	---	---	---	---	---	---	0
07/07/98	17:22	AS	Secondary	---	---	---	---	---	---	---	0
07/07/98	17:30	AS	Primary	---	---	---	---	---	---	0.10	---

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Indoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Indoor Action Level				5	5	< 19.5 > 22	9	0.1	2.5	0.25	0.2
07/07/98	17:32	AS	Secondary	---	---	---	---	---	---	0.16	---
07/08/98	11:27	AS	Secondary	15.0	0	20.9	0	0.00	0	0.10	0
07/08/98	11:35	AS	Primary	14.0	0	20.9	0	0.00	0	0.06	0
07/08/98	12:10	AS	Primary	11.0	0	20.9	0	0.00	0	0.06	0
07/08/98	12:12	AS	Secondary	8.2	0	20.9	0	0.00	0	0.08	0
07/08/98	12:50	AS	Primary	6.1	0	20.9	0	0.10	0	0.08	0
07/08/98	12:52	AS	Secondary	6.6	0	20.9	0	0.05	0	0.06	0
07/08/98	13:15	AS	Primary	3.9	0	20.9	0	0.10	0	0.06	0
07/08/98	13:17	AS	Secondary	3.4	0	20.9	0	0.15	0	0.06	0
07/08/98	13:49	AS	Secondary	2.3	0	20.9	0	0.00	0	0.02	0
07/08/98	13:52	AS	Primary	2.3	0	20.9	0	0.00	0	0.02	0
07/08/98	14:52	AS	Primary	1.3	0	20.9	0	0.00	0	0.06	0
07/08/98	14:54	AS	Secondary	0.0	0	20.9	0	0.00	0	0.08	0
07/08/98	15:29	AS	Primary	0.7	0	20.9	0	0.00	0	0.04	0
07/08/98	15:31	AS	Secondary	0.0	0	20.9	0	0.00	0	0.08	0
07/08/98	15:58	AS	Primary	0.2	0	20.9	0	0.00	0	0.06	0
07/08/98	16:00	AS	Secondary	0.0	0	20.9	0	0.00	0	0.08	0
07/08/98	16:26	AS	Secondary	0.0	0	20.9	0	0.00	0	0.06	0
07/08/98	16:28	AS	Primary	0.0	0	20.9	0	0.00	0	0.06	0
07/09/98	08:56	AS	Secondary	0.7	0	20.9	0	0.00	0	0.04	0
07/09/98	09:01	AS	Primary	0.2	0	20.9	0	0.00	0	0.04	0
07/09/98	09:51	AS	Paint Thinner	400.0	---	---	---	---	---	---	---
07/09/98	09:54	AS	Paint	>100	---	---	---	---	---	---	---

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Indoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
	Indoor Action Level			5	5	< 19.5 > 22	9	0.1	2.5	0.25	0.2
09/09/98	10:00	AS	Cutting Oil	2.9	---	---	---	---	---	---	---
09/09/98	10:02	AS	Sprinkler Drain	3.9	---	---	---	---	---	---	---
09/09/98	11:39	AS	Secondary	0.0	0	20.9	0	0.05	0	0.22	0
09/09/98	11:52	AS	Primary	0.0	0	20.9	0	0.00	0	0.12	0
09/09/98	12:07	AS	Primary	0.0	0	20.9	0	0.05	0	0.08	0
09/09/98	12:47	AS	Secondary	0.0	0	20.9	0	0.00	0	0.10	0
09/09/98	12:52	AS	Primary	0.0	0	20.9	0	0.00	0	0.12	0
09/09/98	13:22	AS	Primary	0.0	0	20.9	0	0.00	0	0.14	0
09/09/98	14:49	AS	Primary	0.0	0	20.9	0	0.00	0	0.10	0
09/09/98	14:53	AS	Secondary	0.0	0	20.9	0	0.00	0	0.08	0
09/09/98	14:56	AS	Main Hall	0.0	0	20.9	0	0.00	0	0.12	0
09/09/98	15:19	AS	Primary	0.0	0	20.9	0	0.00	0	0.02	0
09/09/98	15:50	AS	Primary	0.7	0	20.9	0	0.00	0	0.00	0
09/09/98	15:53	AS	Secondary	0.0	0	20.9	0	0.05	0	0.00	0
09/09/98	16:20	AS	Primary	1.3	0	20.9	0	0.00	0	0.06	0
09/09/98	16:56	AS	Primary	0.2	0	20.9	0	0.00	0	0.04	0
09/09/98	16:58	AS	Secondary	0.0	0	20.9	0	0.00	0	0.08	0
09/09/98	17:30	AS	Primary	0.2	0	20.9	0	0.00	0	0.06	0
09/09/98	18:10	AS	Primary	0.2	0	20.9	0	0.00	0	0.04	0
09/09/98	18:13	AS	Secondary	---	0	20.9	0	0.00	0	0.02	0
09/09/98	08:32	JB	Primary	0.2	0	20.9	0	0.00	0	0.04	0
09/10/98	12:17	AS	Secondary	0.0	0	20.9	0	0.00	0	0.18	0
09/10/98	12:22	AS	Primary	0.0	0	20.9	0	0.00	0	0.14	0

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Indoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Indoor Action Level				5	5	< 19.5 > 22	9	0.1	2.5	0.25	0.2
07/10/98	12:54	AS	Primary	0.0	0	20.9	0	0.00	0	0.14	0
07/10/98	12:56	AS	Secondary	0.0	0	20.9	0	0.00	0	0.10	0
07/10/98	15:40	AS	Secondary	0.0	0	20.9	0	0.00	0	0.30	0
07/10/98	15:42	AS	Primary	0.0	0	20.9	0	0.00	0	0.24	0
07/10/98	17:32	AS	Primary	0.0	0	20.9	0	0.00	0	0.10	0
07/10/98	17:40	AS	Secondary	0.0	0	20.9	0	0.00	0	0.12	0
07/10/98	18:31	AS	Primary	0.0	0	20.9	0	0.00	0	0.12	0
07/10/98	18:34	AS	Secondary	0.0	0	20.9	0	0.00	0	0.12	0
07/10/98	19:13	AS	Primary	0.0	0	20.9	0	0.00	0	0.06	0
07/10/98	19:34	AS	Secondary	0.0	0	20.9	0	0.00	0	0.04	0
07/10/98	20:21	AS	Primary	0.0	0	20.9	0	0.00	0	0.16	0
07/10/98	20:42	AS	Primary	0.0	0	20.9	0	0.00	0	0.10	0
07/10/98	20:43	AS	Secondary	0.0	0	20.9	0	0.00	0	0.10	0
07/10/98	21:13	AS	Primary	0.0	0	20.9	0	0.00	0	0.08	0
07/10/98	21:47	AS	Primary	0.0	0	20.9	0	0.00	0	0.06	0
07/10/98	21:49	AS	Secondary	0.0	0	20.9	0	0.00	0	0.06	0
07/10/98	22:35	AS	Primary	0.0	0	20.9	0	0.00	0	0.12	0
07/10/98	22:43	AS	Secondary	0.0	0	20.9	0	0.00	0	0.06	0
07/11/98	07:49	AS	Secondary	0.0	0	20.9	0	0.00	0	0.04	0
07/11/98	08:35	AS	Primary	0.0	0	20.9	0	0.00	0	0.02	0
07/11/98	10:54	AS	Primary	0.0	0	20.9	0	0.00	0	0.12	0
07/11/98	10:56	AS	Secondary	0.0	0	20.9	0	0.00	0	0.14	0
07/11/98	11:43	AS	Primary	0.0	0	20.9	0	0.00	0	0.10	0

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Indoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Indoor Action Level				5	5	< 19.5 > 22	9	0.1	2.5	0.25	0.2
07/11/98	11:48	AS	Secondary	0.0	0	20.9	0	0.00	0	0.16	0
07/11/98	12:47	AS	Primary	0.0	0	20.9	0	0.00	0	0.14	0
07/11/98	12:48	AS	Secondary	0.0	0	20.9	0	0.00	0	0.14	0
07/11/98	13:17	AS	Primary	0.0	0	20.9	0	0.00	0	0.06	0
07/11/98	13:46	AS	Primary	0.0	0	20.9	0	0.00	0	0.16	0
07/11/98	13:48	AS	Secondary	0.0	0	20.9	0	0.00	0	0.14	0
07/11/98	14:47	AS	Primary	0.0	0	20.9	0	0.00	0	0.10	0
07/11/98	14:48	AS	Secondary	0.0	0	20.9	0	0.00	0	0.08	0
07/11/98	15:17	AS	Primary	0.0	0	20.9	0	0.00	0	0.08	0
07/11/98	15:47	AS	Primary	0.0	0	20.9	0	0.00	0	0.10	0
07/11/98	15:48	AS	Secondary	0.0	0	20.9	0	0.00	0	0.10	0
07/12/98	07:21	AS	Primary	0.0	0	20.9	0	0.05	0	0.06	0
07/12/98	07:23	AS	Secondary	0.0	0	20.9	0	0.05	0	0.04	0
07/12/98	09:34	AS	Primary	0.2	0	20.9	0	0.00	0	0.04	0
07/12/98	09:37	AS	Secondary	0.0	0	20.9	0	0.00	0	0.06	0
07/12/98	10:10	AS	Primary	0.0	0	20.9	0	0.00	0	0.10	0
07/12/98	10:40	AS	Primary	0.0	0	20.9	0	0.00	0	0.12	0
07/12/98	10:42	AS	Secondary	0.0	0	20.9	0	0.00	0	0.12	0
07/12/98	11:15	AS	Primary	0.0	0	20.9	0	0.00	0	0.12	0
07/12/98	13:30	AS	Primary	0.0	0	20.9	0	0.00	0	0.10	0
07/12/98	15:13	AS	Secondary	0.0	0	20.9	0	0.00	0	0.20	0
07/13/98	10:02	AS	Secondary	3.3	0	20.9	0	0.00	0	0.14	0
07/13/98	10:05	AS	Primary	16.5	0	20.9	0	0.00	0	0.12	0

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Indoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Indoor Action Level				5	5	< 19.5 > 22	9	0.1	2.5	0.25	0.2
07/13/98	11:35	AS	Primary	9.4	0	20.9	0	0.00	0	0.16	0
07/13/98	11:40	AS	Secondary	1.2	0	20.9	0	0.00	0	0.16	0

Outdoor Air Monitoring Data

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Outdoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Outdoor Action Level				5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/07/98	12:44	AS	West Curb	---	0	20.9	0.0	---	0	---	---
07/07/98	13:20	AS	West Curb	---	0	20.9	0.0	0.00	---	---	---
07/07/98	14:26	AS	West Curb	0.0	---	---	---	---	---	---	
07/07/98	15:14	AS	West Curb	---	0	20.9	0.0	---	0	---	---
07/07/98	15:34	AS	West Curb	---	---	---	---	---	---	0.16	---
07/07/98	15:41	AS	West Curb	---	---	---	---	---	---	---	0.0
07/07/98	15:50	AS	West Curb	---	0	20.9	---	0.00	---	---	---
07/07/98	16:55	AS	West Curb	---	0	20.9	0.0	0.00	---	---	---
07/07/98	16:55	AS	West Curb	---	0	20.9	0.0	---	0	---	---
07/07/98	16:57	AS	S. Injection	---	0	20.9	0.0	0.00	---	---	---
07/07/98	16:57	AS	S. Injection	---	0	20.9	0.0	---	0	---	---
07/07/98	16:59	AS	N. Injection	---	0	20.9	0.0	0.00	---	---	---
07/07/98	16:59	AS	N. Injection	---	0	20.9	0.0	---	0	---	---
07/07/98	17:14	AS	W. Curb	0.0	---	---	---	---	---	---	---
07/07/98	17:16	AS	S. Injection	0.0	---	---	---	---	---	---	---
07/07/98	17:18	AS	N. Injection	0.0	---	---	---	---	---	---	---
07/07/98	17:23	AS	W. Curb	---	---	---	---	---	---	---	0.0
07/07/98	17:25	AS	S. Injection	---	---	---	---	---	---	---	0.0
07/07/98	17:27	AS	N. Injection	---	---	---	---	---	---	---	0.0
07/07/98	17:36	AS	W. Curb	---	---	---	---	---	---	0.10	---
07/07/98	17:38	AS	S. Injection	---	---	---	---	---	---	0.10	---
07/07/98	17:40	AS	N. Injection	---	---	---	---	---	---	0.10	---
07/07/98	17:41	AS	IW-4	1.0	0	20.5	0.0	0.40	0	0.00	0.0

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Outdoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Outdoor Action Level				5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/07/98	18:03	AS	IW-9	5.0	0	20.8	0.0	0.55	0	0	0.0
07/07/98	18:07	AS	IW-6	0.2	0	20.9	0.0	0.00	0	0.00	0.3
07/07/98	18:10	AS	IW-11	0.2	0	20.9	0.0	0.10	0	0.00	0.0
07/07/98	18:14	AS	MW-8	0.2	0	20.9	0.0	0.05	0	0.00	0.0
07/07/98	18:20	AS	MW-17	0.0	0	19.9	0.0	1.25	0	0.00	0.0
07/07/98	18:25	AS	MW-18D	25.0	0	20.9	0.0	0.25	0	0.00	0.3
07/07/98	18:30	AS	MW-23	14.0	0	20.9	0.0	0.50	0	0.00	0.0
07/08/98	11:09	AS	W. Curb	0.2	0	20.9	0.0	0.00	0	0.20	0.0
07/08/98	11:15	AS	S. Injection	0.2	0	20.9	0.0	0.00	0	0.10	0.0
07/08/98	11:20	AS	N. Injection	0.2	0	20.9	0.0	0.00	0	0.10	0.0
07/08/98	13:42	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/08/98	13:44	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/08/98	13:46	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/08/98	16:20	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/08/98	16:22	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/08/98	16:24	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/09/98	08:42	AS	W. Curb	1.3	0	20.9	0.0	0.00	0	0.02	0.0
07/09/98	08:46	AS	S. Injection	0.7	0	20.9	0.0	0.00	0	0.02	0.0
07/09/98	08:48	AS	N. Injection	0.7	0	20.9	0.0	0.00	0	0.02	0.0
07/09/98	10:11	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/09/98	10:13	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/09/98	10:15	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/09/98	10:21	AS	IW-7	0.0	0	20.9	0.0	0.00	0	0.02	0.0

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Outdoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Outdoor Action Level				5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/09/98	10:25	AS	IW-7 BZ	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/09/98	10:36	AS	IW-7 BZ	0.0	0	20.9	0.0	0.10	0	0.14	0.0
07/09/98	10:39	AS	IW-7 BZ	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/09/98	10:42	AS	IW-7	0.0	0	20.3	0.0	0.75	0	0.08	0.0
07/09/98	10:47	AS	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/09/98	10:52	AS	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/09/98	10:57	AS	IW-6	0.0	0	20.6	0.0	0.70	0	0.08	0.4
07/09/98	11:02	AS	IW-6 BZ	0.0	0	20.9	0.0	0.05	0	0.30	0.5
07/09/98	11:08	AS	IW-6 BZ	0.0	0	20.9	0.0	0.05	1	0.28	0.8
07/09/98	11:14	AS	IW-7 BZ	0.0	0	20.9	0.0	0.00	0	0.28	0.8
07/09/98	11:20	AS	MW-12	0.0	0	20.7	0.0	0.50	0	0.10	0.9
07/09/98	11:23	AS	MW-12 BZ	0.0	0	20.9	0.0	0.00	0	0.34	1.0
07/09/98	11:29	AS	MW-12 BZ	0.0	0	20.9	0.0	0.00	0	0.36	1.0
07/09/98	11:34	AS	IW-5	0.0	0	19.9	0.0	1.10	0	0.22	0.8
07/09/98	12:08	AS	IW-4	0.0	0	19.9	0.0	1.00	0	0.02	0.0
07/09/98	12:14	AS	IW-3	0.2	0	19.4	0.0	1.25	0	0.08	0.0
07/09/98	12:21	AS	MW-13	0.2	0	20.9	0.0	0.40	0	0.14	0.0
07/09/98	12:25	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/09/98	12:30	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/09/98	12:34	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/09/98	13:00	AS	IW-7	0.0	0	20.9	0.0	0.05	0	0.02	0.0
07/09/98	13:02	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/09/98	13:06	AS	IW-2	0.0	0	20.8	0.0	0.20	0	0.26	0.0

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Outdoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Outdoor Action Level				5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/09/98	13:30	AS	IW-6	0.0	0	20.7	0.0	0.20	0	0.08	0.0
07/09/98	13:32	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.18	0.0
07/09/98	13:36	AS	IW-1	0.0	0	20.7	0.0	0.30	0	0.12	0.0
07/09/98	13:40	AS	IW-1 BZ	---	0	20.9	0.0	0.00	---	---	---
07/09/98	15:00	AS	MW-12	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	15:03	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/09/98	15:05	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/09/98	15:07	AS	IW-2	0.0	0	20.9	0.0	0.10	0	0.12	0.0
07/09/98	15:30	AS	IW-5	0.0	0	20.9	0.0	0.15	0	0.00	0.0
07/09/98	15:32	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	15:35	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	15:39	AS	IW-1	0.0	0	19.8	0.0	0.90	0	0.00	0.0
07/09/98	15:42	AS	IW-1 BZ	---	0	20.9	0.0	0.00	---	---	---
07/09/98	15:57	AS	IW-7	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	15:59	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	16:03	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	16:05	AS	IW-2	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	16:06	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	16:24	AS	IW-6	0.0	0	20.9	0.0	0.30	0	0.00	0.0
07/09/98	16:26	AS	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/09/98	16:28	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/09/98	16:30	AS	IW-1	0.0	0	16.7	0.0	2.45	0	0.20	0.0
07/09/98	16:32	AS	IW-1 BZ	0.0	0	20.9	0.0	0.00	---	0.12	0.0

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Outdoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
	Outdoor Action Level			5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/09/98	17:15	JB	MW-12	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/09/98	17:18	JB	S Injection	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/09/98	17:21	JB	W. Curb	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/09/98	17:23	JB	IW-2	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/09/98	17:26	JB	N. Injection	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/09/98	17:45	JB	IW-5	0.2	0	15.9	0.0	3.40	0	0.02	0.0
07/09/98	17:47	JB	IW-5 BZ	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/09/98	17:49	JB	W. Curb	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/09/98	17:51	JB	IW-1	0.0	0	17.1	0.0	2.85	0	0.00	0.0
07/09/98	17:53	JB	IW-1 BZ	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/09/98	18:21	JB	IW-7	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	18:22	JB	S. Injection	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/09/98	18:24	JB	W. Curb	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/09/98	18:26	JB	IW-2	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	18:27	JB	N. Injection	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/09/98	18:46	JB	IW-5	0.0	0	20.9	0.0	0.00	0	0.02	0.0
07/09/98	18:50	JB	S. Injection	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/09/98	18:52	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/09/98	18:53	AS	IW-1	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/09/98	18:56	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/10/98	12:07	AS	S. Injection	0.2	0	20.9	0.0	0.00	0	0.14	0.0
07/10/98	12:09	AS	W. Curb	0.2	0	20.9	0.0	0.00	0	0.16	0.0
07/10/98	12:11	AS	N. Injection	0.2	0	20.9	0.0	0.00	0	0.16	0.0

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Outdoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Outdoor Action Level				5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/10/98	15:02	AS	IW-4	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/10/98	15:05	AS	IW-3	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/10/98	15:13	AS	MW-13	0.0	0	20.9	0.0	0.10	0	0.12	0.0
07/10/98	15:18	AS	IW-5	0.0	0	19.0	0.0	1.65	0	0.00	0.0
07/10/98	15:19	AS	MW-12	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/10/98	15:23	AS	IW-6	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/10/98	15:27	AS	IW-2	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/10/98	15:30	AS	IW-7	0.0	0	20.8	0.0	0.60	0	0.00	0.0
07/10/98	15:33	AS	IW-1	0.0	0	20.9	0.0	0.30	0	0.00	0.0
07/10/98	17:11	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/10/98	17:13	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/10/98	17:28	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/10/98	18:00	AS	IW-7 BZ	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/10/98	18:06	AS	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/10/98	18:15	AS	MW-12 BZ	0.0	0	20.9	0.0	0.00	0	0.18	0.0
07/10/98	18:16	AS	IW-5 BZ	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/10/98	18:23	AS	IW-7	0.0	0	20.6	3.0	0.40	0	0.00	0.0
07/10/98	18:24	AS	IW-7 BZ	0.0	0	20.9	0.0	0.00	0	0.18	0.0
07/10/98	18:44	AS	IW-4 BZ	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/10/98	18:46	AS	IW-3 BZ	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/10/98	18:48	AS	MW-12 BZ	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/10/98	18:50	AS	IW-2 BZ	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/10/98	18:53	AS	IW-1 BZ	0.0	0	20.9	0.0	0.00	0	0.08	0.0

Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Outdoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
	Outdoor Action Level			5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/10/98	19:06	AS	IW-4	0.0	0	20.9	8.0	0.75	0	0.00	0.0
07/10/98	19:08	AS	IW-4 BZ	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/10/98	19:38	AS	IW-6	0.0	0	22.0	29.0	0.60	0	0.00	1.4
07/10/98	19:43	AS	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.02	0.0
07/10/98	19:49	AS	IW-2	0.0	2	OVER	287.0	0.20	0	0.00	24.8
07/10/98	19:53	AS	IW-2 BZ	0.0	0	20.9	4.0	0.00	0	0.02	0.0
07/10/98	19:55	AS	IW-1	190.0	3	OVER	251.0	0.15	0	0.00	28.0
07/10/98	20:11	AS	IW-1 BZ	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/10/98	20:26	DE	MW-12	0.0	0	20.9	12.0	0.15	0	0.00	0.6
07/10/98	20:30	DE	S. Injection	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/10/98	20:32	DE	IW-4	19.0	1	OVER	176.0	0.20	0	0.00	10.7
07/10/98	20:40	DE	IW-4 BZ	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/10/98	20:56	DE	IW-5	5.4	2	OVER	141.0	0.15	0	0.00	10.5
07/10/98	21:00	AS	IW-5 BZ	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/10/98	21:03	AS	MW-12	0.0	2	OVER	36.0	0.20	0	0.00	1.7
07/10/98	21:07	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/10/98	21:26	AS	IW-7	1.8	1	OVER	115.0	0.25	0	0.00	6.1
07/10/98	21:30	AS	IW-7 BZ	0.0	0	20.9	0.0	0.00	0	0.16	0.0
07/10/98	21:33	AS	IW-2	0.0	2	OVER	85.0	0.20	0	0.00	5.9
07/10/98	21:37	AS	IW-2 BZ	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/10/98	22:10	AS	IW-6	0.0	2	OVER	118.0	0.25	2.8	0.00	5.8
07/10/98	22:14	AS	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/10/98	22:21	AS	IW-4	40.0	2	OVER	77.0	0.20	0	0.00	5.1

In-situ Chemical Oxidation Pilot Test
Air Monitoring Data Form

Client: WHCS Melville, LLC (c/o Archon Group) Station: Outdoor

Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Outdoor Action Level				5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/10/98	22:24	AS	IW-4 BZ	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/11/98	07:35	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/11/98	07:37	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/11/98	07:39	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/11/98	11:11	AS	IW-7	0.2	2	OVER	99.0	1.15	0	0.00	2.4
07/11/98	11:16	AS	IW-6	0.6	2	OVER	174.0	0.85	0	0.00	12.0
07/11/98	11:25	DE	MW-12	0.2	0	OVER	54.0	0.10	0	0.00	0.5
07/11/98	11:28	DE	IW-6	0.6	1	OVER	83.0	0.05	0	0.00	7.3
07/11/98	11:30	DE	IW-10	0.2	0	20.7	0.0	0.05	0	0.00	0.4
07/11/98	11:33	JB	IW-11	0.0	0	20.9	0.0	0.20	0	0.00	0.0
07/11/98	11:36	JB	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.26	0.0
07/11/98	11:37	AS	IW-12	0.0	0	20.9	2.0	0.10	0	0.00	0.0
07/11/98	11:51	AS	IW-6	0.0	1	OVER	156.0	0.30	0	0.00	1.0
07/11/98	11:55	AS	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.16	0.0
07/11/98	12:04	AS	IW-2	0.2	2	OVER	152.0	1.35	0	0.00	12.0
07/11/98	12:12	AS	IW-1	56.0	3	OVER	OVER	2.45	0	0.00	80.0
07/11/98	12:14	AS	IW-1 BZ	0.0	0	20.9	0.0	0.00	0	0.16	0.0
07/11/98	12:25	AS	IW-4	11.0	1	OVER	OVER	1.25	0	0.00	21.0
07/11/98	12:30	AS	IW-3	55.0	3	OVER	OVER	2.15	0	0.00	79.0
07/11/98	12:36	AS	IW-9	0.2	0	20.7	2.0	0.35	0	0.00	0.0
07/11/98	12:38	AS	MW-13	1.5	2	OVER	OVER	1.90	0	0.00	1.6
07/11/98	12:42	AS	MW-13D	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/11/98	12:52	AS	IW-6	0.0	1	OVER	202.0	0.05	0	0.00	0.9

In-situ Chemical Oxidation Pilot Test
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Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Outdoor Action Level				5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/11/98	12:56	AS	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.16	0.0
07/11/98	13:00	AS	IW-1	33.0	2	OVER	OVER	1.55	0	0.00	31.0
07/11/98	13:02	AS	IW-1 BZ	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/11/98	13:21	AS	IW-7	0.0	1	OVER	117.0	0.20	0	0.00	1.2
07/11/98	13:23	AS	IW-7 BZ	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/11/98	13:25	AS	IW-3	88.0	2	OVER	227.0	0.10	0	0.00	19.0
07/11/98	13:28	DE	IW-3 BZ	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/11/98	13:50	DE	IW-6	0.2	2	OVER	119.0	0.25	0	0.00	5.9
07/11/98	13:52	DE	IW-6 BZ	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/11/98	13:53	JB	IW-1	110.0	1	OVER	83.0	0.20	0	0.00	6.3
07/11/98	13:56	JB	IW-1 BZ	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/11/98	14:53	AS	IW-11	0.0	1	OVER	45.0	0.20	0	0.00	0.0
07/11/98	14:55	AS	IW-11 BZ	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/11/98	15:00	AS	MW-13D	0.0	2	OVER	30.0	0.20	0	0.00	1.2
07/11/98	15:01	AS	MW-13D BZ	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/11/98	15:23	AS	MW-12	0.0	1	OVER	49.0	0.45	0	0.00	0.0
07/11/98	15:25	AS	MW-12 BZ	0.0	0	20.9	0.0	0.00	0	0.08	0.0
07/11/98	15:28	AS	IW-2	0.0	2	OVER	27.0	0.35	0	0.00	2.2
07/11/98	15:30	AS	IW-2 BZ	0.0	0	20.9	0.0	0.00	0	0.20	0.0
07/12/98	07:07	AS	S. Injection	0.2	0	20.9	0.0	0.00	0	0.02	0.0
07/12/98	07:09	AS	W. curb	0.2	0	20.9	0.0	0.00	0	0.04	0.0
07/12/98	07:11	AS	IW-1	1.4	0	20.9	0.0	0.05	0	0.00	0.0
07/12/98	07:13	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.02	0.0

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Site: 25 Melville Park Road, Melville, NY Project No.: U0063-001-01-00

Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Outdoor Action Level				5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/12/98	09:40	AS	IW-6	0.2	0	24.6	3.0	0.00	0	0.00	0.3
07/12/98	09:42	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/12/98	09:44	AS	IW-1	1.4	0	23.1	4.0	0.10	0	0.00	0.0
07/12/98	09:46	AS	IW-1 BZ	0.0	0	20.9	0.0	0.00	0	0.10	0.0
07/12/98	09:50	AS	IW-12	0.0	1	OVER	29.0	0.35	0	---	7.5
07/12/98	09:52	AS	IW-7	---	---	---	---	---	---	---	1.9
07/12/98	09:54	AS	IW-7	---	---	---	---	---	---	---	39.0
07/12/98	09:56	AS	IW-7 BZ	0.0	0	20.9	0.0	0.00	0	0.06	0.0
07/12/98	10:02	AS	MW-12	---	---	---	---	---	---	---	2.0
07/12/98	10:07	AS	MW-12	---	---	---	---	---	---	---	16.0
07/12/98	10:14	AS	IW-7	0.0	2	OVER	126.0	0.95	0	0.00	4.9
07/12/98	10:17	AS	IW-7 BZ	0.0	0	20.9	0.0	0.00	0	0.16	0.0
07/12/98	10:19	AS	IW-3	67.0	2	OVER	2.0	0.15	0	0.00	7.5
07/12/98	10:22	AS	IW-3 BZ	0.0	0	20.9	0.0	0.00	0	0.16	0.0
07/12/98	11:05	AS	IW-5	0.0	0	23.2	16.0	0.10	0	0.00	0.0
07/12/98	11:07	AS	IW-5 BZ	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/12/98	11:10	AS	IW-4 BZ	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/12/98	11:12	AS	IW-4	0.2	1	OVER	95.0	0.10	0	0.00	5.7
07/12/98	11:35	AS	IW-8	0.0	2	OVER	40.0	0.20	0	0.00	2.9
07/12/98	15:35	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/12/98	15:37	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.14	0.0
07/13/98	09:51	AS	W. Curb	0.0	0	20.9	0.0	0.00	0	0.04	0.0
07/13/98	09:52	AS	N. Injection	0.0	0	20.9	0.0	0.00	0	0.06	0.0

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Date	Time	Initials	Station	VOCs (ppm)	LEL (%)	O2 (%)	CO (ppmv)	CO2 (%)	H2S (ppmv)	Cl2 (ppmv)	HCN (ppmv)
Outdoor Action Level				5	5	< 19.5 > 22	25	0.25	5	0.5	2.5
07/13/98	09:54	AS	IW-1	0.0	0	20.9	0.0	0.00	0	0.00	0.0
07/13/98	09:56	AS	IW-12	0.0	1	OVER	45.0	1.05	0	0.00	0.0
07/13/98	09:58	AS	S. Injection	0.0	0	20.9	0.0	0.00	0	0.12	0.0
07/13/98	10:00	AS	IW-12 BZ	0.0	0	20.9	0.0	0.00	0	0.12	0.0